

HRD JOURNAL
Volume 9, Number 2, December 2018

Editorial

Paratchanun Charoenarpornwattana

Articles

**Critical Thinking in Foreign Language Acquisition: A Study of the Italian
Language Teaching**

Luca De Mori, Anong Wisessuwan, Chalong Tubsree

**Developing Reading Comprehension Skills for Grade 6 Students at Piboonbumpen
Demonstration School using Multimedia**

Rapin Chuchuen, Prayoon Imsawasd, Panpetch Romsai, Krisana Kimlengchiu

**Supplier Evaluation and Selection for IT Service Group using the Analytic
Hierarchy Process**

Kunyaluk Nuchprayoon, Chayathach Phuaksaman

**The Development of an Augmented Reality Media Using Inquiry-Based Learning
on the Topic of the Force and Motion Object**

Noppadol Prammanee, Tiomyod Pasawano

**Consulting Services Needed for Chinese Investors to Develop Business in
Rayong Province, Thailand**

Ju Yunyi, Nart Nontasak, Ronald Markwardt

**Analysis of Chinese Talent Management Strategy: Emphasis on Cao Cao's
Competencies from Records of Three Kingdoms**

Lu Kuicheng, Chalong Tubsree, Surin Intayot

**Competencies Needed for Career Growth of the Young Chinese to Work for
Transnational Companies Investing in Chonburi Province, Thailand**

Li Zhuoheng, Nart Nontasak, Ronald Markwardt

**Career Development Plan in an Organization: A Selected Case Study of an Automotive
Parts Company in the Eastern Seaboard Industrial Estate, Rayong Province, Thailand**

Benyatip Ruangsaeng, Paratchanun Charoenarpornwattana, Chalerm Sri Chantarathong

**Influence of Motivation According to ERG Theory and Employee Commitment to
Work-Performance: A Case Study of One Toy Car Manufacturing Company in
Pathum Thani Province**

Nantana Jongdee, Krisada Chienwattanasook

Emerging NHRD in Transitioning Myanmar

Zaw Naing



ISSN: 1906-9308

VOLUME 9. NUMBER 2.

December 2018

HRD JOURNAL

Department of
International
Graduate Studies
in Human Resource
Development,
Faculty of Education,
Burapha University,
Thailand

Volume 9, Number 2, December 2018

HRD JOURNAL

ISSN: 1906-9308

Editor in Chief

Dr. Paratchanun Charoenarpornwattana

Advisory Board

Associate Professor Dr. Sadayu Teeravanittrakul

Managing Editor

Onchira Bunyaphala

Rattanasiri Khemraj

Editorial Board

Professor Dr. Alma Whiteley	Curtin University of Technology, Australia
Professor Dr. Brian Sheehan	Asian Forum on Business Education, Thailand
Professor Dr. Gary N McLean	McLean Global Consulting, USA
Professor Dr. John Dewar Wilson	Australia
Professor Dr. Somsak Pantuwatana	Bangkok, Thailand
Associate Professor Dr. Ian Smith	Australia
Associate Professor Dr. Chalong Tubsree	Chonburi, Thailand
Associate Professor Dr. Anong Wisessuwan	Chonburi, Thailand
Associate Professor Dr. Uthai Piromruen	Bangkok, Thailand
Assistant Professor Dr. Janpanit Surasin	University of Wisconsin-Madison, USA
Distinguished Professor Dr. Jamnean Jountrakul	BLCI Group, Thailand
Dr. Chalerm Sri Chantarathong	Chonburi, Thailand
Dr. Denchai Prabjandee	Burapha University, Thailand
Dr. Padoongchart Suwannawongse	Former Director, RIHED, SEAMEO
Dr. Katsunori Kaneko	Osaka City University, Japan
Dr. Nart Nontasak	Chonburi, Thailand



Dr. Paratchanun Charoenarpornwattan

Burapha University

Dr. Punwalai Kewara

Burapha University

Dr. Yupa Pongsabutr

Bangkok, Thailand

Dr. Saratid Sakulkoo

Nongkhai, Thailand

**Department of International Graduate Studies in
Human Resource Development,
Faculty of Education,
Burapha University,
Thailand**

Contents

Editorial

	Page
Articles	
Articles	
Critical Thinking in Foreign Language Acquisition: A Study of the Italian Language Teaching	6
<i>Luca De Mori, Anong Wisessuwan, Chalong Tubsree</i>	
Developing Reading Comprehension Skills for Grade 6 Students at Piboonbumpen Demonstration School using Multimedia	17
<i>Rapin Chuchuen, Prayoon Imsawasd, Panpetch Romsai, Krisana Kimlengchiu</i>	
Supplier Evaluation and Selection for IT Service Group using the Analytic Hierarchy Process	26
<i>Kunyaluk Nuchprayoon, Chayathach Phuaksaman</i>	
The Development of an Augmented Reality Media Using Inquiry-Based Learning on the Topic of the Force and Motion Object	37
<i>Noppadol Prammanee, Tiarnyod Pasawano</i>	
Consulting Services Needed for Chinese Investors to Develop Business in Rayong Province, Thailand	54
<i>Ju Yunyi, Nart Nontasak, Ronald Markwardt</i>	
Analysis of Chinese Talent Management Strategy: Emphasis on Cao Cao's Competencies from Records of Three Kingdoms	64
<i>Lu Kuicheng, Chalong Tubsree, Surin Intayot</i>	
Competencies Needed for Career Growth of the Young Chinese to Work for Transnational Companies Investing in Chonburi Province, Thailand	74
<i>Li Zhuoheng, Nart Nontasak, Ronald Markwardt</i>	
Career Development Plan in an Organization: A Selected Case Study of an Automotive Parts Company in the Eastern Seaboard Industrial Estate, Rayong Province, Thailand	84
<i>Benyatip Ruangsaeng, Paratchanun Charoenarpornwattana, Chalerm Sri Chantarathong</i>	
Influence of Motivation According to ERG Theory and Employee Commitment to Work-Performance: A Case Study of One Toy Car Manufacturing Company in Pathum Thani Province	92
<i>Nantana Jongdee, Krisada Chienwattanasook</i>	
Emerging NHRD in Transitioning Myanmar	102
<i>Zaw Naing</i>	



HRD

JOURNAL

Editorial

The purposes of HRD Journal in particular to publish the articles both academic and research articles in the fields of business management, human resource management, human resource development, English teaching, and education through closer cooperation in education and life-long learning in social sciences for the empowerment of academicians, researchers, and readers of the communities in the world.

HRD journal also needs to have information about the quality of human resources and education in dealing with the business challenges in 21st century.

In this issues we have 10 research articles in the scope of Critical Thinking in Foreign Language Acquisition, Developing Reading Comprehension Skills, Supplier Evaluation and Selection using the Analytic Hierarchy Process, Augmented Reality Media (AR Media) using Inquiry-Based Learning, Consulting Services Needed for Chinese Investors, Collaborative Strategy Development, Chinese Talent Management Strategy, Competencies Needed for Career Growth of the Young Chinese to work for Transnational Companies, Career Development Plan, Influence of Motivation According to ERG Theory and Employee Commitment to Work-Performance, and NHRD in Myanmar.

We are very welcome and hoped that we can get articles with different perspectives and contexts.

Editor in Chief



Paratchanun Charoenarpornwattana, Ph.D.

Critical Thinking in Foreign Language Acquisition: A Study of the Italian Language Teaching

Luca De Mori, Burapha University, Thailand

Anong Wisessuwan, Retired professor, Chonburi, Thailand

Chalong Tubsree, Retired professor, Chonburi, Thailand

Abstract: *Critical thinking is one of the most sought after abilities for students in their learning institutions and workers in their work places. One of the subjects in which critical thinking skills might be developed is foreign language acquisition. According to existing literature, critical thinking might help learners to improve their knowledge of the target language. The main purpose of this research was to investigate the reactions of a group of advanced students at a major Thai university who experienced the introduction of critical thinking strategies in foreign language acquisition. In this particular study the target language was Italian. The paradigm of this research was social constructivism and the research approach was qualitative. The strategy of inquiry was phenomenology. The informants were 11 advanced students of Italian at Chulalongkorn University and 3 of their lecturers. In order to be selected for this research they had to satisfy a number of pre-determined requirements. Each of them gave his/her written consent to one-to-one, in depth interviews providing their insight on the matter under study. All informants signed a consent form before the interview. To protect their privacy they asked not to reveal their identity. The findings confirmed those of the existing literature: using critical thinking in foreign language acquisition, although it proved to be a difficult task for some students who had never previously experienced it, has been found to be effective and useful by most students and by all the lecturers to improve learners' skills, both in the target language and in critical thinking. Students and lecturers also agreed that critical thinking should be more widely used in Thailand for the positive effects it has on both skills.*

Keywords: Critical thinking, Reasoning, Problem solving, Foreign language acquisition and Foreign language teaching

Statement and significance of the problem

Critical thinking is a resource not commonly used in Thai schools or even in Thai universities, so the number of studies regarding its implementation in Thai academic programs is limited. Most existing studies about critical thinking in the context of foreign language acquisition are concerned with English as the target language. As there are almost no studies regarding critical thinking in learning Italian as a foreign language, this research will give a minor contribution to the knowledge and implementation of critical thinking in foreign language acquisition. Even if in this particular case the language object of the study is a niche language like Italian, the study might be a step in the direction of studying the effects of using and implementing critical thinking skills in learning any other foreign languages.

Research Objectives

The main objectives of this study were the following:

1. To investigate the students' reactions (both positive and negative) when experiencing critical thinking in advanced classes of Italian as a foreign language.
2. To explore the relationship and influence of these reactions to the effectiveness of critical thinking in learning Italian as perceived by the students.
3. To investigate the students' opinions about using an American and western approach like critical thinking in an Asian and Thai context.

4. To investigate the lecturers' teaching strategies and opinions about using critical thinking in language learning.

Research Questions

1. What was the Thai students' perception of their personal experience of using critical thinking in the acquisition of Italian as a Foreign Language?
2. According to the same students, is critical thinking applicable and useful in the context of foreign language acquisition?
3. According to the same students, is critical thinking successfully applicable in a Thai context?
4. What critical thinking teaching strategies had been employed by instructors at the Section of Italian - Department of Western Language of Chulalongkorn University?

Literature Review

CT never had a single definition universally accepted; in fact, often even scholars from the same field do not share the same opinion about what exactly critical thinking is or how to define it. The theory of critical thinking is very old. Traditionally the Greek philosopher Socrates is considered to be the father of critical thinking. He is known to have created the so-called Socratic Method, a special kind of dialogue between teacher and students that used reasoning to analyze different opinions and refute weak ones. In modern times the American Philosophical Association described the ideal critical thinker as a flexible and open-minded person, able to consider other people's opinions and points of views, someone who was able to suspend his/her judgment if unable to get sufficient information, or "... *judging in a reflective way what to do or what to believe*" (Facione, 2000, p. 61). Cognitive psychologists who follow the behaviorist tradition tend to focus their attention more on what people do in their real life, and not on how people should think in theory. According to this school of thought, critical thinkers should be able to see "... *both sides of an issue, being open to new evidence that disconfirms your ideas...*" (Willingham, 2007, p. 8). Scholars belonging to the field of cognitive psychology usually define critical thinking providing examples of the behaviors displayed by critical thinkers or the kind of actions that they are able to perform (Lewis & Smith, 1993).

The third classical approach to critical thinking is the so-called educational approach. Scholars belonging to this school of thought tend to follow Bloom's taxonomy (Bloom, 1956 and revised versions), which includes six levels of abilities listed in hierarchical order. Critical thinking can be defined by the three highest thinking levels, defined as "analyzing, evaluating and creating" in the revised taxonomy (Overbaugh and Schultz, 2015). Other scholars have different approaches to the problem. Some tend to focus on a more practical definition: "*Critical thinking is reasonable reflective thinking that is focused on deciding what to believe or do*" (Ennis, 1987). This definition is completed by a long list of abilities (available skills) and dispositions (willingness to implement said abilities) that critical thinkers should possess. The problem of this approach is the complexity of the taxonomy and the difficulty to establishing a practical way to evaluate if those abilities and dispositions really exist and are really applied in real life situations. (Baron and Sternberg Eds., 1987, pp. 9-26).

In the field of Human Research Development (HRD) learning is traditionally highly esteemed. Among the ten assumptions of the learning paradigm proposed by Swanson, those which are more connected with critical thinking are the following:

Learning Paradigm Assumption 3: *The primary purpose of HRD is development of the individual... the primary goal of HRD ... is to help individuals achieve their full potential.*

Learning Paradigm Assumption 5: *Organizations are best advanced by having fully developed individuals.*

Learning Paradigm Assumption 6: *Individuals should control their own learning process. ... Individuals are presumed to have the inherent capacity and motivation to direct their own learning in a way that is most beneficial to them.* (Swanson and Holton, 2009, p. 147/149)

The analysis of these assumptions reveals that critical thinking might help workers to develop their full potentials; that is defined in assumption 3 as “*the primary purpose of HRD*”. Even more important for the connection between critical thinking and the field of HRD is assumption 6, which underlines the significance of having a work force able to take active control of their own learning and to use it for their own advantage. Of course not all scholars agree on the positive role of HRD in the field of training and development. Some scholars noted that organizations might make “... *use of training and development as a ‘fix-it’ solution for what is often entrenched organization dysfunction...*” (Elliott and Turnbull, 2005, p. 2).

Others noted that CT can be a double edged sword, as it provides workers with the knowledge and the tools that might be used against the authorities, because sometimes “*People who are taught to think critically often question established wisdom or even the authorities who are in charge*”. (Wagner, 2012, p. 38).

Talking about the relationship between critical thinking and foreign language acquisition, several scholars suggested a number of reasons to implement it. Learners of any foreign language can use critical thinking to develop their own metacognitive abilities and to help students change their role in the language classroom. Instead of being just passive recipients of what their instructors teach them, they can play a more active role in their own learning experience, evaluating their own progress (self-evaluation) and improving their vocabulary. It can also help learners to understand not only the explicit meaning of statements, but also the implicit ones, those which are “between the lines”. Several researches have confirmed that teaching of critical thinking skills has a positive influence on competence in L2 writing (Liaw 2007; Shahini and Riazi 2010; Gibson 2012). Many scholars noted that the best way to help learners develop critical thinking and foreign language abilities at the same time was the so-called “content teaching”. It is a way of teaching in which learners are provided with meaningful contents in the context of the foreign language class, asking students to read, analyze and criticize those contents using the target language. “*Understanding content in a profound way was dependent on a deep understanding of target vocabulary ...discerning thoughts related to content material*”. (Gibson, 2012, p. 136). In fact, “*Reading is not merely a receptive process of picking up information from the page in a word-by-word manner*” (Grabe, 1991, p. 1).

The mutual relationships existing between critical thinking skills and proficiency in a foreign language can be summarized as follows: They “*feed each other*”. (Brumfit, Myles, Mitchell, Johnston & Ford, 2005, p.158).

Research Methodology

- Research Design and Instrument

This study was made using a qualitative approach with social constructivism as paradigm or worldview. The strategy of inquiry used in this research was phenomenology. The choice of a phenomenological strategy of inquiry for this study was due precisely to the fact that it focused on exploring the essence of a particular phenomenon: the students’ experiences and

reactions to critical thinking in foreign language acquisition and how those experiences influenced their opinion of critical thinking. Phenomenological studies explore the consciousness in human experiences using long, non-structured interviews with a number of selected informants till data saturation. Data saturation is considered to be reached when all research questions have been answered, and/or when new interviews do not provide any relevant data or any new information.

- **Informants**

In this particular case the informants were 11 students of the course “Italian 5” at the Section of Italian, Department of Western Languages, Chulalongkorn University and 3 of their lecturers.

- **Criteria for selecting research informants**

There was no need to purposefully select the informants, as all of them satisfied the requirements determined for taking part in the research; the students needed to:

- Have a good knowledge (at least B1) of the target language that could allow them to express easily their feelings, thoughts and opinions;
- Have attended all or most of classes in which critical thinking techniques and exercises had been used;
- Be willing to take part in the research giving their written consent to be interviewed by the researcher.

The lecturers had to satisfy the following requirements:

- They had to be lecturers of Italian at Chulalongkorn University
- They had to be knowledgeable about critical thinking
- They had to have used critical thinking in their courses
- They had to be willing to take part in the research as informants.

Data collection and data analyses

The data collection for this research was made primarily by recording the one-to-one, unstructured interviews with those informants and by observing the same informants during the interviews. All interviews were audio-recorded and transcribed verbatim. The data were then analyzed by the method of coding. The process of data analysis and interpretation adopted in this research has followed the model proposed by Creswell (2009).

Results

In the process of data analysis the Moustakas’s (1994) method for conducting qualitative phenomenological research has been used to find the meaning units of the experiences, organize the units into themes, and blend the units and themes into a description of the participants’ experiences. This study was conducted by one researcher only.

Presentation and description of findings regarding the first research question.

The first research question was the following: *What was the Thai students’ perception of their personal experience of using critical thinking in the acquisition of Italian as a Foreign Language?*

The analysis of the data regarding this question revealed these four main themes:

Theme	First research question
1	Lack of previous experience with critical thinking
2	Problems and difficulties with critical thinking in general
3	Usefulness of critical thinking as mind opener in everyday life
4	Suggestions and advices to fellow students and lecturers

Theme 1: Lack of previous experience with critical thinking.

Regarding this theme all 11 students declared they had no previous experience whatsoever with critical thinking not only during their high school years but also at the university. Many informants even added that they had even never heard the expression “critical thinking” before their Italian courses at the university. Some examples of student’s direct quotations regarding this point include the following: “... *We did not care that much about the subjects because they were not so interesting or we did not ask too much*” (Student 1); “*At school we learned from teachers and the books, and we had to read and remember and ... do exams and then we forgot everything ...*” (Student 2).

Theme 2: Problems and difficulties with critical thinking in general

Regarding this theme some students spoke about the difficulties they experienced with critical thinking. Several students remarked that they were unfamiliar with it even in their native language, let alone in a foreign one. The followings are opinions provided by students: “*I think it's quite challenging for us, like we have to read and answer passages that we have never seen before and she would ask us some questions ...like we have no time to search on the Internet or something like that*” (Student 8).

Theme 3: Usefulness of critical thinking as mind opener in everyday life.

Regarding this theme all students noted the advantages in using critical thinking in real life. Some expressed their awareness of how easily they can be manipulated and how much we all need to be more aware of hidden meanings, agendas and biases in what we read and listen.

These are viewpoints from students:

“*I think it is useful for everyone, because is not just only about classes or academic achievement, but it is also about the way that we live. ...without critical thinking skills as I said you cannot make a good human being*” (Student 2); “*... I mean critical thinking maybe helps you to take a decision more easily and maybe correctly*” (Student 3).

Theme 4: Suggestions and advices to fellow students and lecturers regarding critical thinking.

Regarding this theme all students provided some suggestions both for future students of Italian and for the lecturers of the same subject: “*Students ... should be able to discuss about a topic using their own ideas ... because in that way they ... change from being a passive learner to an active learner...*” (Student 2); “*I would suggest them that you should study every subject with critical thinking because I think it's more useful than you learning like grammar, ... even if it's really hard*” (Student 4).

Presentation and description of findings regarding the second research question.

The second research question was the following: *According to the same students, is critical thinking applicable and useful in the context of foreign language acquisition?*

The analysis of the data regarding this question revealed these two main themes:

Theme	Second research question
1	Problems and difficulties with CT in foreign language acquisition
2	Advantages and usefulness of using CT in foreign language acquisition

Theme 1: Problems and difficulties with critical thinking in foreign language acquisition

Regarding the second research questions most informants agreed that critical thinking could be applied with positive results in foreign language acquisition, but a few students

expressed some reservation about it. Usually students who were extroverts and spoke Italian more fluently showed more enthusiasm for this activity. On the contrary students who were introverts or with a lower self-esteem, and who felt less at ease discussing in Italian in front of their instructors and friends expressed more reservations. Some skeptical expressions from the student informants: *"In Asian countries critical thinking is not part of the way we learn here..."* (Student 2); *"In high school ...teacher never taught us about critical thinking"* (Student 8); *"I can't elaborate the ideas well enough, it's like...I still think like ordinary people..."* (Student 4); *"You have to be good at that language, enough to think critically in that language"* (Student 9).

Theme 2: Usefulness of using critical thinking in foreign language acquisition:

Regarding this theme the vast majority of the students expressed a positive opinion towards critical thinking in foreign language acquisition and listed some of the advantages they noted in learning Italian using critical thinking activities. On the contrary, three students out of eleven expressed some reservations in this regard. The reasons they gave to justify such an attitude were mainly connected with the difficulties they experienced in reconciling the complicated process of learning a foreign language with the equally complex process of this unfamiliar approach:

A Positive opinions from students

"I think that critical thinking is still very useful for language acquisition because it's sort of like you can train your brain to think more..." (Student 2); *"I think not only in Italian, but in every other language... can improve our thinking"* (Student 6); *"Both grammar and language are skills. Critical thinking is skills. It's quite hard to practice two skills at the same time, but ... skills can be developed."* (Student 7); *"I think it's very useful... if you get the chance to combine learning languages and critical thinking it's better"* (Student 8);

B Skeptic opinions from students

"... if you just memorize lessons we would forget everything" (Student 8). Three students expressed some reservations: *"I think that critical thinking is good, but I think that learning Italian and critical thinking are not connected together..."* (Student 4); *"I think it's not much related... if I want to study Italian I have to know the grammar and vocabulary..."* (Student 5); *"I think...it's useful, but not much..."* (Student 9).

Presentation and description of findings regarding the third research question.

The third research question was the following: *According to the same students, is critical thinking successfully applicable in a Thai context?*

The analysis of the data regarding this question revealed these three main themes:

Theme	Third research question
1	Difference between Thai/Asian society and Western society
2	Obstacles to the introduction of CT in Thai schools/university
3	Reasons to promote the introduction of CT in Thai schools/university

Regarding the third research questions all students agreed that critical thinking could profitably be applied and used in a Thai context, even if it is (or it appears to be) something alien to Asian culture and worldview. Some even have gone so far to suggest the urgent need to implement critical thinking in an Asian context and Thai, because they are lacking of it. Followings are students' observations:

"It's the mindset of Thai people... it's like that... we have to obey this and that... if you think differently that's not right." (Student 1); *"Here social classes is very hierarchical ...it's quiet hard to get the chance to criticize their teachings and what they do"* (Student 2); *"... when Thai people read the news on the television... they do not consider if this is true or*

not” (Student 4); *“In Thailand there are more than 40 or 50 students in the class and I think it is hard to ask all students about their opinions....”* (Student 8); *“Thai people ... they judge things... from just looking... they don't use critical thinking”* (Student 10).

Some students provided examples of the differences they found between themselves and foreign students: *“(My friends) from Finland and from Germany... they were always criticizing things... they came and they were able to produce thoughts in a very critical way which I couldn't ...”* (Student 2); *“I think it would be more difficult here, because in the Western world they seem like they have already got used to it”* *“In Asia and in Thailand ... we learn only in the classrooms.”* (Student 9); *“I think Western culture is student-centered ... but in Thailand ... it is teacher-centered”* (Student 11).

Some examples of student's opinions regarding the resistance to critical thinking (from teachers, lecturers, educators, families, politicians) include: *“I think it's a long time to make the parents and teachers to understand this way...”* (Student 3). Several students agreed that critical thinking is good to improve people's reasoning abilities and to create better citizens: *“I think I learnt... to care more about morality or ethics, because sometimes in the past I didn't care so much about social problems...”* (Student 1); *“Thai students don't know the right way to fix a problem... I mean critical thinking maybe helps you to take a decision more easily and maybe correctly”* (Student 3); *“Critical thinking will adapt to my future career, my life and career...”* (Student 4); *“We have many sources of information... but how do we compare, how do we decide which information is true? Critical thinking for me isto distinguish the truth and the falsehood”* (Student 7); *“When I have to be interviewed for job, I think that it can make me different from the others... and we will get more chances at work...”* (Student 8).

Presentation and description of findings regarding the fourth research question.

The fourth research question was the following: *What critical thinking teaching strategies had been employed by instructors at the Section of Italian - Department of Western Language of Chulalongkorn University?*

The analysis of the data regarding this question revealed these five main themes:

Theme	Fourth research question
1	Kind of courses in which critical thinking was used, with rationale for such a choice
2	Approach used by the lecturers in class with students
3	Perceived students' reactions to critical thinking in university courses
4	Problems encountered by lecturers in implementing critical thinking in their courses
5	Lecturers' evaluation of the effectiveness of critical thinking in their respective courses

As far as the fourth question is concerned, the lecturers provided examples on how they implemented critical thinking in their classes: among others they provided students with articles with different or opposing viewpoints about the same matter asking them to take a side and defend their position. Other techniques involved asking students to tell apart facts and opinions in a given text or identify fallacies and weak points into statements. All the

lecturers expressed a positive opinion of their experience. According to the lecturers, the rationale for deciding in which courses it was appropriate to introduce critical thinking depended on the followings:

- a) Courses in which students were supposed to take part in discussions and debates;
- b) Courses in which it was possible to provide enough material (newspaper articles, magazines, statistics, graphics, etc.) to stimulate students' interests and motivation;
- c) Courses that only students with a pre-determined level of knowledge of the target language could attend.

Suggestions from the lecturer informants

The lecturers also noted that the choice of materials/texts to be used in the course was extremely important to improve interest and motivation among students. *"The choice of the material... is not an easy one. In fact, you have to be careful not to choose material that is too difficult and can discourage some students. On the other hand, the same material must not be too easy...I also used articles taken from newspapers with opposing views on news... I tried to involve students in conversations and activities using material that could be of interest to them"*. Lect3.

Regarding the difficulties in implementing this way of teaching, lecturers also noted that *"...most students were not really happy with this way of learning. They are more used to the traditional approach of lectures and exams in which they basically have to memorize and repeat what the instructors tell them. Apparently nobody asked them before to analyze, criticize or put in doubt what they learnt. And that request was something new and confusing for the students."* Lect3. Nevertheless, lecturers were satisfied with the progress their students made: *"We saw improvement...if you look at students individually, personally, you see improvements"*. Lect1. *"I have to say that I was favorably impressed by several students..."* Lect2. *"I have to say that several students improved during class activities...Most of them at the end of the course knew how to analyze texts, identify logical fallacies or hidden meanings. They understood the importance of evaluating the sources and contents of news or texts..."* Lect3

Findings and Conclusions

The process of coding, grouping codes into families, analysis of meaning, frequency and significance of the informants' views provided the researcher with a significant amount of information regarding the student's perception of their learning experience with critical thinking in foreign language learning and the lecturers' approach to it.

1. Findings of the first research question

Regarding the first research questions the vast majority of the students regarded their learning experience with critical thinking as positive and meaningful. Even the few (3 out of 11) who expressed some reservations regarding the effectiveness of using critical thinking to improve foreign language skills, at some later stage of their respective interviews expressed appreciation for the results of this activity. From the analysis of the students' interviews the first common characteristic was their lack of experience with critical thinking in previous university courses. Several students also expressed their worries due to the double task they had to face. On one side they had to practice critical thinking, which is a hard task in itself: They had to analyze complex material and articles with opposing viewpoints and they had to choose and defend one of the positions expressed in the articles. Students also had to perform all CT activities in a foreign language, without having time to prepare themselves or to use a dictionary. Even the best students found themselves in uncharted territories, far from their familiar comfort zone in which they just had to memorize and repeat the lecturer's words.

The students' personality was another determining factor in their response to these activities. Extroverted students expressed a more positive perception of CT activities. Of course the opposite was also true: shy students were much more likely to express doubts about critical thinking than their self-confident counterparts.

2. Findings of the second research question

The majority of the students agreed that CT is not only applicable but also useful in the context of foreign language acquisition. Some noted that they become more aware of the limits of their knowledge of the target language. In fact, when learners are confronted only with simple tests purposely created for foreigners and with familiar tasks and activities, they might easily overestimate their knowledge of the target language. CT and learning a foreign language are two intellectual activities which work synergistically to the development of both skills. But 3 students out of 11 expressed reservations about the usefulness of CT in the context of language learning, even if later they seemed to review their position. These 3 students found that the idea of mixing the process of language learning with the even more stressful process of developing critical skills was too difficult for them. Interestingly the same students later expressed appreciation for CT when they considered the issue from a more practical point of view, for example how to distinguish between reliable and unreliable sources or texts.

In conclusion, regarding the second research questions, the vast majority of the students accepted without reservation the applicability of CT in foreign language acquisition and agreed that CT is indeed useful to improve the overall knowledge of the target language.

3. Findings of the third research question

The vast majority of the students agreed that CT not only could but rather should be successfully introduced and used in a Thai and Asian context, even considering the differences between Thailand and Asia and the Western countries. Some regretted the fact that in Thailand students are not encouraged to think. The students also expressed their awareness that the different context implied more difficulties in the implementation of CT, due to the resistance to change from a variety of social institutions, family, school authorities, teachers, politicians, etc.

In conclusion, according to the student informants, CT is successfully applicable in a Thai context.

4. Findings of the fourth research question

Lecturers provided details regarding how and with which material they introduced critical thinking in their classes of Italian. They agreed that students must be prepared in advance to the new tasks, the right material must be chosen and that it takes time for all students to get involved in this way of learning.

In conclusion, they noted improvements among the students and positive results from their teaching; they also expressed the intention to continue using CT in their courses in the future.

Points for discussion

In discussing the findings relating to this research, all informants perceived CT as a completely new activity and some of them considered it to be difficult or very difficult. Students remarked that in high school only had to memorize what teachers taught them and were not supposed to criticize or ask questions; in fact this behavior was seen as an attitude of defiance and disrespect towards teachers. Anyway it must be highlighted that the vast majority of the students expressed a positive or very positive overall perception of this particular learning experience; they also accepted without reservations the applicability of CT in foreign language acquisition. The informants agreed with existing literature: providing learners with texts from different sources and use them to make students analyze and discuss using the target language is considered by many scholars as a much more powerful learning

tool than the traditional way of teaching. Students also considered CT as very useful to develop their deep reading and reasoning abilities, helping them to identify fallacies and hidden meanings in the texts and to recognize the communicative intention of the authors. Finally students agreed that CT could and should be applied and implemented in the Thai context and expressed their hope that CT will continue to be used and promoted in Thailand.

Implications from the findings and future research studies

The majority of the studies regarding CT in foreign language acquisition is concerned only with English as the target language. Even if this study regarded Italian as the target language, the findings can be generalized to any other foreign language, including English. This study confirmed the findings of similar studies: CT is indeed applicable and useful to improve logical and language skills in foreign language learners. The main problem with existing studies is that they usually do not consider the point of view of the students when facing critical thinking activities in a foreign language. Another characteristic of the present research is that it compares the two different points of views of learners and their instructors. In fact only taking into account the two opposing sides is possible to create a more complete picture of a phenomenon and analyze in depth all its aspects. Although this research has confirmed the findings of the existing literature, it is necessary to carry out further studies to substantiate the results obtained. A good way to do so would be to investigate the perceived and real effectiveness of critical thinking in foreign language acquisition with a larger number of informants.

References

- Atkinson, D. (1997), A Critical Approach to Critical Thinking in TESOL, *TESOL Quarterly Volume 31, Issue 1, Spring 1997*, p.71–94.
- Baron and Sternberg (Eds. – 1987), *Teaching Thinking Skills: Theory and practice*, NY: W.H. Freeman, pp. 9-26.
- Bloom, B. S., Engelhart, M. D.; Furst, E. J.; Hill, W. H.; Krathwohl, D. R. (1956). Taxonomy of Educational Objectives: The classification of educational goals. Handbook I: *Cognitive domain*. New York: David McKay Company.
- Brumfit C., Myles F., Mitchell R., Johnston B & Ford, P. (2005), Language study in higher education and the development of criticality, *International Journal of Applied Linguistics*, 15(2), 145-168.
- Creswell J. W. (2009), *Research Design - Qualitative, Quantitative and Mixed Methods Approaches*, Los Angeles-London, Sage
- Dewey J. (2010), *How We Think*, Boston, D.C. Heath & co. 1910
- Elliott C. and Turnbull, S., (2005) *Critical thinking in Human Resource Development*. Routledge London and New York.
- Facione P. A. (1990). *Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction*, Millbrae, CA: The California Academic Press.
- Fuyun G., (2014), A Content Analysis of the Definition of Critical Thinking, *Asian Social Science*; 10(19).
- Grabe W. (1991), Current Development in Second Language Reading Research, *TESOL Quarterly*, 25 (3), 375-406.
- Lewis A. & Smith D. (1993), Defining higher order thinking, *Theory into Practice*, 32(3), 131–137.
- Liaw, M., (2007) Content-Based Reading and Writing for Critical Thinking Skills in an EFL Context, *English Teaching & Learning*, 31.2, 45-87.
- Moustakas, C.E. (1994), *Phenomenological research methods*. Thousand Oaks, CA: Sage

- Overbaugh, R. & Schultz, L. (2013), Bloom's Taxonomy, Old Dominion University, in http://ww2.odu.edu/educ/roverbau/Bloom/blooms_taxonomy.htm
- Paas F., Renkl A., Sweller J., (2004), Cognitive Load Theory: Instructional Implications of the Interaction between Information Structures and Cognitive Architecture, *Instructional Science* 32: 1–8.
- Scriven, M. and Paul, R., (1987) - *The National Council for Excellence in Critical Thinking*, presented at the 8th Annual International Summer Conference on Critical Thinking and Education Reform.
- Shanini G, and Riazi A., (2010), A PBLT approach to teaching ESL speaking, writing, and thinking skills, *Oxford Journals Arts & Humanities ELT Journal* Volume 65, Issue 2, p. 170-179.
- Shirkhani S., Fahim M., (2011), Enhancing CT in Foreign Language Learners, *Procedia - Social and Behavioral Sciences* 29, 111 – 115.
- Somkiat T. (2013), Teach Thais to think, *East Asia Forum*, 17th September.
- Turouskaya A. and Turouskaya I. (2001), Teaching critical thinking in a Foreign Language, *Education et Sociétés Plurilingues*, n° 10-juin, 51 – 54.
- Willingham D. T. (2007), Critical thinking: Why is it so hard to teach? *American Educator*, 8–1.

Developing Reading Comprehension Skills for Grade 6 Students at Piboonbumpen Demonstration School using Multimedia

Rapin Chuchuen, Piboonbumpen Demonstration School, Thailand

Prayoon Imsawasd, Burapha University, Thailand

Panpetch Romsai, Burapha University, Thailand

Krisana Kimlengchui, Independent Researcher, Chonburi, Thailand

Abstract: *This research aims to develop reading comprehension skills for grade 6 students by using Multimedia. It has been conducted for the sixth-grade students at Burapha University: Piboonbumpen Demonstration School. The sample group is comprised of 34 sixth grade students in the academic year 2016 of Burapha University: Piboonbumpen Demonstration School, Chonburi. This sample was selected by applying the purposive sampling method. The tools used for collecting data are lesson plans, which include multimedia and an ability test for reading skills which consists of 30 questions. The data was analysed by using dependent t-test statistics. The result of the analysis shows that the efficiency of teaching with multimedia was 83.33/ 84.90, higher than the criteria standard of 80/80. The reading skills of the students are higher after the training using multimedia for teaching in the reading comprehension skills lesson at a statistical significance level of .05.*

Keywords: Reading Skills, the development of reading skills with multimedia

Introduction

Reading comprehension is very important in modern society. Reading is not used only for entertainment purposes but it is also used as a tool to support education and keeping up to date on various subjects in the news. People who read regularly can truly understand the aim of a subject and use that knowledge to benefit themselves and others. At present, reading problems can be a significant hindrance which should be addressed at the earliest opportunity. When students lack reading comprehension skills, this can affect their learning for many subjects. This research study discovered that the main causes of reading comprehension problems are as follows:

Cause 1 Vocabulary. When students exhibit difficulty in understanding and deriving a meaning from a piece of text, explicit instructions should be in place to provide a clearer understanding. Difficulty in understanding a piece of text can come from not knowing the meaning of words or concepts, not capturing enough factual information and not having pieces of text flowing in relation to each other in a sentence. In order to resolve reading comprehension problems, teachers should first consider focusing on expanding the students' vocabulary and developing their understanding. Phaisalvornpong (2000, p. 110) confirmed this with her research, since she mentioned that by using reading exercises, students are able to improve on their reading and their vocabulary. Teachers should start with letting the students read short stories with easy vocabulary and simple storylines. Then they should continue by gradually increasing the difficulty of the subject. When students discover new vocabulary, teachers should let students use dictionaries to search for the meaning of that word. This can be turned into a dictionary based competition so students try to quickly find the meaning of each word first to win prizes. In return, this activity gives students enthusiasm to learn new

vocabulary. When students know more vocabulary, they will be able to comprehend the essence of the story.

Cause 2: Lack of Concentration. The students who lack concentration should be introduced to a variety of topics in the lessons as a means of improving concentration. This agrees with research conducted by Bunyaritrungrate (2011, p. 10), 'Developing Reading Exercises for Students in Grade 3'. As mentioned in his research, the teacher must develop various reading topics, for example natural resources, environments, tales, traditions and cultures. Reading exercises should contain related illustrations in order to attract the attention of the reader. This can be achieved by using intuitive teaching techniques that make use of multimedia tools like animation and audio, such as computer games, video on Internet, etc. The reasons that students are less likely to learn and develop an understanding behind a subject or topic can be due to the difficulty of the reading exercise and lack of engaging activities. Hence, teachers should make use of different types of activities to stimulate the curiosity of students. Teachers may create tutorials on the computer (CAI) for the students to do at home. This changes the style of the homework from doing exercises on paper to interactive homework online. Teachers should give a variety of topics for students to read, then the teacher should analyse the main point of the story together with the students. Furthermore, teachers should let the students select their own stories to read. When students are interested in a subject and activities in a lesson, students should be capable of improving their reading skills even when the subject is difficult.

Cause 3: The Topic of an Article. The topic of an article can result in a student's lack of interest. This can occur when a topic or story is far above the student's reading capability or has a complicated storyline. The mind map technique is able to help recover from this problem as advised by research conducted by Suriyawong (2012, pp. 96-99). The researcher developed reading comprehension exercises using mind map techniques for grade 3 students. A mind map is a diagram used to visually organize information. A mind map is hierarchical and shows relationships among pieces of the complete structure. This helps the reader to understand the topic even if the topic is difficult. Students are also able to have fun while reading. Furthermore, using a mind map is good practice for students to use their creativity and to link student's ideas. The students will be able to draw conclusions about what they read and distil long stories into short simple stories for ease of communication.

Cause 4: Students dislike reading. Some students have a bad attitude towards reading or dislike reading altogether. This issue can be solved by allowing students to select their own type of reading material. This will make students more interested in the topic of their choice and then continue to enjoy reading. This is a very important technique in teaching since this will motivate the students to read. When students begin to take an interest in reading, this is a first sign of success as shown in a study conducted by Khuntee (2009, p. 78). Kinnear's research focused on the comparison of reading comprehension in elementary school (Wat Sribunruang School) between students who chose to read advertisement material and a group of students who were instructed to read advertisement material by their teachers. The result was that the students who chose to read the advertisement material were able to demonstrate a good level of understanding in comparison to the group of students who were instructed to read the advertisement material. The researcher conducted a study based on the national education test

(Ordinary National Education Test: O-NET) of students in grade six at the national level. They found that the characteristics of the test are measured in accordance to a The Basic Education Core Curriculum B.E.2551 (A.D. 2008). For the Thai language curriculum exam, many questions focus on Learning Standards and Indicators TH 1.1, which covers the subject of reading. The purpose of the test is to raise the awareness of the power of reading to improve the student's general knowledge, to develop their ability to make good judgments on a daily basis, and for students to continue to have a habit of reading. The test consists of examples of poems, stories, and news articles about events for the student to read. It measures whether they can comprehend information in the article.

Therefore, the researcher, as a teacher of the 'Thai language' subject, is aware of existing reading problems that students have. The various reading problems arise when there is a lack of good reading skills. Students with poor reading skill are uninterested in the reading material. Those students are not able to see the importance of reading, and have noticeable reading errors. They lack reading comprehension skills and those students have a lack of interest in an activity or a lesson that involves reading. Students who achieve below average grades for the subject 'Thai language' are a significant concern and this issue should be addressed at the earliest opportunity. A variety of teaching material can be used for learning and teaching. The teacher's main aim is to transfer their knowledge to the student, so the students can apply that knowledge in order to develop their skills and make decisions in a variety of situations. Multimedia based teaching material has different effectiveness levels depending on the media type. Therefore, teachers should consider the main purpose of that subject and prepare suitable multimedia based resources for that lesson. The most effective methods of teaching in lessons include the use of multimedia.

This research aims to improve the reading comprehension of primary school students in Grade 6 using multimedia based resources. Multimedia resources are used to help students develop their reading comprehension skills more quickly. Reading comprehension skills can be used to benefit students' daily live and improve their learning potential in the future.

Conceptual Framework

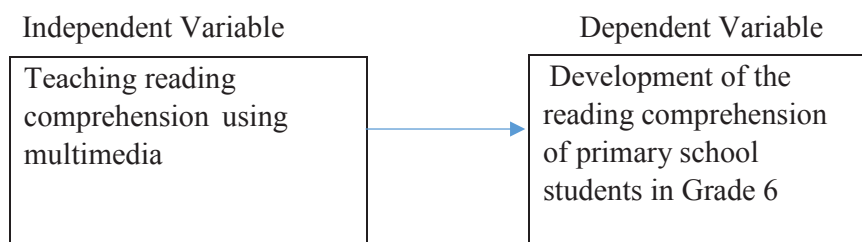


Figure 1 Conceptual Framework

Research Objectives

1. The efficiency of reading comprehension of grade 6 students at Piboonbumpen Demonstration School, Burapha University, using multimedia is in what level?
2. Will the reading comprehension ability of students taught using multimedia in grade 6 at Piboonbumpen Demonstration School Burapha University improved or not?

Research Questions

1. The efficiency of reading comprehension of grade 6 students at Piboonbumpen Demonstration School, Burapha University, using multimedia is in what level?
2. Will the reading comprehension ability of students taught using multimedia in grade 6 at Piboonbumpen Demonstration School Burapha University improved or not?

Research Hypotheses

1. Efficiency in teaching reading comprehension using multimedia of grade 6 students at Piboonbumpen Demonstration School, Burapha University, will have an efficiency of 80/80
2. Comparison of literacy rate of reading of the students using multimedia teaching resources of grade 6 students at Piboonbumpen Demonstration School Burapha University might be different than before and after.

Research scope

1. The population sample used includes a selection of 34 students from a total of 155 students in Piboonbumpen Demonstration School in Grade 6/5. A sample of 34 students was selected using a purposive sampling method, since the class selected is part of the international program where some of the students are international and have difficulty reading Thai language.

2. The research durations were the first semester and the second semester of academic year 2016 for a total of 11 hours.

3. The independent variable is the reading comprehension teaching technique for primary school Grade 6/5. The dependent variable is the achievement of the student's reading comprehension skill after learning with use of multimedia teaching resources.

In this research, the researcher was assigned a sample group of 34 students from Primary School Grade 6 at Piboonbumpen Demonstration School which was selected by using the purposive sampling method.

The research tools

1.1 Lesson plans for developing reading comprehension with using multimedia.

Teachers must use media that includes Internet websites, images, videos, activity games, iBook, and diagramming. The lesson plan consists of 5 lessons:

Lesson 1 Reading Articles Using Mind Mapping

Lesson 2 Reading Investigative Articles

Lesson 3 Reading and Watching Cartoon Movies

Lesson 4 Reading and Analysing Quotations from Music

Lesson 5 Reading and Analysing News

1.2 A reading comprehension skills test with 30 questions.

Methodology

Researchers conducted the research by teaching and using multimedia in reading comprehension lessons in the second semester of the academic year of 2016.

The researcher must collect the data in the following order:

1. The researcher used a pre-test of reading skills to test the 34 sample students. The test was a 30 minute test. The test results were recorded in order to be used in the analysis of statistical data.

2. The researcher always conducted learning activities using of multimedia in sequential order according to the lesson plans.

3. After completing all of the learning activities with the use of multimedia in the lesson plans a 30-minute comprehension practice test was given to examine the student's understanding.

4. Analysis of student test results before and after using the multimedia enhanced method of learning was done using statistical methods to test the hypothesis. The methods used were the mean (\bar{X}), standard deviation (S.D.), and the t-test to compare the progression of students before and after they received lessons using the new style of instruction.

Research Results

Table 1 shows the results of the effective value of multimedia as a supplement for developing Thai reading comprehension (E1) scores.

Lesson	Total scored	\bar{X}	SD	Percentage
Read Articles Using Mind Mapping	4	3.04	0.58	76.00
Read the investigations	4	3.14	3.82	78.00
Read the advertisements	4	3.82	0.47	95.00
Reading and Analysing Quotations from Music	4	3.39	0.47	84.75
Reading and Analysing News	4	3.69	0.42	92.25
The Effective Value of Multimedia (E1) 83.30				

The average of effective value of reading comprehension scores when using the multimedia is 83.30.

Table 2, shows the results of the effective value of multimedia for developing reading comprehension scores (E2)

Instruments	Full score	Total /Mean Score	Percentage
Achievement Test	30	866/25.47	84.90

From Table 2, it is clear that scores for students' reading comprehensions ability were significantly improved. The students' 84.90% indicates that teaching reading comprehension using multimedia is more effective than traditional methods.

From the results of the data in tables 1 and 2, it is apparent that effective value of multimedia for developing Thai reading skill (E1/E2) is 83.30 / 84.90 with prescribed value at 80/80 and the average score of the students' achievement test following the use of multimedia for developing reading skill was markedly improved.

Table 3 Comparison of Reading Ability of Students before and after learning with multimedia

Measurement of critical reading ability by multimedia	N	\bar{X}	SD	t	*p
Before teaching by multimedia	34	19.97	2.96	1.6923*	.000
After teaching by multimedia	34	25.47	5.10		

*p<.05

Table 3 shows that the ability of reading comprehension of grade 6 students after learning through multimedia at Piboonbumpen Demonstration School Burapha University is higher than before, and the post-test score is significantly higher than the pre-test score with a statistical significance of 0.05

Conclusion

The progress of reading comprehension skills by students at Grade 6 can be concluded as follows:

1. The results of the development of reading efficiency in terms of student reading comprehension skill after learning with multimedia were measured using reading comprehension tests. The result of the development was an efficiency of 83.33 / 84.90, which is higher than the standard of 80/80.
2. Reading comprehension skill of the students is higher after learning using multimedia with statistical significance of 0.05.

Discussion

1. The subject of teaching reading comprehension to students at primary school grade 6 has been developed using multimedia as a teaching tool, yielding an efficiency of 83.33/85. This shows the relevance of using multimedia in reading comprehension lessons, where the

teacher is responsible for creating multimedia correctly. The researcher studies both the teacher's perspective and the student's perspectives. The researcher was also responsible for collecting suggestions from feedback provided by specialists for teaching reading comprehension in classrooms, as well as the arrangement of content and multimedia used. The multimedia should be a story or topic that gains students' interest to improve the student's concentration. The reading comprehension with use of multimedia lessons contain 5 topics which are aim, content, activities plan, suitable activity and multimedia. The multimedia created by the researcher under the technology media categories are electronic books (iBook), websites, and videos. The researcher also has another form of media available by using games, pictures, and other activities that relate to the subject content and attract the student's attention. Teaching with media (multimedia are a combination of games, images, and video clips) using beautiful and colourful forms of content to encourage students to learn, understand and remember the subject for longer was done as suggested by Lersine (2011, p. 8). The journal article states that using good teaching multimedia tools containing different types of materials such as real objects or models, images, diagrams, instructional materials, audio, films, exercises and other materials should be used in combination to deliver the content. According to Promvong (2000, p. 118), the key to teaching with media is to use various forms of media in combination so each piece of content works in relation to and in support of the other. This concept helps students to learn the subject from different sources. The Basic Education Core Curriculum B.E. 2551 by The Ministry of Education (2007) stated that the use of multimedia in teaching improves and develops the learning process. This provides the student access to the knowledge with efficiency by using a variety of materials using document technology (website / CD / television). The use of media should match the skill level of students in order to provide a more effective and engaging lesson. Singha (2007) researched and developed multimedia to be used in Thai language grade 3 lessons for topics about leading consonants. The researcher used Microsoft PowerPoint, word cards and practised exercises yielding an efficiency performance based result of 83.17/82.87, which is higher than the criteria of (80/80). Benjid (2006) researched the development of multimedia used in Thai language for grade 6 students under the topic reading cluster. The results showed that the efficiency of student results on the test after using multimedia was 90.30/80.65, which again is higher than the standard criteria of (80/80).

2. The result of reading comprehension skills of students in grade 6 were higher after conducting the study which has a statistical significance of 0.05. This agrees with the research hypothesis, as the researcher created mixed media using student feedback and opinions. Media is very suitable in lessons which generally contain images, slides, games, websites, computer games, etc. These help enhance the atmosphere of learning and motivate the student to learn more about the lessons. In addition, The National Education Act B.E. stated that learning activities like self-learning or self-teaching give a direct experience to the individual. Learning activities also help to develop student's intellect and thinking processes when the students interact with others to find a solution. Mlithong (2000, p. 93) suggests that using more than one type of media will make the student gain more knowledge in comparison to the case when only a single type of media used. Hence, one type of media may not achieve all of the objectives. Teachers should use many different types of media in a coherent and mutually supportive way to enhance the learning process. The lesson plans and lessons that

researchers create must be suitable for multimedia. This is consistent with research by Dyer (1985, pp. 2641-A) who studied the development of lessons and lesson plans which aim to improve the reading skills of students in grade 4. The result shows that the studies into the learning plan and ready-to-read lessons for Thai language fourth grade elementary school students had an efficiency of 81.44/87.80, which exceeded the 80/80 pre-set criteria. This also agrees with the work of who studied the use of reading comprehension for reading and comprehension. The results show that there is no difference between the two groups when one of them studied with the linkage diagram before reading. However, significant differences were found in the study of groups with and without using a summary diagram. It also found that the arithmetic means for transferring the learning of a group which learned by using a pre-reading linkage scheme, which emphasizes the importance of the subject, is higher than a group of the learners using the linkage diagram, without emphasizing the subject and the groups that do not use the linking scheme with gave statistical significance of 0.01. Chantra (2000, p. 78) created a Thai teaching package for training reading comprehension for elementary school students in grade 5 in the Office of Private Education, Songkhla Province. After learning reading comprehension in Thai language with this method the students' scores were higher than the pre-test scores with a statistical significance of 0.01, which is above the standard. The teaching and learning process of reading comprehension with use of multimedia was tested by the researcher with grade 6 students with positive results, since the students improved in their reading comprehension skills.

Recommendations

1. Use of multimedia in Thai language courses to improve reading comprehension should be used early in primary schools since young students need to build fundamental reading comprehension skills.
2. Multimedia based technology like computers, projectors, audio and video equipment used should be of a suitable standard to aid teaching for the number of students in the classroom.
3. Technology used in the classroom like computers or smartphones should only be used to aid learning for students. Hence, a sense of control should be implemented to meet objectives and not interfere with teaching activities.

“This study was supported by a grant from Piboonbumpen Demonstration School, Burapha University.”

References

- Benjid, A. (2006). *The development of multimedia materials for the group. Learn Thai Language Prathomsuksa 6 Students under the topic Reading Cluster*. Master's thesis Curriculum and Instruction, Graduate School, Silpakorn University.
- Bunyaritrungrate, S. (2011). *The development of reading comprehension exercises: For students of Mathayomsuksa 3*. Master's thesis Curriculum and Supervision, Graduate School, Silpakorn University.
- Chantra, K. (2000). *The Development of Thai Language Teaching Curriculum for Reading Comprehension Skills of Prathom Suksa Five Students in the Office of the Private*

- Education Commission, Songkhla District, Songkhla. Master's thesis Curriculum and Sturture, Graduate School, Tuksin University.*
- Dyer, R. R. (1985). Story Maps Improve Comprehension. *The Reading Teacher*, 38(4), 400-404.
- Khuntee, K. (2009). *A Comparison of Reading Comprehension Levels Between Prathom Sueksa 3 Students Who Selected Advertisements Themselves and Students Who Were Given Advertisements by Teachers at Wat Si Boonrueang School*. Master's thesis Curriculum and Sturture, Graduate School, Ramkhamhaeng University.
- Lersine, T. (2011). *The effect of multimedia activities on learning outcomes SPE 3601 Course of Chiang Mai Rajabhat University Students*. Chang Mai: Rajabhat Chang Mai University.
- Mlithong, K. (2000). *Technology and Innovation*. Bangkok: Chulalongkorn University.
- Phaisalvoronpong, S. (2000). *Creating a Thai Reading Comprehension Kit for Prathom Suksa 4 Students*. Master's thesis Curriculum and Instruction, Graduate School, Burapha University.
- Promvong, C. (2000). *Technology and teaching communication*. Nonthaburi: Sukhothai Thammathirat Open University.
- Singha, N. (2007). *Development Multimedia to be used Thai Language in Prathomsuksa 3*. Master 's thesis, Greaduate School, Mahasarakram University.
- Suriyawong, S. (2012). *Develop a practice of reading comprehension skills using a conceptual map for Prathom Suksa 3*. Master's thesis Curriculum and Sturture, Greaduate School, Burapha University.
- The Ministry of Education. (2007). *The Basic Education Core Curriculum B.E. 2551 (A.D. 2008)*. Bangkok: Kurusapa Ladprao Publishing.

Supplier Evaluation and Selection for IT Service Group using the Analytic Hierarchy Process

Kunyaluk Nuchprayoon, King Mongkut's University of Technology North Bangkok, Thailand
Chayathach Phuaksaman, King Mongkut's University of Technology North Bangkok, Thailand

Abstract: *Good suppliers and suppliers can create a competitive advantage for the IT business, therefore, the issue of evaluation and selection of suppliers from whom you purchase goods, is vitally important. Analytic Hierarchy Process (AHP) is used to evaluate and select the best IT suppliers because all IT products are essential to the overall system performance. In this article, the hierarchical chart was compiled after the calculation of the diagnostic value from the questionnaire with Microsoft Excel. All five were A, B, C, D and E. The results showed that the weight of all the criteria considered D has the highest score of 0.2862, the second is B, 0.2445, the third is A, 0.1686, and the fourth is C, 0.1598, the last is E, the value is 0.1408, respectively. It is considered to be the best supplier and distributor of IT equipment for this case study. From the eight criteria used for evaluation and selection, it can be classified as the most important, the overall quality criterion, cost of IT equipment procurement, delivery, the technical performance, reliability, flexibility, communication, and the least corporate social responsibility. This is the main product of the case study for the four remaining criteria and consisting of two sub-criteria for flexibility consist of ability to procure urgent goods, capability to change order quantity. And the sub-criteria of corporate social responsibility consist of non-hazardous materials and pollution control. This study focuses on Most Quality the results of the study should help suppliers to understand how to develop a product that meets the criteria or requirements of a case study. They can also apply and develop products to work with other products of case studies. It also creates and develops relationships with upstream and downstream areas.*

Keywords: Evaluation and Selection Supplier, AHP

Introduction

Today, information technology is recognized as playing an indispensable role in business operations. It is an essential tool for enhancing organizational performance. In order to be flexible in the management of the system, quickly and to save time, IT is essential. With the evolution of data communications networks through computer systems, work becomes both simple and efficient. These technologies include the internet, video conferencing, remote access. Networking These technologies are also important factors in the development and change of organizations. It also plays a key role in future business competitiveness, in order to create competitive capability by developing purchasing strategies. Procurement is getting more attention because it is not just about cost. It also seeks to build a business alliance that takes advantage of all this technology to create a win-win organization. Throughout the supply chain, this activity is also considered as a key link in the chain. The supply chain affects the overall success of the organization.

However, purchasing must be dedicated in order to evaluate and select suppliers with both qualitative and quantitative criteria. In order to achieve good results for all parties and to look at the whole of the organization, it is necessary to find a decision-making process that

can bring both concrete and abstract factors into consideration. And that is an important aspect of the Analytical Hierarchy Process (AHP) because it has been recognized for solving the problem. It can be applied to multiple decision making. In the context of Thailand, several AHP applications have been applied to decision making. As a result of the assessment of the suppliers in the automotive and electronic industries (Surakrik, 2008), the selection of the suppliers of machine parts to replace the imported ones (Duangkam, 2007). This is a process that imitates the human thinking process (Orapin & Tananya, 2007). It is suitable for use as a tool of decision making.

AHP has been recognized as a process that simplifies the problem and can be expressed in a concrete way. The AHP hierarchy is still one of several decision-making processes, such as assessment and also, we discovered that AHP is likely to be used for continuous assessment and selection of suppliers (Tahr. iri et al., 2008) to find the best decision-making options (Saaty, 1980), because they can be easily understood and manipulated by mimicking human thought processes. In this paper, we propose a hierarchical analysis process for assessing and selecting vendors for IT service providers.

Concept and theory

Analytic Hierarchy Process (AHP) developed by Saaty (1990). AHP transforms quantifiable quantitative uncertainties into quantitative ones by setting standards in the consideration section to provide a rational answer to the purpose, and creating the structure of the problem. Consider a hierarchical chart (Hierarchy), respectively, of the criteria layer from primary to secondary, down to the actual choice. Alternatively, the factors in each level are compared by each factor according to the mathematical process. Let's consider the components of the problem as a whole and compare the problem for every reason. The results of the decision were concise. (Witoon Tanasiri Kongol, 1999).

The AHP method consists of the following important steps (Dyer & Forman, 1992).

1. Problem isolation and hierarchy generation AHP

The AHP method begins with the separation of complex problems into elements of the hierarchy. The highest level (level 1) consists of a criterion about overall purpose submissions that influence decision making are referred to as sub-criteria. The lowest level of the hierarchy is called the choice of decision (see Figure 1). The significance level of the criterion does not depend on the subsets below that threshold (Saaty, 1990).

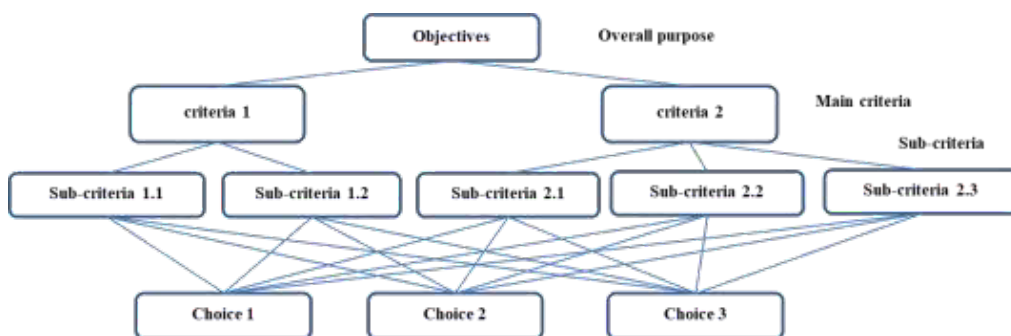


Figure 1: Structure of the process hierarchy AHP

2. Comparative judgment to calculate priorities

Comparative Judgment for Prioritization Step 2 is divided into 3 sub-steps: Pairwise Comparisons, Weight Calculation, and Consistency Check.

2.1 Pairwise Comparisons

When a hierarchy is created, the next step is to compare the pair to find the comparative significance of Subdivisions In each level, the scale used for comparison is the AHP 1-9 baseline (see Table 1). This pairwise comparison or pairing will start from the bottom. (Alternative level) and ends at the second level. (Forman & Selly, 2001) after all subsections have been met. The pairwise comparison is given by scale 1-9, and then the matrix is created.

Table 1: AHP Baseline Scale 1-9 (Saaty, 1996)

Verbal Judgments	criterion
Equal Importance	1
Moderate Importance	3
Strong Importance	5
Very Strongly Importance	7
Extreme Importance	9
Median	2,4,6,8

2.2 Weight calculation

After creating a pairwise comparison matrix the next step is to use a mathematical process to calculate the characteristic vector (Eigenvector) and the Largest Eigenvalue of each matrix vector. The specificity will give priority (weight value). The characteristic value can be used as a gauge to determine the consistency of the calculation method. And specific values can be obtained from Saaty (1990).

2.2 Check the consistency of the discretion.

The AHP method can measure the degree of consistency of each set of judgments. Calculate the Consistency Ratio (C.R.) in each matrix. The consistency ratio, if zero, will mean that the set of discretion is perfectly consistent. If the consistency ratio is one (or 100%) it means that the discrepancy is equivalent to the discretion of the random. If the consistency ratio is very high (Critical value is 0.1) the discretion is unreliable. The acceptable range of C.R. depends on the size of the matrix. For example, if a matrix size of 3x3 C.R. should not exceed 0.05 if the 4x4 C.R. matrix should not exceed 0.08 C.R. should not exceed 0.1 (Saaty, 1994). If the valuer's judgment in C.R. exceeds the required level appraisers should review their judgment (Saaty, 1994).

3. Synthesis to obtain significance

By considering all the priorities from the comparison, what choices should be selected for the analysis process of AHP. As shown in equation (1).

3.1 Matrix analysis

$$\begin{bmatrix} 1 & a_{12} & \cdots & a_{1n} \\ 1/a_{12} & 1 & \cdots & a_n \\ \vdots & \vdots & \ddots & \vdots \\ 1/a_{1n} & 1/a_{2n} & \cdots & 1 \end{bmatrix} \quad (1)$$

3.2 Geometric Mean Method

Geometric meanings are derived by multiplying the mean of the numbers. Then take the product to root the number. As shown in equation (2).

$$V_i = \left(\prod_{j=1}^n a_{ij} \right)^{1/n} \quad (2)$$

When a_i = a numeric value in a matrix table

V_i = geometric mean

n = number of digits to find the mean

3.3 Weight value analysis of alternative formats

The analysis of the weight of each alternative format is based on the synthesis of alternative forms of data, as in Equation (3).

$$W_i = \frac{V_i}{\sum_{i=1}^n V_i} \quad (3)$$

When W_i = weight of each criterion

V_i = geometric mean

n = number of digits to find the mean

3.4 Conformity Analysis

How to calculate the consistency of the reason for rating by using a metric comparison, all of the criteria are determined by taking the sum of the diagnostic values for each rule in a row. Each row is multiplied by the sum of the average values in each row and then the resulting multiples. The result is equal to the total number of criteria being compared. This sum is called the maximum eigenvalues ($\lambda \max$)

$$\lambda \max = \sum_{i=1}^n \left[\sum_{j=1}^n a_{ij} W_i \right] \quad (4)$$

- If the matrix has a 100%

$\lambda \max$ = the number of rules to be compared (n)

- If the matrix is not consistent.

$\lambda \max >$ the number of criteria being compared

Consistency Index (CI)

$$CI = \frac{(\lambda \max - n)}{(n-1)} \quad (5)$$

n = number of criteria

Consistency Ratio (CR)

$$CR = \frac{CI}{RI} \quad (6)$$

CR not exceeding 10%

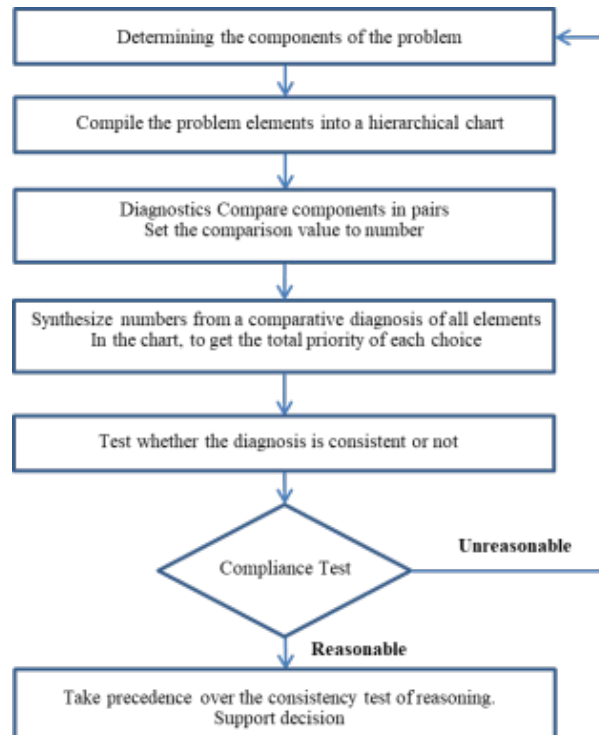
Random Index (RI) The sample was sampled from a 64,000 matrix. Saaty (1980) Table 2.

Table 2. Consistency index (Saaty, 1980)

N	1	2	3	4	5	6	7	8	9	10
RI	0	0	0.58	0.9	1.12	1.24	1.32	1.41	1.45	1.49

Methodologies

The researcher reviewed the literature and related research. The research process is as shown in Figure 2, with the following details.

**Figure 2:** Process step chart AHP (Tonsiri Kongkul, 1999)

1) Analyze and identify problems

Know the basic information and requirements of the case study from the initial coordination. Analyze problems, identify problems and determine solutions. Then offer a case study.

2) Review related papers and research.

It is necessary to browse information involving evaluating and selecting suppliers for the manufacturing industry, the general industry and the IT industry as well as academic articles of research and textbooks related to the implementation of hierarchical analysis. Select criteria for evaluation and selection of suppliers, as well as the evolution of relevant decisions from sources such as libraries, databases, research, etc.

3) Identify criteria for selection and selection of suppliers.

After reviewing the research include all documents related to evaluation and selection of suppliers. Summarize the criteria as a draft for a case study that has been consulted by 5 highly qualified IT professionals who represent the education sector and IT practitioners who provide advice about the appropriate criteria for creating hierarchical charts and query design.

4) Create hierarchical charts

For hierarchical charts for analysis and decision making, this case study has 4 layers (Figure 3).

Layer 1: Goal is to evaluate and select the best fabric supplier for a case study.

Layer 2: There are 8 main criteria, including Overall quality, Delivery, Cost of IT Equipment procurement, Technical performance, Reliability, Flexibility, Communications and Corporate Social Responsibility.

Layer 3: There are 4 Sub-Criteria, including the capability to change order quantity, ability to procure urgent goods, non-hazardous materials and pollution control

Layer 4: Alternative to make decision choice, there are 5 alternatives: A, B, C, D and E.

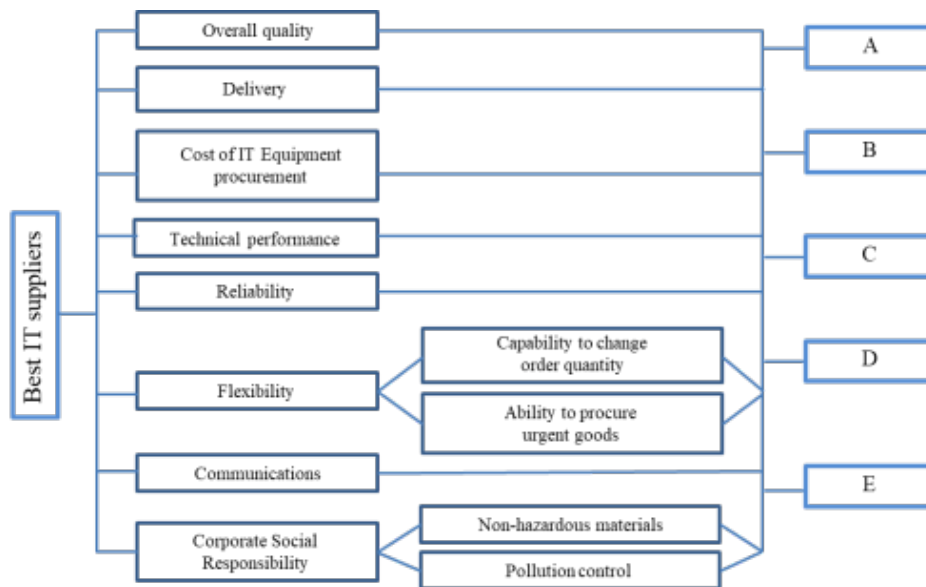


Figure 3. Hierarchical charts for evaluating and selecting suppliers in the IT service business.

5) Prepare a questionnaire

Design of questionnaires and interviews for expert advice in a case study of 4 persons. The questionnaire was used to compare the criteria, sub-criteria and options. There are 130 pairs of comparisons. The AHP Measurement Scale can be divided into 9 levels (Saaty, 1980).

6) Creating Matrix Tables for Matching

Each level of expert judgment in the company. The Pair-wise Comparison (Pair-wise Comparison) from the top to the bottom and the comparison were calculated. The weight of the top layer down to the top until the total score of the choice and use Microsoft Excel as a tool to calculate the results in Table 3.

Table 3: Matrix Criteria Comparison

Main criteria	Overall quality	Delivery	Cost of IT equipment procurement	Technical performance	Reliability	Flexibility	Communications	Corporate Social Responsibility
Overall quality	1.0000	1.4155	1.6540	1.9412	1.6951	2.8823	1.8228	3.1512
Delivery	0.7654	1.0000	1.5251	1.6551	1.5598	1.6551	1.5520	1.4155
Cost of IT equipment procurement	0.6442	0.6228	1.0000	1.6321	1.2151	1.1642	1.5640	1.1212
Technical performance	0.5543	0.6444	0.6784	1.0000	0.8536	1.2565	1.6551	1.1782
Reliability	0.6226	0.4561	1.1451	1.1227	1.0000	0.7888	1.4695	0.8074
Flexibility	0.3551	0.6361	0.7509	0.5524	1.3451	1.0000	0.7551	0.3301
Communications	0.3227	0.5119	0.6228	0.6567	0.6235	1.2392	1.0000	0.8439
Corporate Social Responsibility	0.5195	0.6585	0.9144	0.8709	1.3292	3.4098	1.0892	1.0000
Total	4.7838	5.9453	8.2907	9.4311	9.6214	13.3959	10.9077	9.8475

7) Prioritization

After comparing the criteria one by one the criteria have been set. All criteria are met. Then compare the choices until you can establish the weighting. Then sort the weighting from the most important to the least important value.

8) Test the reasonableness of the data

The results obtained from the consideration of the importance score obtained by pair comparison, according to experts in the company. There is a need to rate it. Sometimes there is an error in the comment. Each person has different opinions according to their knowledge and experience. And that makes the results of the comparison unreasonable. Consistency Index (C.I.)

The calculation of C.I. begins with the sum of the diagnostic values of each vertical rule of each row multiplied by the sum of the mean in the horizontal row of each row. Then multiply the result in each row, which results in the total number of criteria being compared. And this sum is the maximum eigenvalue (λ_{\max}) as in equation 4.

If the matrix is consistent, it is 100% perfect. The value of λ_{\max} is equal to the number of comparable criteria. (N) But if the matrix is inconsistent then Determine CI as Equation 5.

After obtaining the C.I., the Consistency Ratio (or C.R.) is calculated as follows. When R.I. is a random index, the C.R. value must not exceed 0.1. And the values in the table are derived from the sampling of the table from the 64,000 matrix (Table 2).

Results

After collecting data and analyzing the results with a hierarchical analysis process. The 8 major criteria are listed below. (Figure 4) The overall quality, Delivery, Cost of IT Equipment procurement, Technical performance, Reliability, Flexibility, Communications and Corporate Social Responsibility.

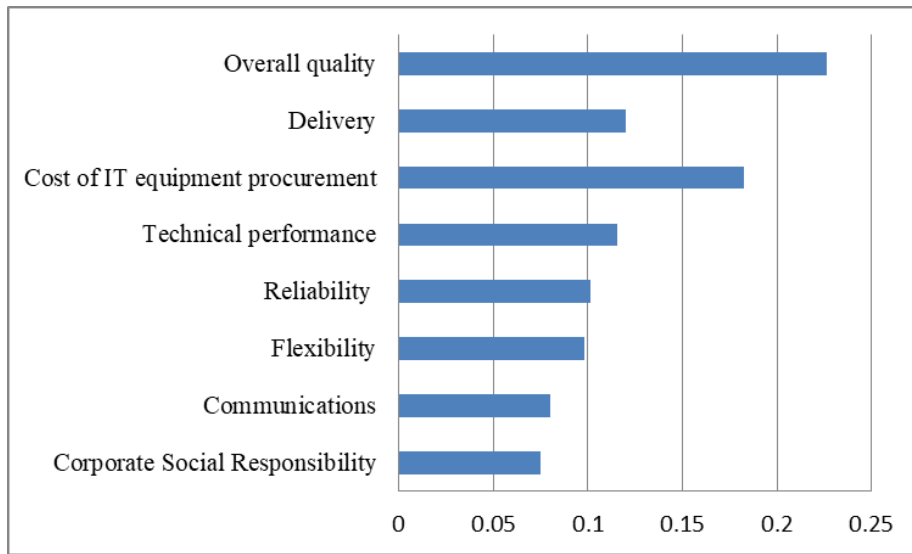


Figure 4. Summarize the weight of the 8 main criteria to evaluate and select suppliers for IT service providers.

When the comparability test was performed, the CR value of 0.0256, which is less than 0.10, can be compared to the corresponding criteria. Further comparisons can be made in the next order for criteria directly related to the distribution of weight. From the main criteria to the direct choice of this case study, there are 10 criteria, called Covering Criteria (Saaty, 2008). The main criteria are the quality criteria, sixth overall procurement costs and delivery fabric 4 threshold is sub-criteria of flexibility, including the ability to change the order. And the sub-criteria of social responsibility consist of non-hazardous materials and pollution control (Figure 5).

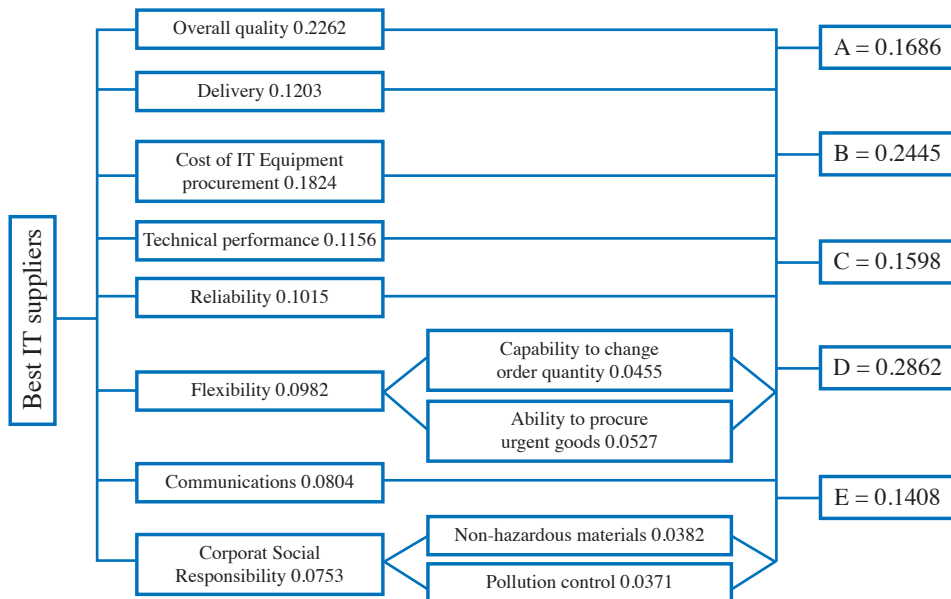


Figure 5: The weight of each supplier under all criteria.

In Figure 5, For Main criteria, the most important main criteria is overall quality criterion (Weight = 0.2662), cost of IT equipment procurement (Weight = 0.1824), delivery (Weight = 0.1203), the technical performance (Weight = 0.1156), reliability (Weight = 0.1015), flexibility (Weight = 0.0982), communication (Weight = 0.0804), and the least corporate social responsibility (Weight = 0.0753)

For Sub-Criteria, there are 2 Sub Criteria of Flexibility are ability to procure urgent goods (Weight = 0.0527), capability to change order quantity (Weight = 0.0455), and 2 Sub Criteria of corporate social responsibility are non-hazardous materials (Weight = 0.0382), pollution control (Weight = 0.0371)

The results show that the weight of all the criteria considered D has the highest score of 0.2862, the second is B, 0.2445, the third is A, 0.1686, and the fourth is C, 0.1598, the last is E, the value is 0.1408.

Conclusions and Discussions

The issues of supplier selection have attracted the interest of researchers in this area. Procurement is one of the key issues for competitive advantage, therefore, the evaluation and selection of suppliers can solve many problems Multi-Criteria Decision-Making Problems (MCDM). Analytic Hierarchy Process (AHP) was used to evaluate and select suppliers for the best IT service providers. IT equipment is key equipment for the installation of information technology. After reviewing the literature and specifying the criteria, a professional questionnaire was developed in the case study and the hierarchical chart was compiled after the calculation of the diagnostic value from the questionnaire with Microsoft Excel. All five were A, B, C, D and E. The results showed that D scored the highest. It is considered to be the best supplier and distributor of IT equipment for this case study. From the eight criteria used for evaluation and selection, it can be classified as the most important, the overall quality criterion, cost of IT equipment procurement, delivery, the technical performance, reliability, flexibility, communication, and the least corporate social responsibility. All the main criteria have similar weight in addition to the scoring of the quality criteria. It is the heaviest criterion. Reflecting that the case study needs to build and maintain customer confidence in the information system, this is the main product of the case study for the four remaining criteria and consisting of two sub-criteria for flexibility consist of ability to procure urgent goods, capability to change order quantity. And the sub-criteria of corporate social responsibility consist of non-hazardous materials and pollution control. It is congruent with Pramolbal, Prasertsiriphan, and Puongklin (2015) who stated that company has little understanding of CSR principles. They just focused on donation or funding only.

This research finding is supported by Tahriri, Osman, Ali, Yusuff, and Esfandiary (2008) who stated that AHP process makes it possible to introduce the optimum order quantities among the selected suppliers. In their work, an AHP-based supplier selection model is formulated and then applied to a real case study for a steel manufacturing company in Malaysia. The use of the proposed model indicated that it can be applied to improve and assist decision making to resolve the supplier selection problem in choosing the optimal supplier combination. The work represents the systematic identification of the important criteria for supplier selection process. In addition, the results exhibit the application of development of a multi-criteria decision model for evaluation and selection of suppliers with proposed AHP model, which by scoring the performance of suppliers is able to reduce the time taken to select a vendor.

As well as, Alsuwehri (2011) pointed out that the AHP model are able to assist decision-makers to examine the strengths and weaknesses of supplier selection by comparing them with appropriate criteria, sub-criteria and sub sub-criteria. Felice, Deldoost, Faizollahi, and Petrillo (2015) summarized that the performance of the supplier is a crucial factor for the

success or failure of any company. Rational and effective decision making in terms of the supplier selection process can help the organization to optimize cost and quality functions. Successful selection can provide competitive advantages in the market including high quality, customer responsiveness and low costs. They conducted the study in Sweden and Iran. The paper shows that AHP can be used as a decision-making tool when it comes to making strategic decisions, e.g., selecting a supplier with which to establish a long term relationship or from which to procure critical material for the company.

Furthermore, Ramlan and Qiang (2014) proposed that an AHP-based supplier selection model applied to improve and assist decision making to resolve the supplier selection problem in choosing the optimal supplier combination.

In summary, this case study can provide a guideline information to help and support suppliers understand how to improve themselves on various aspects to meet its supplier selection criteria based on AHP. It can applies to the selection of equipment and products, and also used to build and develop relationships with upstream businesses.

References

- Alsuehri, Y., N., (2011). *Supplier evaluation and selection by using the analytic hierarchy process approach* (master's thesis), The University of Kansas.
- Felice, F., D., Deldoost, M., H., Faizollahi, M., & Petrillo, A. (2015). Performance measurement model for the supplier selection based on AHP, *International Journal of Engineering Business Management* 7(17), 1-13.
- Jiravatakul, O., & Vasasri, T., (2007). *Application of AHP in Transportation Operator Performance Evaluation*". Annual Conference on Supply Chain Management and Logistics, King Mongkut's University of Technology Thonburi.
- Kongkul, V., T., (1999). *AHP The most popular decision process in the world*. Bangkok: Graphic & Printing.
- Koprulu, A , & Albayrakoglu, M.M. "Supply Chain Management in the Textile Industry: A Supplier Selection Model with the Analytical Hierarchy Process". Retrieved from <http://www.isahp.org/2007Proceedings/Index.htm>
- Krischanchai, D., (2006), *Senior Director, Supply Chain and Logistics: Theory - Research - Case Studies*. Bangkok, pp. 109-112, ITL Trade Media.
- Nadtharadol, S., (2008). *Application of hierarchical process to analyze ambiguity in selecting suppliers of automotive and electronics industries*, Thesis, Chiang Mai University, Chiang Mai.
- Nannan, D., (2007). *Evaluation of machine component deliverers by hierarchical analysis*". M.Sc., Burapha University, Chonburi.
- Paksoy, T., & Gules H.K. (2006). Analytic Hierarchy Process for Supplier Selection Problem in Supply Chain Management: Case Study of a Textile Manufacturer Firm. *Journal of Engineering and Natural Sciences*. (4), pp. 100-109.
- Pramolbal, J., Prasertsiriphan, S., & Puongklin, E. (2015). Corporate Social Responsibility within the Thai with ThaiBev Football Community. *HRD Journal*, 6(1), 95-105.
- Percin, S. (2006). *An Application of the Integrated AHP-PGP Model in Supplier Selection*, Measuring Business Excellence, (10), pp. 34 – 49.
- Ramlan, R., & Qiang, L., W., (2014). *An analytic Hierarchy process approach for supplier selection: A case study*, *International Conference on Global Optimization and Its Application (ICoGOIA 2014)*, Gallery Prawirotaman Hotel, Yogyakarta, Indonesia.
- Saaty, T., L. (1980), *The Analytic Hierarchy Process: Planning Priority Setting*, Resource Allocation (1st Ed.), pp. 22-25, NY: McGraw-Hill.
- Saaty, T., L. *Multicriteria decision making: The analytic hierarchy process*, Pittsburgh: RWS

- Saaty, T., L. (1994) *How to make a decision: The Analytic Hierarchy Process Interfaces*, 24(6), pp.18-43.
- Saaty, T.L. (1996). *Decision Making with Dependence and Feedback: The Analytic Network Process*, Pittsburgh: RWS Publications.
- Saaty, T.L. (2008) Decision Making with the Analytic Hierarchy Process, *International Journal Service Sciences*.1(1), p.88.
- Tahriri, F., Osman, M., R., Ali, A., & Yusuff, R., M. (2008). A Review of Supplier Selection Methods in Manufacturing Industries, *Suranaree Journal Science Technology*. 15(3), pp.201-208.
- Tahriri, F., Osman, M., R., Ali, A., Yusuff, R., M., Esfandiary, A. (2008). AHP approach for supplier evaluation and selection in a steel manufacturing company, *Journal of Industrial Engineering and Management*, 01(02), 54-76.
- Teng, S., G., & Jaramillo, H. (2005) A Model for Evaluation and Selection of Suppliers in Global Textile and Apparel Supply Chains, *International Journal of Physical Distribution & Logistics Management*. 35(7), pp.503 – 523.

The Development of an Augmented Reality Media Using Inquiry-Based Learning on the Topic of the Force and Motion Object

Noppadol Prammanee, Rajamangala University of Technology Thanyaburi, Thailand
Tiamyod Pasawano, Rajamangala University of Technology Thanyaburi, Thailand

Abstract: *The purposes of this research were to (1) create and assess the quality of augmented reality (AR) media using Inquiry-Based Learning (IBL) processes on the topic of “the force and motion object” of 9th grade students, (2) compare the learning achievement between pre and post learning from AR media using IBL processes, (3) compare learning achievement between the experimental group and control group, and (4) examine the satisfaction of students toward the AR media using IBL processes with the use of a posttest on the topic of “the force and motion object” of 9th grade students. The samples were consisted a total of two classes of 52 students in the first semester of the academic year 2016, Udomvittaya School, Thanyaburi district, Pathum Thani Province, Thailand. A class of 28 students was designated as the experimental group learning with AR media, another group was designated as the control group learning with traditional teaching method. The samples were selected by simple random sampling. The research findings were as follows: (1) AR media quality was high with the Index of Item-Objective Congruence (IOC) between .60 and 1.00, which was based on the hypothesis (2) the posttest score of learning achievement with AR media using IBL processes was significantly higher than the pretest score at the level of .05 (3) the posttest score of learning achievement of the experimental group was higher than the control group with the statistically significant difference at the level of 0.5 (4) the satisfaction of students learning from AR media using IBL processes was found at the high level. The results suggested that AR media using IBL processes on the topic of “the force and motion object” of 9th grade students could be used for instruction and learning.*

Keywords: augmented reality; inquiry-based learning processes; force and motion object; instructional media; instructional design

Introduction

Science subject is vital for every society because the integration between science and other fields can produce technologies, appliances, and other products. According to the Thai Bureau of Academic Affairs and Educational Standards (BAAES, 2008, p.1), science could assist humans to “develop thinking methods such as critical thinking, creativity thinking, analytical thinking, criticizing skills, researching for the knowledge, and be able to solve problems in a systematic way”. The Thai 2008 core curriculum for basic education science learning substance group aimed to teach science with an emphasis on linking knowledge with the learning processes. Learners should develop important skills in researching and building a body of knowledge by using IBL processes and problem solving strategies. Moreover, teaching and learning processes should require learners to participate in learning activities and processes (BAAS, 2008).

Teaching, using IBL activities emphasizes learner-centeredness which enables students to seek knowledge and practice problem solving by themselves and in group as they become skillful in science subjects. The processes of inquiry steps were recommended by the Inquiry Page (2010) which consists of five steps: (1) Ask, (2) Investigate, (3) Create, (4) Discuss, and (5) Reflect. Moreover, the Institute for the Promotion of Teaching Science and

Technology (IPTST) (IPTST, 2003, pp. 219-220) introduced five steps of inquiry processes: 1) Engagement, 2) Exploration, 3) Explanation, 4) Elaboration, and 5) Evaluation.

The IBL activities are the continuous processes and assists learners to learn more because they bring different theories and principles into practice.

AR is a technology that combines the virtual world and real world together for people who have no chance of actually seeing the real situation. The combination of real and virtual objects remedies limitations of virtualization technology. Azuma (1997) divided the definition of AR into three features including: (1) a combination of real and virtual, (2) real time interaction, and (3) 3D technology. Currently, AR plays an important role in the daily human life, such as graphics, 3D shapes, and computer webcams. Smartphones and tablets are in common use and can be used for real time teaching and learning. Chiang, Yang, and Hwang (2014) found that AR can help learners pay more attention to their studies because it allows learners real time practice. Thananu Wong (2013) stated that using AR technology both teachers and students enjoy learning because it is innovative and more interesting than traditional media instruction for Thai students.

The researchers have observed that some students only pay attention to the lecture at the beginning of the course with the PowerPoint presentations and they later get bored. This observation is consistent with the research of Suratrungchai, et al. (2005) which investigated the teaching circumstance and learning management, problems of teaching and learning management, and what was needed to improve about teaching and learning strategies. This study found that students lack intention, patience, and discipline in learning. While most faculty members used lecture-based teaching style, so they lacked varied teaching techniques and activities. Moreover, the evaluation focused more on memorizing rather than applying into practice.

To take advantage of AR technology, the researchers systematically designed a course using ADDIE Model. The model focused on the creation and development of teaching materials that encouraged students' participation in teaching and learning processes. The researchers carefully designed more efficient and effective learning processes. Furthermore, the IBL processes are applicable in many fields such as Science, Social Sciences, History, and Culture. Thus, in this study, the researchers applied an innovation with AR in educational technology field to develop and improve instruction and learning.

Purposes of the Study

1. To create and assess the quality of AR media by using IBL processes on the topic of "the force and motion object" with 9th grade students.
2. To compare pretest and posttest achievement scores of 9th grade students who learned with AR media by using IBL processes on the topic of "the force and motion object".
3. To compare the achievement of the experimental group who learned with AR media by using IBL processes and the control group who learned with traditional teaching style on the topic of "the force and motion object".
4. To study the satisfaction of 9th grade students toward AR media by using IBL processes on the topic of "the force and motion object".

Research Hypotheses

1. The AR media using IBL processes on the topic of "the force and motion object" with 9th grade students has high quality.
2. The achievement measured by the posttest scores of 9th grade students who learned with AR media by using IBL processes under the topic of "the force and

- motion object” would be significantly higher than the pretest score at the level of .05.
3. The achievement measured by the posttest scores of 9th grade students who learned with AR media by using IBL processes on the topic of “the force and motion object” in the experimental group would be higher than the posttest scores of the students in the control group with a statistically significant difference at the level of .05.
 4. The satisfaction of 9th grade students toward AR media by using IBL processes on the topic of “the force and motion object” might be high level.

Literature Review

Inquiry-based learning (IBL)

Kuklthau, Maniotes, and Caspari (2007, p. 2) stated that the IBL “...must be a process or procedure that was more than the search for answers, or answers to questions only, but would focus more on the processes of investigation, research, survey, tracing, and tracking, which was able to stimulate community involvement in the learning process because the learning caused by interaction in society.”

The National Research Council (NRC) (1996) indicated that IBL is a set of relationships through which scientists and students ask questions about natural phenomena and investigate these various phenomena. This action would profoundly help students gain knowledge and develop understanding of concepts, rules and patterns, and various theories (p. 214).

The Ministry of Education Thailand (MOET) defined the scientific inquiry as “to search for knowledge in the scientific way using the scientific processes or other such as investigation, observation, measurement, classification, experiment, simulation model building, and searching for data” (BAAES, 2008, p. 105).

The Inquiry Page (2010) offered five steps of IBL as follows:

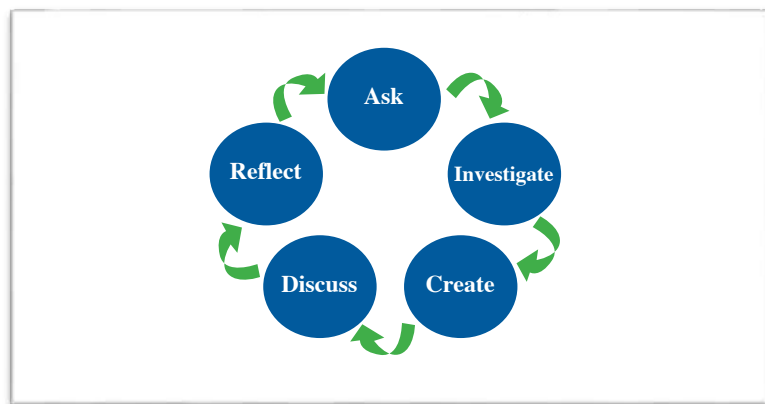


Figure 1: Five steps of inquiry-based learning model.

Source: excerpted and adapted from The Inquiry Page (2010)

1. *Ask*: This step begins with the curiosity questions, such as where do chickens come from? Where do eggs come from? Why does the moon change shape? After a period of learning, learners could find the answers or provide a new definition.
2. *Investigate*: This step is an actual practice step. It was called the “Investigation process” in which learners start to collect data by using experiments, observations, or interviews. If questions do not match with the purpose of the investigation, they need to be revised. The investigation processes are the opportunity for learners to participate in learning processes.

3. *Create*: This step is to synthesize and associate meanings for creating new creative knowledge where learners must create an idea, ideal perspective, or a new theory. Thus, the role of an instructor has changed from teaching to guiding. In doing so, it can open an opportunity for learners to build new knowledge.
4. *Discuss*: In this process, learners share their knowledge with fellow learners about his / her investigation. The discussion, summary, and exchange of experience are good examples of IBL processes.
5. *Reflect*: The reflection stage allow learners to review the questions for checking IBL processes and then summarize the results. If there was a problem at any stage it can be solved. This stage allows learners to examine, update, and revise by reflecting on the learning experiences in order to acquire deeper knowledge. The IBL procedures can assist learners to engage with the learning processes, stimulate learning, and allow proactive learning.

In conclusion, the five steps of IBL processes are a proactive learning model, from questioning to stimulate learners pursuing knowledge in different ways. Afterward, instructors would provide opportunities for learners to discuss and share some knowledge, ideas, and opinion with their classmates about what they have learned from the IBL processes since the beginning steps. In this case their classmates can provide some comments to revise and improve some issues and learners may need to study more on a particular topic.

Augmented Reality: AR

AR is a media that incorporates the virtual world and the real world by using a digital system (Azuma, 1997). Experts classified AR as having three features (a) a combination of real and virtual objects, (b) interaction in real time, and (c) the use of 3D technology (Azuma, 1997; Azuma et al., 2001).

El Sayed, Zayed, and Sharawy (2011) provided a different definition, where AR adds more information to supplement something missing in life by using virtual objects instead. Chen and Tsai (2012) supported this concept, and also mentioned that AR provides opportunity to interact with virtual objects, 2D, or 3D model to actually blend with the real world.

Thananuwong (2013) defined AR as a technology that combined the real world with a virtual world which overlays a three-dimensional virtual world onto the actual image of reality through the camera's digital tablet, smartphone or other device, and image display in real time.

In summary, AR is a media that combines virtual world and real world together by using a digital system to complement and add additional information for increasing the effectiveness of teaching and learning.

The application of AR

AR allows learners to learn such as the world and star, the digestive system of a cow, and even the zoo around the world. An image would be displayed similar to the real thing. It helps learners understand what they were interacting. This would not make learners feel bore when compared to what it was like the abstract or accompanying animation. For this reason, AR has become popular which it applied in many cases. For example:

Tourism: designers could present information that useful for travelers, including travel information such as exchange rates, maps, shelters, government buildings, restaurants, and tourist attractions.

Online trade: The pace of AR into e-commerce allowed customers to see virtual goods allowing potential customers to access additional background information to support their purchase decisions.

Education: AR has a role in education, not because the other AR allowed teaching was the most realistic. Although learners would not go into the actual situation or may not have a chance to actually touch, this was why learners excited to learn. Learners have seen which would differ from the usual textbooks. It was a three-dimensional image that could move like an authentic media (Tansiri, 2012).

Cheng (2017) found that using an AR book required a lower cognitive load on students. Students displayed more motivation, and more positive attitudes in learning. Moreover, Yilmaz, Kucuk, and Goktas (2017) found that most children were very happy with the activity and enjoyed using the interesting and fun AR picture books more than conventional books. Furthermore, Yoon, Anderson, and Elinich (2017) found that using AR can overcome the learning challenge of misconceptions about scientific ideas. That is using AR to investigate the science museum even in a short period of time, students gained greater knowledge over those students who did not use AR. The results of the interview also found that AR helped students to better understand science because it provided a better ability to visualize details and hidden information.

Instructional Design

The traditional format or ADDIE Model consists of five main steps with sub-steps:

1. *Analysis:* include problem analysis, learner analysis, content analysis, instructional analysis, identify instructional goals, and expert review and revision.
2. *Design:* consists of writing behavioral objectives, selecting evaluation and measurement tools, designing instructional strategies, selecting media and instructional material, and experts review and revision or formative evaluation.
3. *Development:* consists of developing evaluation instruction, developing instructional media and materials, developing learning management plans, developing guides for instructors and learners, and Experts review and revision or formative evaluation.
4. *Implementation:* consists of prepare presentation strategies, individual try out, small group try out, field trial, and expert review and revision or formative evaluation.
5. *Evaluation:* consists of data gathering or data collection, summative evaluation (Seels & Glasgow, 1998; Gustafson & Branch, 2002; Branch, 2009; Dick, Carey, & Carey, 2001).

ADDIE model was a traditional style, from which many variations have evolved from the original ADDIE model such as the following variations: Dick, Carey, and Carey (2001); Gagne et al. (2005); Morrison, Ross, and Kemp (2004); and Gustafson and Branch (2007).

Although ADDIE model would form a relatively complete and popular in the design of online teaching (Allen, 2006; Canbek, et al., 2011; Fresen, 2007; Soto, 2013;), many researchers have suggested that the design processes had to be relevant and appropriate for the environment and needs of teaching today, such as 3D technology and online teaching (Fresen, 2007; Kapp & O'Discoll, 2010; Irlbeck et al., 2006; Wang & Hsu, 2009) by mixing in some stages to suit the conditions of teaching and learning in the present. For instance, the Analyze Learners, State Standards and Objectives, Select Strategies, Technology, Media, and Materials, Utilize Technology, Media and, Materials, Require Learner Participation, and Evaluate and Revise (ASSURE) model was suitable for teaching in a learner-centered context (Sezer, Yilmaz, & Yilmaz, 2013) to maximize profitable relationship and the students.

Applying AR media with IBL processes model

This study used five learning processes of AR media using IBL activities:

Engagement, Exploration, Elaboration, Evaluation, and Explanation which the IPTST (2003, pp. 219-220) provided steps of the force and motion object as follows:

1. *Engagement*: Teacher first defines learning objectives related to the topic of the force and motion object and allows students to search for them. The purpose of this step is to enable students to search for learning objectives, which are then continuously redefined throughout the five cycles of IBL processes. In this case it encourages students to create questions and identify learning objectives. When students have no strong interest teacher presented case studies or media in various ways to create and stimulate their interest but it should not lead or force them beyond their boundaries or grade level of appropriateness. It only facilitates or guides some necessary topics.

2. *Exploration*: In this stage, students must define learning objectives. Therefore, teacher has to provide background knowledge of learning objectives in the class and guide students to set learning scenario using mobile AR as a tool for learning content. Once a particular issue or question is understood, next step is to make a plan and to set guidelines for checking assumptions. Then, make a possible choice and plan for data collection. The teacher can guide them in data collection processes such as experiment, survey, and observation by using mobile AR.

3. *Explanation*: The data should be analyzed, interpreted, and summarized. After that they should be presented in various forms such as tables, graphs, and diagrams.

4. *Elaboration*: In this step students links new knowledge with prior knowledge for conducting further research. New knowledge applies to new situations or other contexts that help students build extensive knowledge.

5. *Evaluation*: This step evaluates learning processes to measure how much students have learned. Moreover, students can apply knowledge in other situations so that learning is continuous or uses the Inquiry Cycle.

In summary, the 5-step of IBL model of the IPTST (2003) is proactive learning processes as they encouraged students to use a variety of methods for gaining knowledge. Further, teacher allows students to apply new knowledge by sharing their knowledge with the classmates. By doing so, students may learn more from their classmates. Thus, they can improve or revise their understanding of a topic or issue, and, or search for more knowledge in order to gain a deeper understanding as shown in Figure 2.

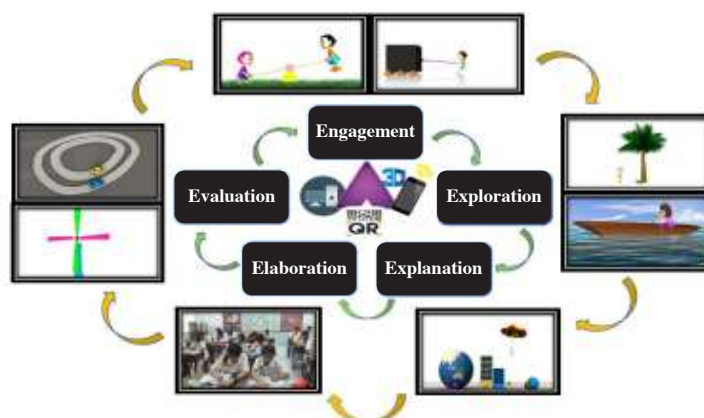


Figure 2: Applying AR media with IBL processes model

Source: Adapted from IPTST (2003) and researching activities

Research Methodology

Population and Samples

The population of this study was 108 of 9th grade students from four classes, at Udomwittaya School Prachathipat Sub-district, Thanyaburi District, Pathum Thani Province, Thailand. The students were organized by mixed ability classroom.

The samples of this study were selected by simple random sampling method using the classroom as a unit in a randomly selected for two classrooms include 52 students. The experimental group was 28 students and the control group was 24 students. The random procedures were as follows:

1. Selecting the samples with simple random sampling method for two classes.
2. Drawing for the experimental and the control group.
 - 2.1 28 students in an experimental group were taught by using AR media with IBL processes.
 - 2.2 24 students in control group were taught with traditional teaching method.

Research instruments

1. AR media with IBL processes
2. Pre and Post (Achievement) tests
3. Perception questionnaire toward AR media with IBL processes
4. Learning management plans

Data collection

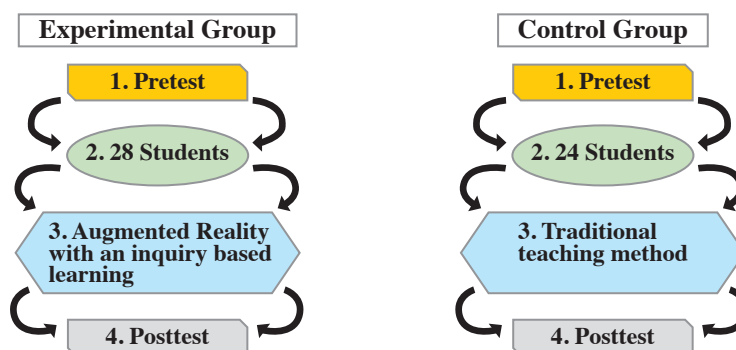


Figure 3: Data collection of the two groups

In this study, the researchers used an experimental model using a pretest and posttest for two groups of students.

True Experimental Designs and Pre-Test-Post-Test Control-Group Design
Experimental One-Group Pretest - Posttest Design.

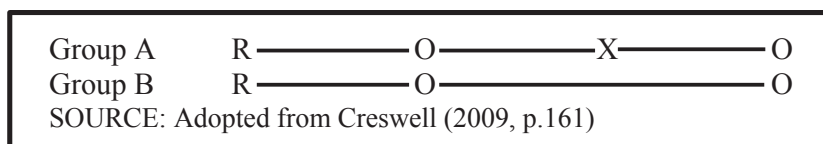


Figure 4: The Pre-Test-Post-Test Control-Group Design

To increase an understanding of the research process, the researchers plan more experiments like the Creswell (2009) as shown in the figure below.

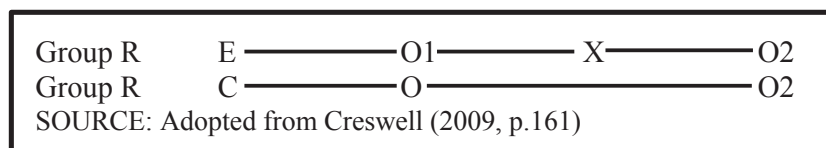


Figure 5: The Pre-Test-Post-Test Control-Group Design used in this study

The symbols used in the model experiment to convey meaning.

E	=	Experiment Group
C	=	Control Group
R	=	Random Assignment
O1	=	Pre-test
X	=	AR Media with an IBL
O2	=	Post-test

Data Analysis

The researchers analyzed the data as follows:

1. Find the Mean (\bar{X}) and Standard Deviation (S.D.) of pretest and posttest scores of the 9th grade students who learned from AR media with the IBL processes under the subject of “the force and motion object”.
2. Find the Mean (\bar{X}) and Standard Deviation (S.D.) of the pretest and posttest scores of the experimental group and the control group.
3. Compare the average score on the pretest between the experimental group and the control group by using t-test independent sample.
4. Compare the average achievement posttest of the experimental group and the control group by using t-test independent sample.
5. Compare the average achievement pretest and posttest of the experimental group and control group by using t-test dependent samples.
6. Find the Mean (\bar{X}) and Standard Deviation (S.D.) of the students’ satisfaction toward the AR with IBL processes.

Research Results

The results of the data analysis were presented as follows:

1. Create and design the quality of AR media by using IBL processes under the subject of “the force and motion object”. The quality of AR media was evaluated by five experts in four aspects: (1) image and animation of AR media, (2) audio of AR, (3) instructiveness of AR, and (4) design of AR media. The IOC results showed values between .60 - 1.00, which could be consistent with the content and the hypothesis.
2. The comparison of learning achievement score between pretest and posttest of 9th grade students who learned from AR media by using IBL processes under the subject of “the force and motion object”.

Table 1

A comparison of pretest score of experimental group and control groups

Learning Achievement	statistic			Independence Samples t-test		
	<i>n</i>	\bar{X}	<i>S.D.</i>	<i>t</i>	<i>df</i>	Sig.(2-tailed)
Experimental	28	10.79	1.424	1.042	50	0.302
Control	24	10.38	1.408			

* $P < .05$

Table 1 showed the average achievement scores of the experimental group compared to the control group. The results indicated that the pretest scores of experimental group ($\bar{X} = 10.79$, $S.D. = 1.424$) were higher than the pretest scores of control group ($\bar{X} = 10.38$, $S.D. = 1.408$) and the t-test was significant at .05 level. It was found that the learning achievement of the experimental group and the control group were not significantly different.

Table 2

A comparison of pretest and posttest scores of experimental group

Variables	statistic			paired t-test		
	<i>n</i>	\bar{X}	<i>S.D.</i>	<i>t</i>	<i>df</i>	Sig.(2-tailed)
Average Pretest Scores	28	10.79	1.424	-23.989	27	.001*
Average Posttest Scores	28	20.96	2.426			

* $P < .05$

Table 2 indicated that the achievement scores of the students who studied from AR media using IBL processes before and after learning had statistically significant differences at .05 level. The posttest scores were ($\bar{X} = 20.96$, $S.D. = 2.426$) higher than the pretest scores ($\bar{X} = 10.79$, $S.D. = 1.424$). Therefore, the achievement of the 9th grade students after learning from AR media was higher than before.

After the students learned from AR media by using IBL processes under the subject of “the force and motion object” with 9th grade students, the posttest scores were higher than the pretest scores with a t-test at -23.98 compared with the significant level of .05. Hence, this media assisted students to develop their knowledge and understanding on the topic of the force and motion object. This indicated that the experimental group students met their learning achievement which was consistent with the hypothesis.

Table 3

A comparison of pretest and posttest scores of control group

Variables	Statistic			t-test		
	<i>n</i>	\bar{X}	<i>S.D.</i>	<i>t</i>	<i>df</i>	Sig.(2-tailed)
Average Pretest Scores	24	10.38	1.408	-20.785	23	0.000*
Average Posttest Scores	24	16.38	1.245			

* $P < .05$

Table 3 showed that the pretest and posttest achievement scores of students in control group employing the traditional teaching method were at a statistically significant difference at the .05 level. The achievement of posttest scores ($\bar{X} = 16.38$, $S.D. = 1.245$) were higher than the achievement of pretest scores ($\bar{X} = 10.38$, $S.D. = 1.408$). The posttest achievement scores of students were higher than the pretest scores.

It could be concluded that Table 2 and 3 showed the achievement scores between the experimental group and the control group. The results revealed that the achievement after learning of the students in both the experimental group and the control group were high. The posttest scores of experimental group students was ($\bar{X} = 20.96$, $S.D. = 2.426$) higher than the achievement posttest control group ($\bar{X} = 16.38$, $S.D. = 1.245$).

3. Achievement results of the experimental group students who learned from AR media by using IBL processes and the control group students who learned with the traditional teaching method.

Table 4

A comparison of the achievement of experimental group and the control group

Learning Achievement	statistic			Independence Samples t-test		
	<i>n</i>	\bar{X}	<i>S.D.</i>	<i>t</i>	<i>df</i>	Sig.(2-tailed)
Experimental Group	28	20.96	2.426	8.363	50	.000*
Control Group	24	16.38	1.245			

* $P < .05$

Table 4 showed the average scores of achievement of the students in experimental and control groups. The findings found that the achievement after learning of the experimental group ($\bar{X} = 20.96$, $S.D. = 2.426$) was higher than the control group ($\bar{X} = 16.38$, $S.D. = 1.245$) and the different statistical Independence Samples t-test was at .05 level. Therefore, the learning achievement of the experimental group after learning from AR media by using IBL processes provided students' achievement and the scores were higher than the control group using traditional teaching methods.

4. Results of 9th grade students satisfaction towards AR media by using IBL processes under the subject of "the force and motion object".

Table 5

The results of student satisfaction toward AR media

List	Satisfaction Level		
	\bar{X}	S.D.	Meaning
The content and implementation of AR media	4.33	0.34	High
Presentation graphics, colors, and sounds of the AR media	4.26	0.34	High
Assessment	4.28	0.40	High
Total	4.29	0.28	High

Table 5 showed the students satisfaction toward AR media using IBL processes. Overall, students' satisfaction was high ($\bar{X}=4.29, S.D.=0.280$) which was congruent with the hypothesis. It was found that students were satisfied with AR media using IBL processes in the content and implementation of AR media ($\bar{X}=4.33, S.D.=0.34$), followed by assessment ($\bar{X}=4.28, S.D.=0.40$), and presentation graphics, colors, and sounds of the AR media ($\bar{X}=4.26, S.D.=0.34$) respectively.

Discussion

Discussion from the results of the research, the achievement of learning with 9th grade students under the topic of “the force and motion object” using the IBL processes as follows:

1. The results of creating and assessing the quality of AR media by using IBL processes under the subject of “the force and motion object” with 9th grade students found that the IOC result was at .60-1.00 and this was consistent with the content. The results of AR media met the qualification of the design criteria because the content and the lessons were designed and analyzed systematically prior to design based on the five steps of ADDIE model including: 1) analysis, 2) design, 3) development, 4) implementation, and 5) evaluation which was the main systematic design.

Developing AR media it included problem analysis, learning objectives, design, and development. Moreover, content experts and media experts provided pre study development feedback and pre study trialing which were employed before using the AR in an authentic situation. This was congruent with the study of Tunya and Chaturanon (2008) which applied the ADDIE model in the development of online electronic science lessons using the learning activities based on the concepts of High/Scope instructional activity, starting from the analysis, design, development, implementation, and evaluation. The design of electronic lessons online was such a system and the achievement of students was higher than the normal classes students at the statistically significant level of .05.

2. The posttest achievement of an experimental group using AR media and IBL processes was higher than the pretest achievement. The level of statistical significance was at the .05 level because this media provided the opportunity for learners to practice by themselves on their own time and place based on the five stages of the IBL processes: (1) Engagement, (2) Exploration, (3) Explanation, (4) Elaboration, and (5) Evaluation (IPTST, 2003 pp. 219-220).

Using the IBL processes teachers began to generate students' attention to the lesson by using various strategies. As a result, students were interested in learning. After that, students have to study and find the answers and discussion in various problems or learning issues. The students were able to apply and build on their prior knowledge generate wider knowledge. The final step was to evaluate the different ways students learned.

Therefore, the application of AR media using the IBL processes was appropriate for instruction in the 21st century which corresponded to the scientific inquiry processes of the MOET that is, to use investigation, observation, and experiment, to search for knowledge (BAAES, 2008).

Another important strategy was the IBL processes that had efficiency and promoted cognitive learning as well. All this might be AR media using the IBL processes focused on the differences between individuals, student-centered, and a variety of learning processes. Learners can learn anywhere and anytime which they were able to review their lessons as they needed which was consistent with the concept of Kuhlthau, Maniotes, and Caspari (2007, p. 2). They mentioned that the IBL processes would focus on the processes of investigation, research, survey, tracing and tracking, which stimulated community involvement in the learning process. In addition, they believed that learning came from the interaction.

Hence, integration of AR media with the IBL processes was suitable for teaching in the 21st century because it emphasized proactive teaching by using problem-based learning which this factor corresponded to the concept of (Price, 2001, cited in Chiang, Yang, & Hwang, 2014) which described that IBL as the processes with which the instructor would prompt students to create hypotheses, describe, and discuss the classification monitoring survey issues together to solve the various problems faced in everyday working life. Students who employed these processes would have the skills to interact in society with high level thinking skills (Price, 2001 cited in Chiang, Yang, and Hwang, 2014). Teaching in the 21st century learners were able to access content anytime and anywhere. The learners could bring any tools/equipment to study. Therefore, educational organizations must be able to provide and maintain technology to facilitate teaching and learning.

This was consistent with the Yu, et al. (2013) study which found that teaching English using mobile phones was not only convenient, but also it was very effective. Teaching English as a foreign language requires more time and effort in the design of learning management plans. Hsu's study (2017) found that when students used the self-directed or task-based AR educational game system they used lower mental effort and exhibited lower foreign language learning anxiety, while the learning effect was high. Today technology is increasingly pervasive in many areas, such as communication, education, and manufacturing so that the effective teaching of the modern digital technology should be used because it was convenient and portable. In addition, the results of this study were in accordance with the findings of Detsiri (2010), she studied "*The comparison of learning achievement on topic 'force and movement' science learning substance group for Matthayomsuksa 3 students using multimedia computer lesson and scientific teaching*". The results found that the achievement of students who learned by multimedia computer lessons was higher than the pre-study and this was statistically significant at the .05 level.

3. The achievement of experimental group after studying with the AR media using the IBL was higher than the control group and it was statistically significant at the .05 level. The average score after studying with this media was at 20.96 whereas the average score of the control group was at 16.38. These scores showed that studying with AR using IBL allowed students to attain higher scores.

This is because AR media was designed based on the teaching pattern of the ADDIE Model. However, it should mix in some stages to suit the conditions and context of what and who is being taught. For instance, ASSURE model mixed with ADDIE model (Smaldino, Lowther, & Russell, 2012). This was appropriate for a learner-centered situation. Students showed more interaction and practice in gained more interaction and practiced in several steps, particularly "Require learner participation." Moreover, instructor needed to support

teaching and learning with technology and new media. Students must receive the evaluation before the formal assessment.

The achievement of the experimental group was higher due to the AR media. Consequently, the results of this study were consistent with the concept of AR offered by Azuma where AR is a kind of a technology that attempts to combine the augmented world and the real world together using digital tools (Azuma, 1997). Pejoska-Laajola, et al. (2017) also found that augmented video calls can improve work place learning in remote collaboration work environment by pointing at task objects and locations on the screen for other call participants to review.

4. Students' satisfaction with AR media with the learning processes of IBL under the topic of "the force and motion object" with 9th grade students was high. When considering each item, it found that the students were satisfied with AR media with the learning processes of IBL ranked at the top three as follows:

First, they were satisfied with the content and continuity of AR media in which the questionnaire number five showed that it helped students better understand content.

Second, question number 14 of the questionnaire of the assessment format showed that it was very clear and easy to understand.

Finally, the content and continuity of AR media where the scores were equal in two items: Item number 1 (the content was congruent with the indicators) and 2 (the content and the time were suitable). However, students were less satisfied with the background color.

In this point, the researchers designed and developed AR media in accordance with students' needs by using the five processes of the inquiry based processes. The teaching process is a quest for knowledge (IPTST, 2003).

These processes were created to generate students' interest and encourage the curiosity to learn deeply. Moreover, students were able to interact with one another as well as they can work together. The students also had opportunity to practice and reinforce their skills. This process is important as the instructor is responsible for process students easier and gives them a chance to present what they have discovered. This study was consistent with the findings of Detsiri (2010). She studied a comparison learning outcome between learning with computer multimedia and traditional science teaching "the force and motion object" in the learning area of science of the 9th grade students.

Detsiri's study (2010) showed that students were satisfied with computer multimedia was at a high level. In addition, the achievement of students who studied with computer multimedia was higher than the achievement of students who studied with traditional science teaching at a statistically significant level of .05.

The results of the satisfaction assessment and observation behavior of students, the students were satisfied with AR technology. For example, they preferred to learn with the AR media rather than the traditional instruction. During class, the researchers noticed that students were happy to see images in regular textbooks as an animation. Moreover, some students also asked for the AR media to study after class. The 3D images might motivate students' interest and understand the lessons much easier and faster than using textbook. Especially, the courses in science area, teachers should design them to illustrate more because it helped communicate more clearly abstract ideas. Hence, students may understand more quickly and allow multisensory intake of the subject being taught.

The results were consistent with research in the field of AR media that it not only improves academic achievement, but also motivate students to learn. This study was consistent with many researchers (Bujak et al., 2013; Cheng, 2017; Chiang, Yang, Hwang, 2014; Di Serio, Ibáñez, & Kloos, 2013; Jara et al., 2011; Joo-Nagata et al., 2017; Liu & Chu, 2010; Yilmaz, Kucuk, & Goktas, 2017).

Ibáñez et al., (2014) built an AR application for teaching and learning science concepts of electromagnetism. Their study showed that AR assisted students to achieve in learning objectives. It also provided immediate feedback. In addition, using AR with a smartphone could help students understand the content, and also encourage their interest in learning. This was consistent with the study of Chiang, Yang, and Hwang (2014) which found that the use of mobile technology combined with AR not only improved learning efficiency, but also encouraged students to learn digital technology as well. This might be due to the use of AR, which allows students to see still images, animation, and hear audio. Consequently, the students were very satisfied.

This study is also consistent with the concepts of Srifa (2013) in which he gave a definition of Aurasma that was an application for creating AR media and suitable for portable computer media that use, IOS and Android operating systems. A special feature of Aurasma is an intermediary for linking reality and the world of AR. The presentation form of media could see, control, and touch screen as still images, animations, sounds, and link to other Websites.

Suggestions for further practice as follows:

1. Before teaching the lessons, instructors must provide students both experimental and control groups to learn basic skills of using AR media. If some students were not proficient in the use of media technology, it might be an obstacle to the students' efforts to achieve the learning objectives.
2. The AR media must be appropriate for students.
3. The instructors should prepare and ensure that ongoing network connectivity for smartphones or portable computer were in working order to facilitate learning.
4. The instructor must choose suitable learning model or learning theory.

Suggestions for further research

1. A comparative study should be conducted to compare achievement with other teaching methods and other classes to find a suitable and appropriate class, media, model, and theory.
2. The media should be created to other forms of AR for applying in other courses.

References

- Allen, W. C., & Swanson, R. A. (2006). Systematic training: straight-forward and effective. *Advances in Developing Human Resources*, 8(4), 427–429.
- Azuma, R. T. (1997). *A Survey of Augmented Reality*. Presented at the Teleoperators and Virtual Environments, Canada.
- Azuma, R., Baillot, Y., Behringer, R., Feiner, S., Julier, S., & MacIntyre, B. (2001). Recent advances in augmented reality. *IEEE Computer Graphics and Applications*, 21(6), 34–47.
- Branch, R.M. (2009). *Instructional Design: The ADDIE Approach*. New York: Springer.
- Bujak, K. R., Radu, I., Catrambone, R., MacIntyre, B., Zheng, R., & Golubski, G. (2013). A psychological perspective on augmented reality in the mathematics classroom. *Computers & Education*, 68, 536–544. doi:10.1016/j.compedu.2013.02.017.
- Canbek, N.G., Lominadze, T., Manjgaladze, M., & Demiray, U. (2011). *Instructional system Design (ISD): Theory and Practice in Second Life*.
- Chiang, T.-H.-C., Yang, S.-J.-H., & Hwang, G.-J. (2014). An Augmented Reality-based Mobile Learning System to Improve Students' Learning Achievements and Motivations in Natural Science Inquiry Activities. *Educational Technology & Society*, 17(4), 352–365.

- Chen, C.-M., & Tsai, Y.-N. (2012). Interactive augmented reality system for enhancing library instruction in elementary schools. *Computers & Education*, 59(2), 638–652. doi:10.1016/j.compedu.2012.03.001.
- Cheng, K. H. (2017). Reading an augmented reality book: An exploration of learners' cognitive load, motivation, and attitudes. *Australasian Journal of Educational Technology*, 33(4), 53-69. <https://doi.org/10.14742/ajet.2820>.
- Creswell, J.W. (2009). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (3rd ed.) California: Sage.
- Detsiri, C. (2010). *The comparison of learning achievement on topic 'Force and Movement' science learning substance group for Matthayomsuksa 3 students using multimedia computer lesson and Scientific teaching*. Master of Education in Curriculum and Instruction, Thepsatri Rajabhat University.
- Dick, W., Carey, L., & Carey, J. O. (2001). *The systematic design of instruction* (5th Edition). Toronto: Addison-Wesley Educational Publishers Inc.
- Di Serio, Á., Ibáñez, M. B., & Kloos, C. D. (2013). Impact of an augmented reality system on students' motivation for a visual art course. *Computers & Education*, 68, 586–596. doi:10.1016/j.compedu.2012.03.002.
- El Sayed, N. A. M., Zayed, H. H., & Sharawy, M. I. (2011). "ARSC: Augmented reality student card" An augmented reality solution for the education field. *Computers & Education*, 56(4), 1045–1061. doi:10.1016/j.compedu.2010.10.019.
- Fresen, J. (2007). A taxonomy of factors to promote quality web-supported learning. *International Journal on E-Learning*, 6(3), 351-362. Available from EdITLib Digital Library. (20885)
- Gagne, R. M., Wagner, W. W., Golas, K. C., & Keller, J. M. (2005). *Principle of instructional design*. Belmont, CA: Wadsworth Inc. Thomas Learning.
- Gustafson, K. L., & Branch, R. M. (2002). *Survey of instructional development models* (4th ed.). Syracuse, NY: ERIC Clearinghouse on Information & Technology.
- Gustafson, K.L., & Branch, R. M. (2007). What is instructional design? In Reiser, R. A. and Dempsey, J. V. (Eds). *Trends and issues in instructional design and technology* 2nd ed. (pp. 11-28). Upper Saddle River, N.J.: Pearson/Merrill Prentice Hall.
- Hsu, T.C. (2017). Learning English with Augmented Reality: Do learning styles matter? *Computers & Education*, 106 (2017) 137-149.
- Ibáñez, M. B., Di Serio, Á., Villarán, D., & Delgado Kloos, C. (2014). Experimenting with electromagnetism using augmented reality: Impact on flow student experience and educational effectiveness. *Computers & Education*, 71, 1–13. doi:10.1016/j.compedu.2013.09.004.
- Irlbeck, S., Kays, E., Jones, D., & Sims, R. (2006). The phoenix rising: Emergent models of instructional design. *Distance Education*, 27(2), 171-185. doi:10.1080/01587910600789514.
- Jara, C. a., Candelas, F. a., Puente, S. T., & Torres, F. (2011). Hands-on experiences of undergraduate students in Automatics and Robotics using a virtual and remote laboratory. *Computers & Education*, 57(4), 2451–2461. doi:10.1016/j.compedu.2011.07.003.
- Joo-Nagata, J., Martínez Abad, F. García-Bermejo Giner, J., & García-Peñalvo, F.J. (2017). Augmented reality and pedestrian navigation through its implementation in m-learning and e-learning: Evaluation of an educational program in Chile. *Computers & Education*, 111, 1-17. DOI10.1016/j.compedu.2017.04.003.
- Kapp, K. M., & O'Driscoll, T. (2010). *Learning in 3D: Adding a new dimension to enterprise learning and collaboration*. San Francisco, CA: Pfeiffer.

- Kuklthau, C.C., Maniotes, L.K., & Caspari, A.K. (2007). *Guided inquiry: Learning in the 21st century*. Westport, CT & London: Libraries Unlimited.
- Liu, T.-Y., & Chu, Y.-L. (2010). Using ubiquitous games in an English listening and speaking course: Impact on learning outcomes and motivation. *Computers & Education*, 55(2), 630–643. doi:10.1016/j.compedu.2010.02.023.
- Morrison, G. R., Ross, S. M., & Kemp, J. E. (2004). *Designing effective instruction (4th ed.)*. New York, NY: John Wiley & Sons Inc.
- Pejoska-Laajola, J., Reponen, S., Virnes, M., & Leinonen, T. (2017). Mobile augmented communication for remote collaboration in a physical work context. *Australasian Journal of Educational Technology*, 33(6), 11-26. <https://doi.org/10.14742/ajet.3622>.
- Seels, B., & Glasglow, Z. (1998). *Making Instructional design decisions*. New Jersey: Prentice-Hall Inc.
- Sezer, B., Yilmaz, F.G.K., & Yilmaz, R. (2013). Integrating technology into classroom: The learner-centered instructional design. *International Journal on New Trends in Education and Their Implication*, 4(4), 134-144. Retrieved from: <http://www.ijonte.org>.
- Smaldino, S. E., Lowther, D. L., & Russell, J. D. (2012). *Instructional technology and media for learning* (10th ed.). Boston, MA: Pearson.
- Soto, V. J. (2013). Which instructional design models are educators using to design virtual world instruction? *MERLOT Journal of Online Learning and Teaching*, 9(3), pp. 364-375.
- Srifa, P. (2013). *Producing new media for instruction and learning using Aurasma style*. Department of Educational Technology, Faculty of Education Kasetsart University, Thailand.
- Suratruangchai, W., et al. (2005). The Current Instructional Practices and Problems of Providing Instruction of Instructors at Burapha University. *Journal of Education*, 17(2), 105-118.
- Tansiri, P. (2012). Augmented Reality. *Executive Journal*, 8(10), 169-175.
- Thai Bureau of Academic Affairs and Educational Standards (BAAES). (2008). *Learning Standards and Indicators, Learning Substance of Science*. Office of the Basic Education Commission.
- Thananuwong, R. (2013). *Augmented reality media on the topic of floating and sinking*. Retrieved from: http://secondsci.ipst.ac.th/index.php?option=com_content&view=article&id=336:armedia&catid=19:2009-05-04-05-01-56&Itemid=34.
- The Inquiry Page. (2010). *Learning begins with questions*. Retrieved from: <http://www.cii.illinois.edu/InquiryPage/inquiry/process.html>.
- The Institute for the Promotion of Teaching Science and technology (IPTST) (2003). *Learning arrangement in Substance of Science, Basic Education Core Curriculum 2008*. Bangkok: The Institute for the Promotion of Teaching Science and technology.
- The National Research Council. (1996). *National science education standards*. Washington, DC: National Academy Press.
- Tunya, N., & Chaturanon, W. (2008). The development of electronic-online science lessons using high/scope instructional activities for level 3 students at Benjamarachalai School under the royal patronage of the king. *Journal of Education and Social Development*, 4(2), 77-88.
- Wang, S., & Hsu, H. (2009). Using the ADDIE model to design Second Life activities for online learners. *TechTrends*, 53(6), 76-81. doi:10.1007/s11528-009-0347-x.
- Yilmaz, R. M., Kucuk, S., & Goktas, Y. (2017). Are augmented reality picture books magic or real for preschool children aged five to six? *British Journal of Educational Technology*, 48(3) 824–841. doi:10.1111/bjet.12452.



- Yoon, S., Anderson, E., Lin, J., & Elinich, K. (2017). How Augmented Reality Enables Conceptual Understanding of Challenging Science Content. *Educational Technology & Society*, 20 (1), 156–168.
- Yu, Y-S, Lin, Y-Y, Huang, Y-L., & Hsieh, W-H. (2013). The evaluation of use the mobile phone learning English in Taiwan. *International Journal of Information and Education Technology*, 3(2), 189-191.

Consulting Services Needed for Chinese Investors to Develop Business in Rayong Province, Thailand

Ju Yunyi, Burapha University, Thailand

Nart Nontasak, Retired Professor, Chonburi, Thailand

Ronald Markwardt, Retired Professor, Chonburi, Thailand

Abstract: *The author of this study investigated the needs for consulting services by Chinese investment in Rayong province, Thailand. The two research questions were: What are the perceptions of Chinese investors in Rayong province regarding four of consulting services needed for business development specifically: 1) Cultural Relations, 2) Future Business Development, 3) Creative Economy Business, and 4) System Development? Second, what is the scope of consulting services needed for Chinese investors to develop Chinese business in Rayong Province? The quantitative aspect of study sampled 36 Chinese investors from Bangkok, Chonburi and Rayong. Structured interviews were also assigned to 8 Thai and Chinese business experts in order to answer the research questions and respond to the objectives. Of the consulting services needed for business development. System Development rank highest, followed by Creative Economy Business and Future Business Development. Cultural Relations ranked least important. The respondents also felt they needed consulting service about business law, language services, policy of investment of the Thai government, local environment and the trend of future policy of the Thai government. Most think that IT management and logistic services have good development potential.*

Keywords: Chinese Investment, Consulting Services, Cultural Relation, Future Business Development

Introduction

China and Thailand have a long history of intercultural relations, encouraged by advantages of geographical proximity, cultural similarity, economic complementarity and so on. In recent years China and Thailand trade has increased significantly. So there are many Chinese business investments in Thailand.

As verified by Shen (2012, pp. 52), the last decade has witnessed fast expansion of Sino-Thai economic relations which is unprecedented in the history of economic exchanges between the two countries ascribing to the signing of China-ASEAN Free Trade Agreement (CAFTA). The three agreements signed attaching to CAFTA have been the driving forces to the expansion of the two countries' economic exchanges, namely, the Agreements on Trade in Goods, the Agreement on Trade in Services, and ASEAN China Investment Agreement which were signed on 2004, 2007 and 2009 separately.

In addition to the booming trade, mutual investment of both sides is growing in a fast space, especially with the increasing flow of Chinese investment into Thailand, the model of "two way" investment is coming into being. Some other types of economic cooperation, such as tourist cooperation and trade in service as well as financial cooperation (or coordination) are also vital to Sino-Thai bilateral economic growth and development (Shen, 2012, pp.52).

Many Chinese investors have been doing business in other countries, although they may not understand local culture, language and law. For example, many Chinese come to invest in Thailand. But they do not know the law regarding what foreigners can or cannot do. So it is easy to be in trouble. If some agencies can provide relevant consulting services, it can reduce the chance that similar events do not happen again. Consulting services can help Chinese investors in Thailand for convenience to do business. The Chinese and the Thai

governments have to cooperate for business development, as many Chinese companies invest in Thailand and Thai business also plans investment in China. Some Chinese cannot communicate in Thai language. They need some agencies or personnel who can provide consulting service to help them understand the business information and investment in Thailand. It is clear that consulting services will be needed toward the year 2020. Tsui (2016, pp.3) stated that “it is a good policy of the Board of Investment (BOI) to launch its 2015-2021 Investment Promotion Strategy with the aim to enhance national competitiveness by promoting high value-added industries, investment clusters, development in the southern provinces, special economic zones (SEZs) in border areas and Thai overseas investment. Under the new strategy, tax incentives and non-tax incentives (e.g. guarantees or protection measures) are granted to investors. Priorities are given to investment in high-tech and creative industries, service industries that support the development of a digital economy and industries that utilize local resources.” Creative economy businesses are the first step for many new investors, including Chinese. It is also hoped that more and more Chinese investment will be developed in Chonburi and Rayong provinces. Therefore, consulting services business is an interesting area for investigation. It is necessary to create an eastern system of consulting services. Currently most consulting services come from westernized countries. According to Verlander (2012, pp.27), “Consulting has become an important source of employment and professional satisfaction for tens of thousands of people in the United States and around the world”.

Therefore, it is interesting to study the scope of consulting services for Chinese investment.

Research Objectives

1. To investigate the scope of consulting services needed for Chinese investors to develop Chinese business in Rayong Province.
2. To study the perceptions of Chinese investors in 4 areas of consulting services needed for business development in Rayong Province:
 - 2.1.Cultural Relations
 - 2.2.Future Business Development
 - 2.3.Creative Economy Business
 - 2.4.System Development

Research Questions

The research was intended to answer the following questions:

1. What were the perception of Chinese investors in 4 areas of consulting services needed for business development in Rayong Province?
 - 1.1 Cultural relations
 - 1.2 Future business development
 - 1.3 Creative economy business
 - 1.4 System development
2. What was the scope of consulting services needed for Chinese investors to develop Chinese business in Rayong Province?

Review of Literature

According to Tsui (2016) stated that the Board of Investment (BOI) to launch its 2015-2021 Investment Promotion Strategy, priorities are given to high-tech and creative industries, and service industries aligned with the development of a digital economy. BOI supports creative industries to develop potential in future for foreign investment. So innovative business for a creative economy and future business development is important when Chinese investors

come to do business in Thailand. The cultural difference is a problem for Chinese investment in Thailand. Consulting services can help them understand cultural differences and other factors in order to avoid social barriers. For the system development area, different companies have different systems. Companies needed management assistance to develop their systems of development and management. "Systems theory considers the input-throughput-output component and their interactions both within themselves and with the external environment, the elements of purpose, people, structure, techniques and information must be coordinated and integrated by the managerial system, in order to maximize value for the organization" (Randolph & Blackburn, 1989; as cited by Montuori, 2000, pp.61). Consulting services value in addition to helping enterprises find strategic direction, clear objectives, the implementation of a path, the more important it is to help enterprise planning and development in the future. A consulting company is to help professional talents, advanced management concepts and enrich practical experience. Therefore, providing advice to avoid problems are needed. Consulting services can help develop or improve systems of enterprise for long-term development. Modern business organizations often use consulting services to adapt to the changing business world, particularly if they intend to expand their businesses.

In the Beijing newspaper Xihua, writer Meng (2014) mentioned that "China and Thailand on Friday pledged to further enhance cooperation on economic, trade and investment so as to promote bilateral ties to a higher level. Meng encouraged both sides to enhance cooperation in these areas and to further tap the potential of cooperation in energy, infrastructure, trade of agricultural products, finance, information and space technology, and culture." Although recent policy has built a bridge for Chinese corporations in Thailand, at the same time, Chinese companies also face the impacts and challenges caused by cross-cultural differences.

Feldman and others, (2014) offer the following definition that economic development was a positioning the economy growth trend. Economic development is not a function of market forces, rather it is the product of long-term investments made based on creative thinking, knowledge transfer, and infrastructure. It depends on functioning social and economic institutions and on cooperation between the public sector and private enterprise. Economic development requires collective action and large-scale, long-horizon investment. Economic development addresses the fundamental conditions necessary for the microeconomic functioning of the economy. Economic development is essential to creating the conditions for economic growth and ensuring our economic future.

The degree of trading between Thailand and China has become more and more intensive in over the years. Authors Gradziuk (2010) feels that now Thailand has become the opening gate for China to enter into the ASEAN countries' market. Asia is considered to be the world's largest emerging market, and Thailand is a founding member of ASEAN, the Association of South East Asian Nations. Of strategic significance is the strong market radiation ASEAN Offers.

The concepts of creative and cultural economy are being considered as important and are a growing part of the global economic negotiations. Innovation is one core process driving economic activity. The term innovation has come to be used to loosely describe positive change for economic advantage. This does establish a foundation for the process; however, the reality is that to gain the benefits of innovation requires a complex mix of factors: both micro and macro-economic (Parry, 2013, pp.3).

Many industries require consulting services to identify factor affecting their business. Consulting services can help them work more conveniently and sometimes can help solve a problem. Whether in restructuring, implementing systems, developing staff, changing procedures, buying new companies, or bringing out new products and services, consultants are being asked to assist in a variety of ways (Phillips, 2000).

Research Methodology

A quantitative method was chosen as the research method to develop the scope of consulting services needed for Chinese investors to develop Chinese business in Rayong province and investigate Chinese investor's ideas in 4 areas of consulting services for business development. Two types of research instrument used were: 1. For the questionnaire, the researcher used snowball sampling as a non-probability method by identifying someone and recommending others who might know the details in this research. It was especially useful when the research population was inaccessible or hard to find (Trochim, 2006). 2. For interview, the researcher used purposive sampling to select key participants: 1) who were experts of performing Thai and Chinese business; 2) who had an understanding of Thai and Chinese culture and who were working with Chinese investors in Bangkok, Chonburi and Rayong; 3) who were Chinese citizens in the position of general manager; 4) and who were understanding consulting services or were consultants. The population came from Chinese business operating in Bangkok, Chonburi or Rayong provinces. Some information was collected by library research. The selected Chinese experts in business were interviewed. There were a total of 36 Chinese investors and 8 Chinese businessmen, who answered questionnaires.

Validity of Instruments

For this research, questionnaires were used to obtain information from Chinese general managers. The research designed a four-scale rating questionnaire to collect data. The questionnaires were written both in English and Chinese. In this research, the questionnaire and interview questions were reviewed by three experts to see if the questions were appropriate. To make sure that good quality data was collected, the content validity of the questionnaire was judged and suggested by three specialists to evaluate the item objective congruence (IOC). The researchers adjusted the questionnaires according to suggestions from an IOC index. The Item-Objective Congruence (IOC) Index was used as a standard to assess the relevancy of the content and the objective of the questionnaire. A 3-point scales (1 = relevant, 0 = uncertain, -1 = irrelevant) was designed for IOC checking forms.

The result of IOC from three experts in the present study was 0.885, the IOC result of each item exceeded 0.5 which indicated that each item was significant and could be used. The English version questionnaire was translated into Chinese and English versions, and then reviewed by a Chinese and English teacher for its validity.

Result of the Study

1. From the Questionnaire

The questionnaire provided answers for research question 2 and research objective 2. Result from Table 1-5 revealed the four needed areas of consulting services as in the followings:

Bipolar Likert scaling was used measuring either positive or negative response to a statement. The questionnaire was in 4 scales of agreement, where the middle option of "Neither agree nor disagree" was not used. This is sometimes called a "forced choice" method, since the neutral option is removed (Allen & Seaman, 2007).

The designate to 4 scale agreement:

Strongly Agree = 3

Agree = 2

Disagree = 1

Strongly Disagree = 0

An item with a calculated mean value equal or greater than 1.51 (1.51-3.00) would be accepted:

2.26 - 3.00 = Strongly Agree

1.51 – 2.25 = Agree

0.76 – 1.50 = Disagree

0 – 0.75 = Strongly Disagree

The demographic characteristics of participants was based on experience and ability to understand and predict investors in Rayong Province during 2016-2020. They were 36 Chinese general managers selected by purposive sampling from the population in Bangkok, Chonburi and Rayong.

Table 1 Mean and Standard Deviation of the Perception of Chinese Investors regarding the need for consulting services.

(N = 36)			
Areas of Consulting Services	Mean	SD	Rank
System Development	2.34	0.58	1
Creative Economy Business	2.32	0.59	2
Future Business Development	2.11	0.65	3
Cultural Relations	2.01	0.66	4

According to Table 1. The highest need for consulting of Chinese investors in Rayong is in the area of system development. The second is creative economy business. The third is future business development. And the last is cultural relations.

Table 2 Mean and Standard Deviation of Chinese Investors perceptions of Cultural Relations

(N = 36)				
Cultural Relations	Mean	SD	Level of Perception	
1. There should be more Chinese schools teaching Thai language.	2.28	0.61	Strongly Agree	
2. There should be more Thai schools teaching Chinese language.	2.56	0.50	Strongly Agree	
3. Understanding Thai culture and language is important.	2.61	0.49	Strongly Agree	
4. Thailand culture and Chinese culture are similar.	1.81	0.82	Agree	
5. Gaps in cultural knowledge and skills cause business problems.	1.92	0.81	Agree	
6. Thai and Chinese students studying together bridge the gap of culture differences.	1.03	0.56	Agree	
7. Speaking English and Chinese very well helps Chinese students find a good job in Thailand.	1.86	0.83	Agree	
Total Average :	2.01	0.66	Agree	

The question number 3 got a high mean of 2.61. It means most participants strongly agreed that understanding Thai culture and language was important. But question 6 got a low mean of 1.03. It means they did not think that Thai and Chinese students studying together would bridge the gap of cultural differences. However, they totally agreed that cultural relations should be accepted as a part of consulting services at 2.01.

Table 3 Mean and Standard Deviation of Chinese Investors perceptions of Future Business Development in Thailand

				(N = 36)
Future Business Development	Mean	SD	Level of Perception	
1. Politics is an important factor for successful business.	2.25	0.60	Agree	
2. More Chinese will develop their businesses in Cambodia, Lao and Myanmar before the year 2020.	2.28	0.61	Strongly Agree	
3. Creative economy business will cause new trends in Thailand in the future.	2.17	0.70	Agree	
4. Consulting services can help Chinese companies increase market growth for customer satisfaction.	2.36	0.80	Strongly Agree	
5. Chinese business needs more consulting services in the future, based on current trends.	2.33	0.68	Strongly Agree	
6. China's outward foreign investment has big potential in future.	2.72	0.45	Strongly Agree	
7. Small Chinese business don't need consulting services in Thailand.	0.61	0.69	Strongly Disagree	
8. Consulting service is important for developing creative economy between China and Thailand business in next 5 years.	2.17	0.70	Agree	
Total Average :	2.11	0.65	Agree	

The research participants agreed at the mean of 2.11 to accept consulting services in the area of future business development. For the details the perception of the content from more to less were (6), (4), (5) and (2). The least one was (7).

Table 4 Mean and Standard Deviation of Chinese Investors perceptions of Creative Economy Business

				(N = 36)
Creative Economy Business	Mean	SD	Level of Perception	
1. Copying other business styles is possible for business development.	1.53	0.91	Agree	
2. Consulting service is important to cross-border business investment because of difference ways of business thinking.	2.58	0.55	Strongly Agree	
3. Consulting services can be provided better communication process for investors, customers, and government agencies.	2.56	0.61	Strongly Agree	
4. It is necessary for some or all members of investors to be creative.	2.50	0.56	Strongly Agree	

(N = 36)

Creative Economy Business	Mean	SD	Level of Perception
1. There will be more Chinese business and investment in Thailand.	2.58	0.55	Strongly Agree
2. There are some restrictive policies in connection with foreign investment in Thailand.	2.22	0.59	Agree
3. Most Thai customers agree with high quality of Chinese products and services.	1.25	0.73	Disagree
4. It is clear that Chinese investors need consulting services not only in Thailand but also in Myanmar, Lao and Vietnams.	2.44	0.61	Strongly Agree
5. Chinese investors should study Thai economy, business and politics by themselves.	2.75	0.44	Strongly Agree
6. The Chinese investors can get Thai government support.	2.28	0.57	Strongly Agree
7. Thai trade with China should focus mutual benefit.	2.78	0.42	Strongly Agree
Total Average	2.32	0.59	Strongly Agree

According to the Table 4, the research participant strongly agree that creative economy business was accepted as a part of consulting service at 2.32. The item which had the highest means score was (11). The item was perceived as the lowest is (7).

Table 5 Mean and Standard Deviation of Chinese Investors perceptions of System Development

(N = 36)

System Development	Mean	SD	Level of Perception
1. Current factors affecting consulting services will be the some in the year 2020.	1.86	0.68	Agree
2. Interaction among consultants, customers and government agencies have to be developed.	2.44	0.50	Strongly Agree
3. There are many systems of investment that a company can utilize for future business both in Chinese and Thailand.	2.36	0.49	Strongly Agree
4. Chinese authorities have to encourage team members to develop business and industries in Thailand.	2.39	0.73	Strongly Agree

				(N = 36)
System Development	Mean	SD	Level of Perception	
5. Thai and Chinese culture support effective system for Chinese investors.	2.39	0.55	Strongly Agree	
6. International trade helps develop one way of working together effective.	2.58	0.50	Strongly Agree	
Total Average :				Agree

Table 5 shows that the research participants perceived the importance of system development to be most tied to international trade supporting working together effectively. And the least item of acceptance was “Current factors affecting consulting services would the same in the year 2020”.

2. From the Interview

The interviews provided answers for research question 1 and research objective 1. What is the scope of consulting services needed for Chinese investors to develop Chinese business in Rayong Province?

The first interview question, “Do you need any consulting services before investing in Rayong Province in Thailand?” got the answer that most participants investors need consulting services about business law, language service and the policy of investment of the Thai government before investing in Thailand.

The second interview question, “What kind of consulting service your company needs toward the year 2020 for investing in Rayong Province?” got the answer that most participant investors need consulting services about the local environment and the trend of future policy of the Thai government.

The last interview question, “What kind of modern Chinese business or industry for Rayong Province toward the year 2020?” got the answer that most participant investors think that the IT management and logistics services need to be developed in Thailand.

Discussion

For the System development area, different companies have different system. Each Chinese company needs management to develop their own system. It can help the company to get good development and management. “Systems theory considers the input-throughput-output component and their interactions both within themselves and with the external environment, the elements of purpose, people, structure, techniques and information must be coordinated and integrated by the managerial system, in order to maximize value for the organization” (Randolph & Blackburn, 1989; as cited by Montuori, 2000, pp.61). In this research most participants strongly agree the Thai trade with China should focus on mutual benefits. And Chinese investors should study the Thai economy business and politics by themselves. But consulting service is important to cross-border business investment because of different ways of business thinking. The result is consistent with Howkins, (2007) statement: “The information revolution has been able to accelerate with the advent of many technologies that have increased the rate of transfer of information, a wider group of people understanding this knowledge and with that the opportunity for these people to use their imagination and exploiting its economic value.”

Parry (2013) stated that all around the world, the creative and cultural economy is talked about as an important and growing part of the global economy. Innovation is a core process in driving economic activity. The term innovation has come to be used to loosely describe positive change for economic advantage. This does establish a foundation for the

process; however, the reality is that to gain the benefits of innovation requires a complex mix of external and internal factors in the economic milieu.

The participants here strongly agree with four items for consulting service to boost future business development in foreign countries. China's outward foreign investment have big potential in future. More Chinese firm will develop their businesses in Cambodia, Lao and Myanmar before the year 2020. Chinese business needs more consulting services, based on current trends. Gradziuk (2010) stated that the degree of trading between Thailand and China has become more and more intensive in over the years. Asia is considered to be the world's largest emerging market. As a founding member of ASEAN, Thailand centrally located, serving as 16 transportation hub of strategic significance with strong market radiation.

Phillips (2000) stated that many industries require consulting services. The participants of this study strongly disagree that small Chinese business in Thailand do not need consulting service. Consulting services can help any business work more effectively and sometimes can help solve their operational problem. Whether in restructuring, implementing systems, developing staff, changing procedures, buying new companies, or bringing out new products and services, consultants are being asked to assist in a variety of ways.

From the research we can imply that understanding Thai culture and language is important, because cultural differences present a problem when Chinese investors do business in Thailand. But the Cultural Relations area is least important of consulting services perceived by Chinese investors. Huang (2015) said: "Most experts thought that linguistic differences will affect the decision to choose entry mode of Chinese consulting services in Thailand. Only few experts thought that linguistic differences have a small-scale impact, and are not the decisive factor. The reasons they give is that business transactions tend to be consistent. Language is the basic tool for transmitting information and ideas, and it is a dominant part of the cultural differences." But in this research the cultural relations compared to other areas is the least of their concerns.

The major problems concerning Thailand's logistics system come from the concentration of physical distribution, the reliance on land transportation, the lack of advanced IT systems in logistics, the lack of connection between transport modes, and a lack of logistics personnel (Suthiwartnarueput, 2007).

Limitations of the study

This study specifics samples by purposive sampling and was limited to the Chinese general managers working in Bangkok, Chonburi and Rayong. Thai and Chinese experts performing business between Thailand and China were also purposively sampled. Therefore the sample for study might not represent the population of Chinese run businesses in Rayong province.

Recommendations

Recommendation for consulting companies providing support to Chinese customers are:

- 1) Organizing IT utilization for consulting service.
- 2) Providing government policy in investment.
- 3) Understanding Thai culture and language is important.
- 4) Understanding China's outward foreign investment has a big potential in future.
- 5) Focusing on Thai trade with China has mutual benefit.
- 6) Developing international trade working together effective.

Recommendation for Chinese companies planning to investment business in Royong province are:

- 1) Making creative or moving the necessary new industries to investment in Thailand.
- 2) Improving knowledge and skills of staff and employees.
- 3) Paying more attention to consulting service in industries in other countries.
- 4) Developing different systems in different countries.

References

- Allen, E., & Seaman, C. (2007). Likert scales and data analyses. *Quality Progress*, 40(7), 64-65.
- Feldman, M., Hadjimichael, T., Kemeny, T., & Lanahan, L. (2014). *Economic development: A definition and model for investment*. Retrieved from <https://www.eda.gov/tools/files/research-reports/investment-definition-model.pdf+&cd=1&hl=zh-CN&ct=clnk&gl=th>.
- Gradziuk, A. (2010). Implications of ASEAN-China free trade agreement (ACFTA). *Bulletin*, 8(84), 164-165.
- Howkins, J. (2007). *The creative economy: How people make money from ideas* (2nd ed.). London: The Penguin Press.
- Huang, D. J., & Jarinto, K. (2014). Factors affection the decision to choose entry mode to Thai market by Chinese consulting firms based on the application of Uppsala model. *Journal of global business review*, 16(2), 25-36.
- Meng, J. (2014). *China, Thailand pledge to expand economic, investment cooperation*. Retrieved from http://news.xinhuanet.com/english/china/2014-11/28/c_133821326.htm.
- Montuori, L. A. (2000). Organizational longevity. Integrating systems thinking, learning and conceptual complexity. *Journal of Organizational Change Management*, 13(1), 61-73.
- Parry, M. (2013). *Innovation clusters in the creative economy*. Daejeon Global Innovation Forum, 25-26 September 2013. Retrieved from https://daejeongif.org/_pdf_down.php?ss=14.
- Phillips, J. (2000). *The Consultant's Scorecard: Tracking Results and Bottom-Line Impact of Consulting Projects*. New York, NY: The McGraw-Hill.
- Randolph, A., & Blackburn, R. (1989). *Managing organizational behavior*. Boston: Irwin.
- Shen, H. F. (2012). The Economic Relations between China and Thailand under the context of CAFTA: *An assessment*. *Chinese Studies*, 2(1), 52-60. Retrieved from <http://www.scirp.org/journal/chnstd>
- Suthiwartnarueput, K. (2007). The current situation of Thailand's logistics, 2007. *International Conference on Logistics, Shipping and Port Management 3*, 269-280.
- Trochim, W. M. K. (2006). *Nonprobability sampling*. Retrieved from <http://www.socialresearchmethods.net/kb/samprnon.htm>
- Tsui, W. (2016). *Thailand: Market profile*. Retrieved from <http://emerging-markets-research.hktdc.com/business-news/article/Asia/Thailand-Market-Profile/mp/en/1/1X4UWAWA/1X003IMW.htm>
- Verlander, E. (2012). *The practice of professional consulting: The nature of consulting*. New York, NY: John Wiley & Sons.

Analysis of Chinese Talent Management Strategy: Emphasis on Cao Cao's Competencies from Records of Three Kingdoms

Lu Kuicheng, Burapha University, Thailand
Chalong Tubsree, Retired professor, Chonburi, Thailand
Surin Intayot, Burapha University, Thailand

Abstract: *The objectives of this study were to explore how the leadership attributes of Cao Cao attracted talent, retained the talents, and the method of talent management according to the Three Kingdoms approach. This research used mixed methods for the study. The researcher used document analysis and content analysis for the qualitative part. The researcher read the Records of the Three Kingdoms. The researcher studied and analyzed the leadership attributes of Cao Cao; how did Cao Cao attract talents; how did Cao Cao retain talent at the end of Eastern Han Dynasty. The researcher designed a questionnaire based on the results of the qualitative part. This questionnaire was used for current managers in Qingdao City. The results show the leadership attributes are foresightedness, strategic planning, conscientiousness, strong cognitive ability, and good management skills. The company and organization that wants to attract and retain talent should have a leader that is good at identifying and using the talents; good at emotional control; understands how and when to reward and punishment; creates a good reputation; provides good and clear career paths; assures justice and mercy; and utilizes good payment.*

Keywords: Talent Management Strategy, Human Resource Development, Record of Three Kingdoms, Cao Cao.

Introduction

Twenty-first century competition is for talent compete (Beechler & Woodward, 2009). It is the talent war competition of talents (Cappelli, 2008). Human Resource Management (HRD) is a question of human beings functioning in productive systems, with focus on the resources that humans bring to the success equation—both personal success and organizational success (Swanson & Holton, 2001). In HRD, the selection, development, and application of talents is very important. Talent is the blood and power of the development of an enterprise or organization.

A talent person is a person who has a special ability and this ability could help them to do something well. It distinguishes them from ordinary people. The labor market is constantly changing. The labor market is characterized by safety, increasing mobility, outsourcing, and organizational commitment. Moreover, these characterizations will lead to new challenges for the organization from the organization's perspective. General organizational success will be increasingly attracting and retaining the talent individuals to make sure the organization meets the present and future needs (Florida, 2005; Frank & Taylor, 2004). Every year several colleges and universities graduates are added to the workforce, organizations are spending a lot of resources in order to acquire their needs for talent. However, the number of talent is still inadequate, and this leads to a talent shortage (Beechler & Woodward, 2009). World economic development and the competition between

the various parts of the world are no longer confined to regional competition. It has become competition of country and country. Currently, talent has taken place of natural resources as the world's most important scarce resource.

The first priority of the HR agenda is to attract and retain talent (Frank, et al., 2004). To attract and retain talent is not only the responsibility of the organization, but it is also the responsibility of leadership. People are the most important organizational asset, especially in knowledge-intensive organizations (Alvesson & Kärreman, 2007; Barney & Wright, 1998; Ulrich, 1998). Price Water House Coopers (PWC) published that most CEOs are fearful that a shortage of talent will impede the growth of their companies. Organization needs aligning the process with talent management to achieve sustainable success (Collings & Mellahi, 2009). Leadership is the art of motivating a group of people to act towards achieving a common goal. As a leader, it is not only doing the leadership job well, but also attracting and retaining talents for the company or organization to provide fresh blood and development power for the future of the company or organization.

Attraction and retention of talent into the workplace is important for HRD. Historical experiences and lessons are valuable for people to work and survive in this modern world. Social, historical and political contexts in which HRD emerged has been little explored. Much of the historical work that does exist has uncritically viewed HRD as the latest and most humanistic phase of an ongoing educational process where an organization facilitates the learning of its employees to become increasingly productive and "empowered". Traditional history has taken an anecdotal and evolutionary approach to the emergence of HRD (Schied, 1995). History is the accumulation of time and records what happened in the past. Humans fostered, enriched, and developed different kinds of civilizations in the long course of history. Humans could be sagacious if they sum up past experiences and lessons from history.

With the rapid economic development of East Asia, more and more scholars and experts have begun to focus attention on East Asia. East Asia is attractive to many countries. East Asia during 1950s and 1960s was one part of a relatively poor development of the world. After Japan's first rise of the East Asian economies, China has become the main force of the economic growth momentum in these areas. East Asia is also host to the highest concentration of newly industrialized economies (e.g., Japan, South Korea, Taiwan) found anywhere in the world. Now East Asia has achieved the most profound economic change in history. In the 1990s, East Asia became one of the three core economic zones (along with Europe and North America) (Dent, 2016).

HRD practice has followed the western world philosophy up to the present time. However, current world development has shown a shift from Western world dominance to Eastern world dominance. The emerging of the Chinese economy combined with the current Japanese and Korean economic development can clearly indicate the swing from the West to the East. The people management strategy, from Chinese ancient philosophy namely the Record of Three Kingdoms, could be a good topping stone for studying Eastern people management, specifically talent management. The leadership attributes of Cao Cao could help managers to inspire and remedy their shortcomings. The knowledge of attracting and retaining talent could give precious experience for managers to use, specifically Chinese or other Asian managers. The author proposes a talent management model from Record of Three Kingdoms to use. It is of interest for the researcher to explore the possibility.

Research Questions

The researcher has answered four research questions:

1. What were the leadership attributes of Cao Cao?
2. How did Cao Cao attract talents to work for him?

3. How did Cao Cao retain his talents?
4. What should be the methods of talent management according to the Three Kingdoms approach?

Literature Review

The researcher has reviewed the literature concerning talent management as follows: 1) People Management, 2) Records of the Three Kingdoms, 3) Leadership Attributes, 4) Talent Management

People Management

People management was a science originated in the United States. It is a generic term for plan, organize, command, coordinate, information and control people. It is the process of managing people in organizations in a structured and thorough manner (Need, 2006).

Records of the Three Kingdoms

The Record of the Three Kingdoms is a Chinese historical text which covers the history of the late Eastern Han Dynasty (C.184–220 A.D.) and the Three Kingdoms period (220–280 A.D.). Characterized by its brevity in content, it is widely regarded as the official and authoritative historical text for that period. Prepared by Chen Shou in the third century, the work combines the smaller histories of the rival states of Cao Wei, Shu Han and Eastern Wu in the Three Kingdoms period into a single text.

Leadership Attributes

Leadership is the art of motivating a group of people to act towards achieving a common goal. Leadership is a key construct in organization sciences. It leads to a number of desired outcomes for the individual, group and also organizational levels (Yukl & Van Fleet, 1992).

Each person is different, different people have their own attributes. Leader Attributes can be defined as relatively coherent and integrated patterns of personal characteristics, reflecting a range of individual differences that foster consistent leadership effectiveness across a variety of groups and organizational situations (Zaccaro & Banks, 2004).

Talent Management

The CIPD (2009) defined talent management as the systematic attraction, identification, development, retention and deployment of high potential individuals who are of value to an organization. Both talent management and HRD include about getting the right people in the right place at the right time (Lewis & Heckman, 2006).

Research Method

In this study the researcher started the mixed method with a sequential exploratory strategy by employing a qualitative research method to explore Cao Cao's leadership competencies, then conducting a quantitative method by asking current Chinese managers who were working in companies in China to answer a questionnaire developed from the results of the qualitative study. The quantitative research aimed to confirm the results of the qualitative study done prior. The mixed method could help to clarify the nature of the researcher's intentions. Based on the research objectives: 1) To explore the leadership attributes of Cao Cao; 2) To explore how Cao Cao attracted the talents; 3) To explore how Cao Cao retained the talents; 4) To propose Methods of talent management according to the Three Kingdoms approach

For the Qualitative Research the researcher chose Document analysis and Hermeneutic content analysis for this study. The Hermeneutic content analysis emphasizes the true, objective and comprehensive reflections of the original meaning of the text content. For the Quantitative Research, the researcher chose factor analysis to do this part. The results of the quantitative study were used to assure the qualitative data analysis results which were done.

Data Analysis: Qualitative Part

First, Document Selection and Selection of Content

The researcher selected the book entitled Record of Three Kingdoms which was reviewed by Chen Naiqian (philologist, editor and publisher in China). In this study, the researcher has reviewed Cao Cao's leadership. So, the Book of Wei (volumes 1- 30) was the position of the main reading and content selection. Volumes 31-45 and volumes 46-65 were the record of Shu and Wu's history and character. The researcher has chosen all of the volumes that related to Cao Cao as the content.

Second, Conduct the Open Coding and Do Coding Sheets

The researcher had read and skimmed the written content to identify the context and select the volumes that are related to the leadership attributes of Cao Cao: 1) How did Cao Cao attract the talents? And 2) How did Cao Cao retain his talents.

The researcher set up an open code by reading the selected data. When the researcher established an open code, the content of the selected data was encoded. The content encoded was classified and summed up. The researcher chose the content related to Cao Cao on the basis of research questions and encoded them. The researchers got a total of 168 codes.

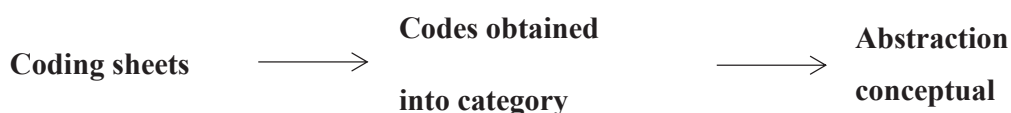
Third, Grouping the Codes Obtained into Categories

The researchers made a preliminary classification of the codes by analyzing the data. The researcher built coding sheets with the information which were noted in the book. The information was analyzed according to the research questions, and the researcher grouped the information. The refinement of the coding categories was done after continuous reading and analysis, the researcher established group names and grouped the codes.

According to the analysis of the content of the data, the researchers grouped the information into preliminary groups as: Suppression of the Yellow turban uprising; Against Dong Zhuo; End the vassal separatist; Against the foreign invasion; the use of legal norms; A decent official; Be good at empowerment; Far sighted political and military capabilities; Good strategic strategy; A good desire for knowledge; Good listening ability; A fair leader; Pay attention to the cultivation of talents; Effective identification and use of talent; and complex characters.

Finally, Abstracting the Conceptual According to the Research Questions

The researchers summarized and collated each group on the basis of the research questions proposed in this paper. Then the researchers came up with the results of the study. An example is the Figure 1.



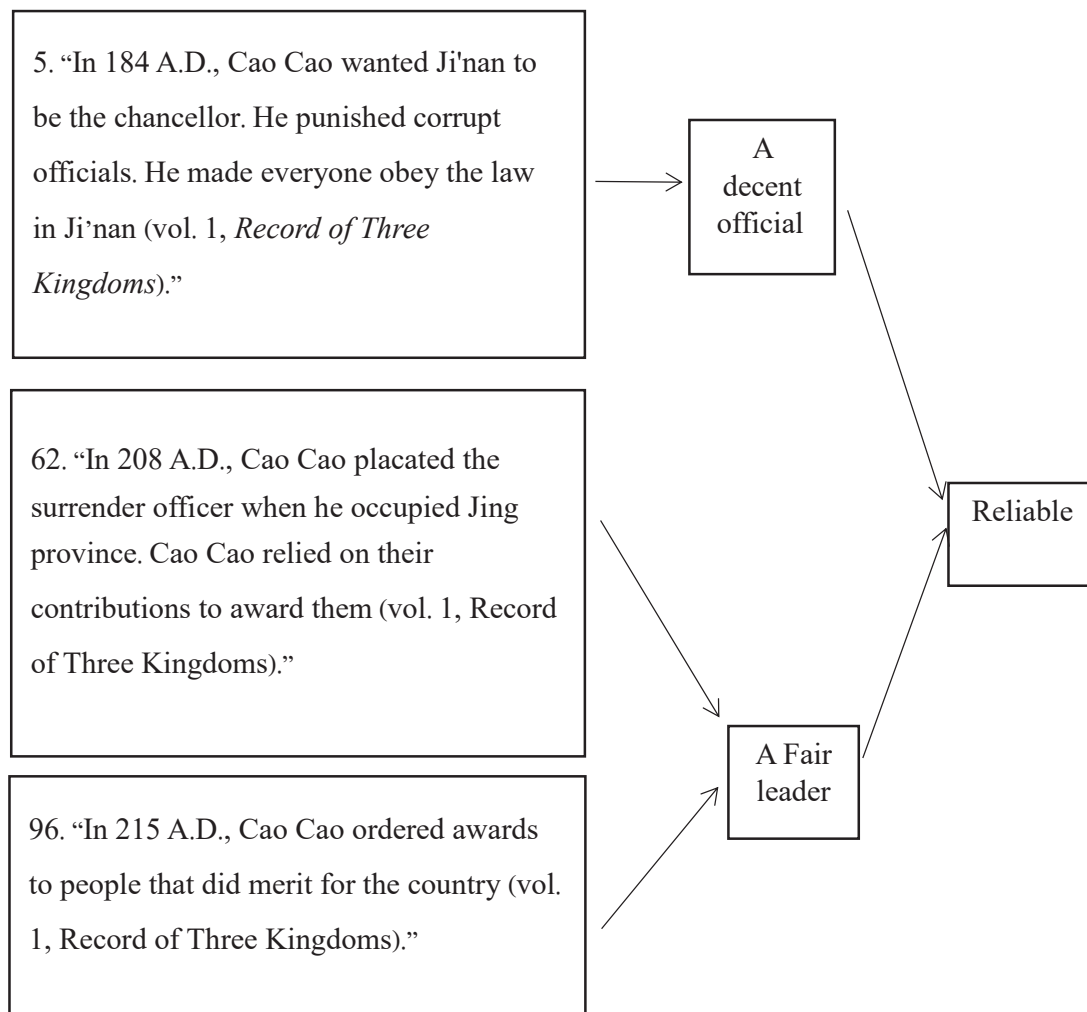


Figure 1 Example of qualitative data analysis

Data Analysis: Quantitative Part

The research collected the quantitative data from the quantitative results to confirm the qualitative results and made the research results generalize-able. The researcher chose 229 managers as the population in Qingdao City, Shan Dong province. The population of the managers was engaged in administrative work in service, manufacturing and production, and merchandising business. The researchers carried out a questionnaire survey of the managers and 158 questionnaires were successfully recovered. According to the Krejcie and Morgan Table, more than 158 respondents were considered valid. The researcher used these 158 discrete data for analysis. The researcher used the following steps for the quantitative data analysis:

First, Established the Data Analysis Method

After the researchers succeeded in recovering the data. The researcher chose the Exploratory Factor Analysis (EFA) to analyze the data. Exploratory factor analysis is committed to finding the intrinsic structure of things. The researchers chose exploratory

factor analysis to determine the fact that the grouping of variable theory is in line with the actual situation, and to ensure the rationality of the results model.

For this study, the researchers carried out an analysis of the collected data with SPSS software. The principal component analysis was to set up a linear equation with a set of variables to explain as much information as possible, that is to say, the maximization of mutation. The main goal was to use fewer components to explain as many variables as possible to simplify the data (Velicer & Jackson, 1990).

Second, Analysis

The role of the project analysis was to analyze the various topics. It kept the topics that can be easily divided into high and low scores. And other areas with low degrees of division were modified or eliminated.

The researcher used project analysis through the analysis of the independent sample in the analysis, whether each item was suitable for exploratory factor analysis.

Finally, Conducted Exploratory Factor Analysis

After determining the suitability of each item, the researcher did an exploratory factor analysis of the data.

Findings and Discussion

Leadership Attributes

1) The leader should have a personality to fit the team. Leadership is the core of the organization. The main role of leadership is to command, lead, guide and encourage subordinates to work hard to achieve their goals (Wayne et al., 1997).

2) The leader should be a foresighted person in a team. Foresight is a necessary ability of a leader. There is a reason for everything. Its origin and direction have a strong logical relationship within it, so the development of things is foreseeable. Foresight is not a groundless reverie as some people think. In fact, it is formed from the experience of the leaders and the experience of the people around them (O'Brien & Robertson, 2009).

3) The leader should be a good strategic planner. The promotion and realization of organizational goals will not happen. For this reason, the leader should put the main energy on the important issues concerning the overall situation (Saaty, 1990). Strategic leadership is the builder of team spirit and organizational culture. A strategic leader must be responsible for the entire team of the organization, and must be committed to creating a team spirit and a good organizational culture (Vera & Crossan, 2004).

4) The leader should be a conscientious person in a team. Mayer (1995) divided leader trustworthiness into three different parts: ability, benevolence and integrity. Ability is the key factor that affects whether a leader is trusted or not. The ability of a leader not only affects the development of the organization, but also affects the personal development of the staff. There are two kinds of people in the world: leaders and followers. From a psychological point of view, a competent leader tends to be respected and attracts a number of people around him. The personal ability of the leader attracts the people around him to serve him (Jackson & Johnson, 2012).

5) The leader should have a strong cognitive ability. Cognitive ability refers to the ability of the human brain to process, store and extract information, that is, the ability of people to build things, the relationship between performance and other things, the power of development, the direction of development and the basic rules. It is the most important psychological condition for the successful completion of activities. The abilities of perception, memory, attention, thinking and imagination are all perceived as cognitive

abilities. Gagné and Deci (2005) proposed three cognitive abilities: speech information, intellectual skills, and cognitive strategies. Cognitive ability is the ability to measure a person's ability to learn and accomplish a job. Cognitive ability affects leadership and plays an important role in leadership.

6) The leader should have good management skills. Organizational management ability is the external comprehensive performance of a person's knowledge, quality and other basic conditions. Modern society is a huge, complex system, and most of the work is often required by a number of individuals. A leader need to be a good listener. The leaders who are good at listening to the correct opinions and suggestions of others can keep the stable development of the organization (Bass, 1985).

Attracting talents & retaining talents

7) The leader that is good at identifying and using the talents can attract and retain talents in his/her group. The leader is good at identifying and using the talent can give full scope to the talents. The ability of identifying people can make the leader effectively understand the strengths of subordinates. This ability has a certain ability to predict and judge the potential of the employees. Through this ability, leaders can make subordinates do what they are good at and create conditions for their advantage. It provides a good platform for employees to develop individuals in the organization (Cerinsek & Dolinsek, 2009).

8) A good leader's emotional management can attract and retain talents. The leader's passion, humbleness and forgiving is the emotional management for the leader. Managers can become leaders of excellence through the control of emotions. Emotion refers to the short and strong reactions of individuals to the relationship between the needs and the objective things. A good leader's emotional management can affect the mood of the employee and affect the performance level in the enterprise or organization (Goleman, 2006).

9) The leader knows how and when to reward and punish to make the talents join his/her group. Reward is an effective incentive. It has been used by the leaders from ancient times to the present. Incentives can mobilize the enthusiasm of the staff, encourage morale and improve the performance of the enterprise. Rewards are the identification of employees' work and personal values (O'Reilly & Chatman, 1986).

10) The leader with his/her renown can make the talents join his/her group. The Halo Effect is one of the qualities of a person, or some characteristic of an item that gives a very good impression. Under the influence of this impression, people will give better evaluation to the other qualities of the person, or the other features of the item. It is a factor that affects interpersonal perception (Nisbett & Wilson, 1977).

11) The leader provides good and clear career paths can retain the talents in the group. A good organizational goal provides a direction for the development of the organization. Enterprises or organizations provide good and clear career paths could make employees feel space for growth and development, so that employees can feel optimistic about their career development prospects, and achieve greater self-satisfaction and job satisfaction (Kompaso & Sridevi, 2010; Scullion & Collings, 2011).

12) The leader is assuring of justice and mercy can retain the talents. As mentioned earlier, justice and mercy are important to leaders. Justice is one important part of organization culture and organization environment. Organizational justice is divided into fairness within the organization and equity outside the organization. Justice within the organization is aimed at employees within the organization. It provides a fair working environment for employees within the organization, which includes fair pay, promotions,

personal development and many other aspects. Justice outside the organization is to give equal treatment to the recruitment and attraction of external talents. Justice for the organization could enhance employees' sense of organizational identity, and improve the image of the organization (Dutton, et al., 1994).

13) The leader utilizing good payment can retain the talents in their work. As an important part of the human resource management system, compensation management is the most concerned content of top management and all employees. It is directly related to the effectiveness of human resource management and the overall performance of enterprises. A flexible and effective salary system plays an important role in motivating employees and maintaining the stability of employees. The establishment of a good salary system will help to retain employees. Employees want their salary to be relative to their performance. The main reason for employees leaving is that the employees do not see the link between salary and performance (Srivastava & Bhatnagar, 2008).

Recommendations

Recommendations for Application

1. As a leader in Chinese history, Cao Cao's leadership had a very important reference to modern managers. The modern leaders can improve their own personal strengths based on their own circumstances and the wisdom of the ancients.
2. Ancient Chinese had a lot of strategies and methods to attract and retain talents. This is an important reference for organizations and the companies. The leader in the organization or the company should attract and retain talent to meet the needs of the organization.
3. With the change of the times, people's thinking has also changed. But following the law of the development of things, it is always inseparable from this rule. The summary and application of past events can help managers avoid mistakes in future work.

Recommendations for Further Study

1. This study introduced Cao Cao's leadership attributes from the Record of Three Kingdoms. The Record of Three Kingdoms recorded other warlords, and each of them utilized different leadership attributes to be successful, e.g., Liu Bei and Sun Quan. It is suggested that there should be an in-depth study on the leadership attributes for other warlords.
2. This study suggests that Cao Cao attracted his talent by promising a good future, but the researcher has not explored the details of how he promised a good future to his talent. It is suggested that there should be an in-depth study on how he promised a good future.
3. Cao Cao had good management skills for managing his talent and he was good at identifying and utilizing his talent in his organization. The researcher did not explore how he was good at identifying the talents and utilizing the talents in his organization. There should be an in-depth study on how Cao Cao could identify and utilize good and credible talents in the organization.

References

- Alvesson, M., & Kärreman, D. (2007). Unraveling HRM: Identity, ceremony, and control in a management consulting firm. *Organization Science*, 18(4), 711-723.

- Barney, J. B., & Wright, P. M. (1998). On becoming a strategic partner: The role of human resources in gaining competitive advantage. *Human Resource Management*, 37(1), 31-46.
- Bass, B. M. (1985). Leadership: Good, better, best. *Organizational dynamics*, 13(3), 26-40.
- Beechler, S., & Woodward, I. C. (2009). The global "war for talent". *Journal of International Management*, 15(3), 273-285.
- Cappelli, P. (2008). *Talent on demand: Managing talent in an age of uncertainty*. Boston, MA: Harvard Business School Press.
- Cerinsek, G., & Dolinsek, S. (2009). Identifying employees' innovation competency in organisations. *International Journal of Innovation and Learning*, 6(2), 164-177.
- CIPD. (2009). *Talent management: Factsheet*. London: CIPD.
- Collings, D. G., & Mellahi, K. (2009). Strategic talent management: A review and research agenda. *Human Resource Management Review*, 19(4), 304-313.
- Dent, C. M. (2016). *East Asian regionalism* (2nd ed.). Oxon: Routledge.
- Dutton, J. E., Dukerich, J. M., & Harquail, C. V. (1994). Organizational images and member identification. *Administrative Science Quarterly*, 39(2), 239-263.
- Florida, R. (2005). *The flight of the creative class*. New York, NY: Harper Business.
- Frank, F. D., & Taylor, C. R. (2004). Talent management: Trends that will shape the future. *Human Resource Planning*, 27(1), 33-41.
- Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, 26(4), 331-362.
- Goleman, D. (2006). *Emotional intelligence*. New York, NY: Bantam Books.
- Jackson, E. M., & Johnson, R. E. (2012). When opposites do (and do not) attract: Interplay of leader and follower self-identities and its consequences for leader-member exchange. *The Leadership Quarterly*, 23(3), 488-501.
- Kompaso, S. M., & Sridevi, M. S. (2010). Employee engagement: The key to improving performance. *International Journal of Business and Management*, 5(12), 89-96.
- Lewis, R., & Heckman, R. (2006). Talent management: A critical review. *Human Resource Management Review*, 16(1), 139-154.
- Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review*, 20(3), 709-734.
- Need, W. C. D. H. P. (2006). *Human resource management: Gaining a competitive advantage*.
- Nisbett, R. E., & Wilson, T. D. (1977). The halo effect: Evidence for unconscious alteration of judgments. *Journal of Personality and Social Psychology*, 35(4), 250-256.
- O'Brien, E., & Robertson, P. (2009). Future leadership competencies: From foresight to current practice. *Journal of European Industrial Training*, 33(4), 371-380.
- O'Reilly, C. A., & Chatman, J. (1986). Organizational commitment and psychological attachment: The effects of compliance, identification, and internalization on prosocial behavior. *Journal of Applied Psychology*, 71(3), 492-499.
- Saaty, T. L. (1990). *Decision making for leader: The analytic hierarchy process for decisions in a complex world*. Pittsburgh, PA: RWS.
- Schied, F. M. (1995). "How did humans become resources anyway?" *Him and the politics of learning in the workplace*. In Proceedings of the 26th Annual Adult Education Research Conference (pp. 287-292). Alberta: University of Alberta, Edmonton.
- Scullion, H., & Collings, D. (2011). *Global talent management*. London: Routledge.

- Srivastava, P., & Bhatnagar, J. (2008). Talent acquisition due diligence leading to high employee engagement: Case of Motorola India MDB. *Industrial and Commercial Training*, 40(5), 253-260.
- Ulrich, D. (1998). A new mandate for human resources. *Harvard Business Review*, 76(1), 124-134.
- Velicer, W. F., & Jackson, D. N. (1990). Component analysis versus common factor analysis: Some issues in selecting an appropriate procedure. *Multivariate behavioral research*, 25(1), 1-28.
- Vera, D., & Crossan, M. (2004). Strategic leadership and organizational learning. *Academy of Management Review*, 29(2), 222-240.
- Wayne, S. J., Shore, L. M., & Liden, R. C. (1997). Perceived organizational support and leader-member exchange: A social exchange perspective. *Academy of Management Journal*, 40(1), 82-111.
- Yukl, G., & Van Fleet, D. D. (1992). *Theory and research on leadership in organizations*. In M. D. Dunnette & L. NI. Hough (Eds.), *Handbook of industrial and organizational psychology* (2nd ed., Vol. 3, pp. 147-197). Palo Alto, CA: Consulting Psychologists.
- Zaccaro, S. J., Kemp, C., & Bader, P. (2004). *Leader traits and attributes*. In J. Antonakis, A. Cianciolo, & R. Sternberg (Eds.), *The nature of leadership* (pp. 101-124). Thousand Oaks, CA: Sage.

Competencies Needed for Career Growth of the Young Chinese to Work for Transnational Companies Investing in Chonburi Province, Thailand

Li Zhuoheng, Burapha University, Thailand

Nart Nontasak, Retired Professor, Chonburi, Thailand

Ronald Markwardt, Retired Professor, Chonburi, Thailand

Abstract: *This study investigated and ranked competencies needed for the young Chinese who are planning to be professionals in transnational companies investing in Thailand. In order to respond to the objectives, the researcher employed the Iceberg Model of Competency and a quantitative approach by using structured interviews of 9 senior committee members of The Thai Chinese Association and questionnaire of 73 committee members of The Thai Chinese Association. The investigation revealed that the general competencies which the young Chinese who want to work for transnational companies investing in Chonburi Province are expected to have. These are: 1) the skills in communication, information technology, leadership and teamwork, 2) the knowledge in studying culture of other countries, 3) developing positive attitudes and high responsibilities and 4) maintaining self-motivation in working under pressure. The results also indicated that the rank of importance for needed competencies of young Chinese, from more to less were: 1) positive attitude, 2) good communication and interpersonal skill, 3) self-motivation, 4) studying culture of other countries, 5) high responsibilities and 6) working under pressure.*

Keywords: Young Chinese; Competency; Career Growth; Transnational Companies

Introduction

In today's business environment economies have become globalized and the number of transnational organizations has been increasing rapidly all over the world (Luo, 2014). Organizations already know the importance of globalization and many companies are expanding beyond their national borders and entering novel markets. Transnational companies need people with specific competencies and talents to overcome the problems of doing business in new places. In today's globalized world, the competitiveness of corporate advancement is dependent on talent.

Thailand is a middle-income developing country with liberal national economic policy which is export-oriented. Thailand has an open market economic policy and has encouraged foreign investment since 1961. An increasing number of transnational companies are planning to invest in Thailand. Chonburi Province, located to the southeast of Bangkok, and is the first area of industrial developments of Thailand (Su, 2008). Office of the Board of Investment (BOI) supports transnational companies investing in Chonburi Province at the industrial estates.

With the rapid development of bilateral relations between China and Thailand, the two countries continue to strengthen cooperation in the field of education. There is an upward trend in China for the number of Chinese students come to Thailand to study. According to Economic and Commercial Counsellor's Office of the Embassy of the People's Republic of

China in the Kingdom of Thailand statistics (2015), it is predicted that Chinese students coming to Thailand could reach 30,000 people in 2016 and continue to keep the highest number of foreign students, and about 20% of Chinese students will stay in Thailand after graduation. As more young Chinese choose to work or do business after graduation in Thailand, and so improving their ability to keep competitive becomes the biggest pressure for young Chinese, so, the young Chinese intention to improve their competencies will be discussed in this paper. This study reviews the competencies needed for the young Chinese to be professional for transnational companies in Chonburi Province, Thailand.

Research Objectives

This study aimed to investigate the competencies needed and rank the importance of those competencies needed for the young Chinese planning to be professional for transnational companies in Chonburi Province. Thus, the research objectives were as follows:

1. To investigate competencies needed for the young Chinese planning for career growth in transnational companies investing in Chonburi Province.
2. To explore the rank of competencies needed for the young Chinese to work for transnational companies investing in Chonburi Province.

Research Questions

The following research questions were postulated:

1. What were competencies needed for the young Chinese planning for career growth in transnational companies investing in Chonburi Province?
2. What was the rank of competencies needed for the young Chinese to work for transnational companies investing in Chonburi Province?

Benefits of the Study

The results of the study can provide useful information for young Chinese who want to work for transnational companies investing in Chonburi Province, Thailand. The research can help the young Chinese to understand which competencies are needed to work for transnational companies investing in Chonburi Province and to improve their competencies to be professionals in transnational companies investing in Thailand.

Literature Review

Definition of Young Chinese

The word “youth” does not offer distinguished boundaries. Different historical conditions, environment, economy, culture and the social system will produce different views to the definition. Biology and medicine are based on physical development to identify young or not; psychology divides the young and children based on traits of character, cognitive competency and social attitude; sociology divides the age of young from the socialization process, social responsibility and independent living skills. In this paper we are interested in people beginning their work careers, so the definition of the young people through the early development in China includes anyone 18 to 29 years old (Xi & Xia, 2006).

Career Growth

Career growth is important to all people, but the definition of career success takes on different meanings for everybody. Grobler, Warnich, Carrell, Elbert, and Hatfield (2006)

defined career growth is the process of designing and implementing targets, plans and strategies that enable human resource professionals and managers to satisfy workforce needs and allow individuals to achieve to the career objectives. To be successful in the career of young people, the young have to balance of relationship between the desire for career growth and the attitudes toward to current organizations. In more detail career growth is define as the process by which individuals develop insight into themselves and environment, formulate career goals and strategies, and acquire feedback regarding career progress (Eby, 2009).

Competency

A competency may include skill, job attitude, and knowledge which is reflected in job behavior that can be observed, measured and evaluated. Rankin (2004) defined competencies as, in essence, indicators of expected performance that, taken as a whole, should provide users with the complete picture of the most valuable behaviors, values and tasks required for their organization's success. Cooper and Graham (2001) identified 57 core competencies needed to be successful; their list became an integral knowledge base on identify competencies. Their study also compared the perceptions of each group toward the level of importance of each competency. This study follows with the 57 core competencies and the Iceberg Model (Spencer & Spencer, 1993). However a review of job advertising in newspapers to found requests for six of the competencies: good communication and interpersonal skill, studying culture of other countries, high responsibilities, positive attitude, working under pressure, and self-motivation. These six competencies were used for the questionnaire.

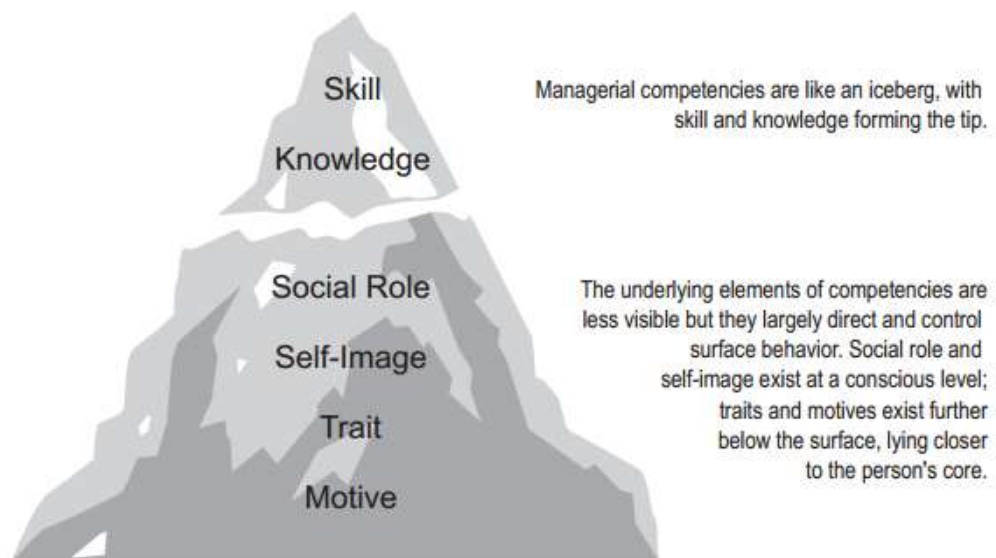


Figure 1 The iceberg model of competencies

Iceberg Model. Spencer & Spencer (1993, p.3) proposed the “Iceberg Model” to divide underlying personal characteristics which caused behaviors and performance in a job into six categories.

1. Skills are the things that people can do well, such as computer programming.
2. Knowledge is what a person knows about a specific topic, such as a computer language.

3. Social Role is the image that an individual displays in public; it represents what he or she thinks is important. It reflects the values of the person, such as being a diligent worker or a leader.

4. Self-image is the view people have of themselves. It reflects their identity, such as seeing oneself as an expert.

5. Traits are enduring characteristics of people. They reflect the way in which we tend to describe people (e.g., “she is reliable” or “he is adaptable”). These characteristics are habitual behaviors by which we recognize people.

6. Motives are unconscious thoughts and preferences, which drive behavior because the behaviors are a source of satisfaction (e.g., achievement drive and wanting to do better).

Transnational Companies

A transnational corporation (TNC) is a body that has an integrated philosophy encompassing domestic and global operations. The term is interchangeably used with transnational enterprise (MNE) or transnational company (TNC) (Hofstede, 1997). With the fast development of the domestic economies, many companies are facing a global challenge. The companies not only face the nation competitor, but also face international competitor (Porter & McKibbin, 1998). An increasing number of transnational companies are planning to invest in Thailand, such as China, Korea, Japan and so on. Transnational companies choose Thailand as their target overseas land for investing by considering the changing global economic circumstance and strategic requirements in the future (Mai, 2013). Thailand is a popular choice for transnational companies to invest. Thai government has policies to develop Chonburi on the Eastern Seaboard into a new economic zone. The Board of Investment Office support transnational companies investing in Chonburi Province at the industrial estates.

Methodology

Population

The data was collected from committee members of Thai Chinese Association in Bangkok. There were approximately 90 committee members in the population for this study. There were 9 senior committee members included in the approximately 90 committee members itself.

Sample

The participants of this study were committee members of Thai Chinese Association in Bangkok. Krejcie and Morgan (1970) came up with a table for determining sample size for a given population for easy reference.

The sample size can be determined from the table. The table shows that a good sample of 90 people would be 73 responses for questionnaire. The participants in structured interview of 9 senior committee members of Thai Chinese Association were selected by purposive sampling. The 9 senior committee members were the whole of the senior committee members in Thai Chinese Association.

Research Instruments and Data Collection

This study used the questionnaire and structured interview to collect data. Four experts were requested to evaluate each item in the questionnaire and structured interview questions on the appropriateness of the content areas. The researcher revised the questionnaire and structured interview questions according to suggestions from the experts.

This study used content analysis for the questionnaire and structured interview data. SPSS program was used for survey data. Respondents' answers were counted and ranked. Responses were saved on the researcher's personal computer or laptop. Data were entered in to SPSS for review by advisors and for analysis.

1. Questionnaires

The questionnaire was analyzed by using SPSS to determine the frequency, percentage and rank. The 15 items in the questionnaire were designed based on the information from the literature review and related research about competencies needed. The Chinese version of the questionnaire was sent to a Chinese expert. The Chinese expert reviewed the accuracy of the Chinese translation of the questionnaire.

2. Interviews

The interviews data analysis was conducted with the data obtained from structured interviews. The 3 questions in the structured interviews were designed based on the information from the literature review and related research about competencies needed. The recorded data from the interviews were translated, transcribed and categorized (Miles & Huberman, 1994).

Results

Data form the Structured Interviews

For the first objective: *"to investigate competencies needed for the young Chinese planning for career growth in transnational companies investing in Chonburi Province."*

1. What kind of competence do you think is important for young Chinese planning for career growth in transnational companies investing in Chonburi Province? And why?

Chinese culture is different from other cultures, so you must study behavior, habit and culture of other countries when you might work and live in foreign. If you don't understand Thai culture then you can't do anything in Thai. Leadership is a necessary management skill for any position and any management person. It can help young Chinese get a huge upside potential in the job. Every employer likes employee teamwork. Teamwork is a necessary condition for the success, if young Chinese understand teamwork so that they will work very well with a team. Employers don't like individual heroism, because it can't be successful.
(P1)

Computer skill is a basic skill in the work. Now, almost all the work needs to use computer to do anything. If you don't understand computers then you can't to do any job. Computers are present everywhere in our lives. Good communication skills can improve to the relationship between you and others, let others think you are not strange. We can talk with others to understand the people's hobbies, personalities and so on. Culture includes language, religious beliefs, behavior, customs and so on. Language is an important tool when you study and work in a foreign country. When you understand the culture of Thailand that it can expand your knowledge, help you make good communication and business cooperation with the local peoples and help you to get a better life in Thailand. (P3)

Young Chinese study Thai culture for the benefit of their communicate with locals, so they can be integrated into the local life and respect the local customs, culture and religion, to think from point of view of the locals and is good for work. If young Chinese want to get a good career they need leadership skill, their business, task or their employee to be successful. Enhance the leadership skill by maintaining a positive attitude and improving communication

skill. With a positive attitude you are looking at the bright side of life. Communication is also a core competency for leadership. (P5)

To summarize, it is clear that the needed competencies are 1) Communication skill, 2) Leadership skill, 3) Teamwork and 4) Information technology skill.

2. Why do you think the young Chinese have to develop themselves to work in transnational companies investing in Chonburi Province?

Young Chinese who improve their competency can help to better adapt to life, finish the work, to improve work efficiency and realized value to get a better living environment, and reduce the pressure from the work, life and family. (P5)

Recently, Thailand is more popular in China, and Thailand is near to China, so more and more Chinese go to study and work in Thailand. There are Chinese competition will be more and more powerful, in a highly competitive market and this will make a lot of young people lose their own personality, so they must enhance their competency and personal charm to stand out in the highly competitive environment. (P6)

No matter who or where, we need to increase our competency and keep our value, something like this we don't be eliminated by the society. No matter our work or life, we like make friends or to do business with people who have strong competencies than you, if you don't increase your competencies that you can't get established in society. (P7)

Working for transnational companies needs skill for work and social roles, the participants ideas for development were 1) Young Chinese need to enhance their competencies and personal charm to keep up with the development of society and stand out in the highly competitive environment; 2) Development work efficiency and realized value in further are necessary and 3) Environment, life and family are the foundation for competencies improvement.

3. How can young Chinese plan and develop the competencies needed for career growth to work in transnational companies investing in Chonburi Province?

To set a goal that you want and the firm for which you work the goal for work, life and self. Through the accumulate knowledge and experience to achieve the goal. (P2)

Self-knowledge that you want to be what kind of person, and make an assessment to yourself to summarize the advantage and disadvantage and keep the advantages and improve the disadvantages. (P6)

Set a goal for work, life and self and finding the approach and preparing to face every challenges. (P8)

Finding individual strengths and weaknesses. And find a job that you like, and try hard to work. (P9)

For planning and developing themselves, the young Chinese had to 1) set a goal for work, life and self; 2) make a career planning; and 3) develop a self-assessment.

More Data form the Questionnaires

For the second objective: *"to explore the rank of competencies needed for the young Chinese to work for transnational companies investing in Chonburi Province."*

Table 1 The importance of rank orders of the competencies

Competencies	(N=73)		
	Frequency	Percent (%)	Rank
Good communication and interpersonal skills	208	19.00	2
Studying culture of other countries	172	15.71	4
High responsibilities	162	14.79	5
Positive attitude	229	20.91	1
Working under pressure	149	13.61	6
Self-motivation	175	15.98	3
Total		100	

Table 1 indicates that positive attitude rank is first and received 20.9% of choices; good communication and interpersonal skills is second and accounted for 19.0% of all choices; rank of self-motivation is 3rd and received 16.0%; studying culture of other countries is 4th and shared at 15.71%; rank of high responsibilities is 5th and share at 14.79%; rank of working under pressure is 6th being chosen as more important in 13.6% of choices.

Conclusions and Discussions

In conclusion, for planning and developing themselves, the young Chinese had to 1. Set a goal for work, life and self; 2. Make a career planning; and 3. Develop a self-assessment.

The results indicates that the rank of importance for competencies needed of young Chinese were 1. Positive attitude, 2. Good communication and interpersonal skill, 3. Self-motivation, 4. Studying culture of other countries, 5. High responsibilities, and 6. Working under pressure.

Young Chinese need a healthy attitude to face the work and life abroad. Attitude is the key factor for everything. This result was consistent with Zhao (2013) that the attitudes and behaviors of employees affect not only their ability to effectively implement the project, but also the quality of their own lives while they are abroad. Ahmed (2011) states that we start seeing things more positively enabling us to handle workplace problems more easily, increasing and enjoying productivity; and better health. A positive attitude enhances leadership skills and helps in teamwork.

Good communication and interpersonal relationships are closely related to career. Abbe (2008) stated that building interpersonal relationships across cultural boundaries has implications for overall mission success, even after the particular individual has left the area

of operations. Hogan (2004) states that language is another aspect of communication and it is necessary.

Self-motivation is important when young Chinese seek to work for transnational companies investing in Chonburi Province. Self-motivation can improve their self-confidence and help them relieve the pressure of work and live in Thailand. Sean (2010, p.9) also suggested that being motivated to meet our goals means that we are able to improve our self-confidence; enhance our self-discipline; set examples for ourselves of what we can achieve; challenge ourselves to stretch beyond our perceived limits; reward ourselves for reaching our goals; and enjoy the recognition or perks associated with reaching our goals.

Young Chinese need to learn local culture and language from books, language classes and make friends with locals. Cultural competency is a concept that evolved from earlier ideas of cultural sensitivity and awareness. Williams (2001, p.4) argues that cultural competency enables individuals and organizations to work or respond effectively across cultures in a way that the values, beliefs, traditions and customs are recognized. Earley (2002, p.279) states that cultural knowledge and awareness are necessary but not sufficient for performing effectively in a cross-cultural setting, because an individual must also have the motivation to use the knowledge available. Logue (2001) stated that learning the native language, at least enough for day-to-day activities, can greatly increase interaction, partnership building, and trust.

Responsibility is the principle ability for young Chinese to work for transnationals companies investing in Chonburi Province. This result was consistent with Jenkins (2008) when the employee feels personally responsible for her job performance, she shows up on time, puts in her best effort and completes projects to the best of her ability.

When the pressure coming that young Chinese can control emotional response, stay focused and maintain work/life balance. Ivancevich (2008, p.224) defined work pressure as the programmed response of the individual towards a group of threats called stressors. According to Brown and Harvey (2006) that the interaction between the individual and the environment which as a result may affect his mental and physical conditions.

Recommendations

Recommendations for the young Chinese studying and planning to work for transnational companies.

1. Communicating with the local people to work in Thailand or any countries.
2. Studying culture of other countries by reading, listening, speaking and practicing other languages. It helps to understand the characteristics of local culture.
3. Being responsible to understand work, strengths, personal advantages and disadvantages.
4. Having a positive attitude to find out about work or life, then adaptation and submission to in the environment.
5. Working under pressure help young Chinese make a reasonable plan, to understand the importance of work and which task is the most important work. To improve the efficiency in the work, make it effective and rapidly complete the work. To communicate with work teams and be rational to allocate resources, complete the work in a planned and orderly manner.
6. Gaining self-motivation and leadership helping young Chinese get a huge upside potential to work for transnational companies.

References

- Abbe, A., Gulick, L. M. V., & Herman, J. L. (2008). *Cross-cultural competence in army leaders: A conceptual and empirical foundation*. New York: Army Research Institute for the Behavioral and Social Sciences.
- Ahmed, B. (2011). Attitude at work-place. *The Journal of Human Resource Management Academic Research Society*, 1(1), 16-19.
- Brown, D. R., & Harvey, D. (2006). *An experimental approach to organizational development*. New Jersey, NJ: Upper Saddle River.
- Cooper, A., & Graham, D. (2001). Competencies needed to be successful county agents and county supervisors. *Journal of Extension*, 39(1), 56-58.
- Earley, P. C. (2002). *Redefining interactions across cultures and organizations: moving forward with cultural intelligence*. In B. Staw, & R. M. Kramer (Eds.), *Research in organizational behavior* (pp. 271-299). Oxford: Elsevier.
- Eby, A. T. (2009). A cross-level investigation of the relationship between career management practices and career-related attitudes. *Growth & Organization Management*, 30(6), 565-596.
- Economic and Commercial Counselor's Office of the Embassy of the People's Republic of China in the Kingdom of Thailand (2012). *Economic situation of Thailand*. Retrieved from <http://th.mofcom.gov.cn/article/ddgk/zwjingji/201302/20130200032106.shtml>.
- Grobler, P., Warnich, S., Carrell, M. R., Elbert, N. F., & Hatfield, R. D. (2006). *Human resource management in South Africa* (3rd ed.). Cape Town: Thompson Learning.
- Hofstede, G. (1997). *Culture and organizations: Software of the mind*. New York, NY: McGraw-Hill.
- Hogan, R., & Kaiser, R. B. (2004). *What are we know about leadership?* Review of General Psychology, 56, 899-927.
- Ivancevich, J. M., Konopaske, R., & Matteson, M. T. (2008). *Organizational behavior and management* (8th ed.)(pp.224-227). New York, NY: McGraw Hill Irwin.
- Jenkins, A. (2008). *5 factors that demonstrate a strong work ethic*. Retrieved from <http://www.smallbusinesschron.com/managingemployees/employeemorale>
- Krejcie, R., & Morgan, W. D. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30, 608.
- Logue, A. (2001). Trainer: Will travel. *Training and Development*, 55(4), 46-49.
- Luo, L. (2014). *Cross-cultural competences required for department managers of selected Chinese transnational companies in the Amata City Industrial Estate of Thailand*. Master's thesis, Human Resource Development, Faculty of Education, Burapha University.
- Mai, Y. J. (2013). *Job satisfaction development for supervisors in selected Chinese transnational corporations in Thailand*. Master's thesis, Human Resource Development, Faculty of Education, Burapha University.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). New York, NY: Sage.
- Porter, L., & McKibbin, L. (1998). *Future of management education and development: Drift or thrust into the 21st century?* New York, NY: McGraw-Hill.
- Rankin, N. (2004). *The new prescription for performance: The eleventh competency benchmarking survey, competency & emotional intelligence benchmarking* (5th ed.). London: IRS.



- Sean, M. (2010). *MTD training: Motivation skills* (pp. 8-10). New York, NY: Ventus.
- Spencer, L., & Spencer, M. (1993). *Competence at work: Models for superior performance* (pp. 2-4). New York, NY: John Wiley & Sons.
- Su, L. (2008). *The management of employee turnover for positive image of selected transnational companies in Chonburi Thailand*. Master's thesis, Human Resource Management, Faculty of Management and Tourism, Burapha University.
- Williams, B. (2001). Accomplishing cross-cultural competence in youth development programs. *Journal of Extension*, 39(6), 1-6.
- Xi, J. Y., & Xia, Y. (2006). Introduction to Chinese Youth. *Journal of Chinese Youth in Transition*, 1(1), 79-105.
- Zhao, N. (2013). *Developing competencies for students wishing to work for multinational corporations in the ASEAN countries*. Master's thesis, Human Resource Development, Faculty of Education, Burapha University.

Career Development Plan in an Organization: A Selected Case Study of an Automotive Parts Company in the Eastern Seaboard Industrial Estate, Rayong Province, Thailand

Benyatif Ruangsaeng, Burapha University, Thailand

Paratchanun Charoenarpornwattana, Burapha University, Thailand

Chalerm Sri Chantarathong, Retired Professor, Chonburi, Thailand

Abstract: *The objectives of this qualitative research with a grounded theory approach was to investigate the Career Development Plan in a selected study of an automotive parts company in the Eastern Seaboard Industrial Estate, Rayong province, Thailand. Twenty-five participants were studied using formal in-depth interviews and semi-structured interviews. Based on manual coding, two main categories emerged, which are “Focus on development”, and “Career Planning”. In conclusion, this study made a significant contribution to our knowledge and demonstrates that a Career Development Plan is a very important factor for work decisions and employee development in an organization.*

Keywords: career development plan, career planning, career development activity, human resource development

Introduction

At present, developments on the labor market concerning more change and flexibility put increasing demands on employees to take responsibility for performing their jobs and managing their careers (Segers & Inceoglu, 2012). Understanding career development (CD) is also important today due to the changing workforce. Employees leave their organizations for many reasons, but the question remains if some areas of employee dissatisfaction are more likely to result in employer turnover than others. For instance, there are studies that have focused on a myriad of factors that may contribute to career advancement opportunities (Bosse, 2011; Hodgins et al., 2010; Shahzad et al., 2011; Wang et al., 2010), and career development services (Conlon, 2004; Upton, 2006).

When organizations look to HR to provide solutions, they do what they think is best rather than what has been suggested by research to be effective. However, it has been suggested by research that provision of career development services can increase career commitment and can significantly result in lowering turnover intention (Conlon, 2004).

However, few studies have been carried out to elucidate this relationship. Fewer companies are providing CD services as they expect employees to autonomously manage his/her own career (Conlon, 2004). HR as a discipline has continued to evolve, but study involving provisions of career development services has been overshadowed by other areas of HR (McDonald & Hite, 2005). This lack of attention to the effectiveness of company-provided career development services makes us unable to determine the best way to plan careers in an era of boundaryless career options (Arthur, 1994).

Research Objectives

To investigate the Career Development Plan in a selected case study of an automotive parts company in the Eastern Seaboard Industrial Estate, Rayong province, Thailand.

Research Questions

What should be the Career Development Plan in the organization?

Literature Review

Career Development (CD)

Career Development (CD) is “an ongoing process by which individuals progress through a series of stages, each of which is characterized by a relatively unique set of issues, themes, and tasks (DeSimone and Werner, 2012, p. 400)”. A Career Development Plan (CDP) is a written list of the short and long-term goals that employees have pertaining to their current and future jobs, and a planned sequence of formal and informal experiences to assist the employees in achieving their goals. These goals should be linked to each person's strengths and potential. (Sullivan & Baruch, 2009) CD involves two distinct processes: career planning and career management.

Models of Career Development

Just as it is possible to depict adult development as progressing through a series of stages, it is also possible to depict career development in this way. DeSimone and Werner (2012) proposed two approaches to modeling career development: one traditional and the other more contemporary.

Traditional Models of Career Development

Many models of career development have been offered to explain the sequence of stages that adults progress through during their work lives (Hall & Nougaim, 1968). These models emphasize the notion of an orderly series of career stages linked to age ranges, place the career into the context of a person's life, and contain overlapping concepts. Given the similarities among these models, (Greenhaus, Callanan & Godshalk, 2010) combined these approaches into a four-stage model, each stage is described below.

Stage 1: Occupational and Organization Choice: Preparation for Work (Age 0-25). Major tasks are develop occupational self-image, assess alternative occupations, develop initial occupational choice, pursue necessary education to obtain job offer(s) from desired organization(s), select appropriate job based on accurate information. **Stage 2:** The Early Career (Age 25-40). Major tasks are learn job, learn organizational rules and norms, fit into chosen occupation and organization, increases competence, pursue The Dream. **Stage 3:** The Midcareer (Age 40-55). Major tasks are reappraise early career and early adulthood, reaffirm or modify The Dream, make choices appropriate to middle adult years, remain productive in work. **Stage 4:** The Late Career (Age 55-Retirement). Major tasks are remain productive in work, maintain self-esteem, and prepare for effective retirement.

Other View of Career Development. Certainly, the trends in globalization, demographics, technology (both information and otherwise), the changing employment relationship, team-based work, and new organizational structures significantly impact the way careers are viewed. In light of this changing landscape, some question the relevance of the traditional notion of career stages (Hall, 1986). These other views of career development

share the notion that individuals (and organizations) must be flexible and adaptable to succeed in a changeable and uncertain environment. Two sets of ideas illustrate this line of thinking. Distinctly different sets of motives underline each of the four concepts” (Brousseau et al., 1996). The four career concepts are:

Linear – a progression of movement up an organizational hierarchy to positions of greater responsibility and authority; motivated by desire for power and achievement; variable time line; in the United States, this has been the traditional view of a “career”

Expert – a devotion to an occupation; focus on building knowledge and skill within a specialty; little upward movement in a traditional hierarchy, more from apprentice to master; motivated by desire for competence and stability; rooted in the medieval guild structure

Spiral – a lifelong progression of periodic (seven to ten years) moves across related occupations, disciplines, or specialties; sufficient time achieve a high level of competence in a given area before moving on; motives include creativity and personal growth

Transitory – a progression of frequent (three to five years) moves across different or unrelated jobs or field; untraditional; motives include variety and independence (Larsson et al., 2007)

Greenhaus, Callanan and Godshalk (2010) argued that these four concepts can be combined to form a wide variety of hybrid concepts. They stated that the traditional model of career management has favored individuals with a linear or expert career concept, but that the shift going on in the world now tend to favor those with a transitory or spiral career concept. The challenge to organizations and individuals, then, is to conduct career management in what they call a pluralistic fashion that matches the organization’s strategy and career culture with individual’s career concepts.

Career Planning and Career Path

The practice of organizational career planning involves matching an individual’s career aspirations with the opportunities available in an organization. Career pathing is the sequencing of the specific jobs that are associated with those opportunities. If career management is to be successful, the individual and the organization must assume an equal share of the responsibility for it. The individual must identify his or her aspirations and abilities and, through counseling, recognize what training and development are required for a particular career path. The organization must identify its needs and opportunities and, through workforce planning, providing the necessary career information and training to its employees.

Career Planning, DeSimone and Werner (2012) defined Career planning as “a deliberate process of (1) becoming aware of self, opportunities, constraints, choices, and consequences; (2) identifying career related goals; and (3) programming work, education, and related developmental experiences to provide the direction, time, and sequence of steps to attain a specific career goal”. Career planning involves activities performed by an individual, often with the assistance of counselors and others, to assess his or her skills and abilities in order to establish a realistic career plan. Career management involves taking the necessary steps to achieve that plan, and generally focuses more on what an organization can do to foster employee career development. There is a strong relationship between CD and T&D activities. Career plans can be implemented, at least in part, through an organization’s training programs. **Career Pathing**, Mondy and Noe (2005, p. 237) proposed career path as “a flexible line of movement through which an employee may during employment with a company.” Following an established career path, the employee can undertake career

development with the firm's assistance. From a worker's perspective, following a career path may involve weaving from company to company and from position to position as he or she obtains greater knowledge and experience. The result of career planning is the placement of an individual in a job that is the first of a sequential series of jobs. From the perspective of the organization, career paths are important in workforce planning. An organization's future workforce depends on the projected passage of individuals through the ranks. From the perspective of the individual, a career path is a sequence of jobs that he or she desires to undertake in order to achieve personal and career goals. Although it is virtually impossible to completely integrate organizational and individual needs in the design of career paths, systematic career planning has the potential for closing the gap between the needs of the individual and the needs of the organization (Rifkin, 1996).

Research Design

The researcher employed qualitative research as the research design and employed grounded theory as the research strategy. "A Qualitative approach is one in which the inquirer often makes knowledge claims based primarily on constructivist perspectives (i.e., the multiple meanings of individual experiences, meaning socially and historically constructed, with an intent of developing a theory or pattern), or advocacy/participatory perspectives (i.e., political, issue-oriented, collaborative or change oriented) or both. It also uses strategies of inquiry such as narratives, phenomenologies, ethnographies, grounded theory studies, or case studies. The researcher collects open-ended, emerging data with the primary intent of developing themes from the data (Creswell, 2003, p. 18)".

Grounded theory is a design of inquiry from sociology in which the researcher derives a general, abstract theory of a process, action, or interaction grounded in the view of the participants. This process involves using multiple stages of data collection and the refinement and interrelation of categories of information (Charmaz, 2006; Corbin & Strauss, 2008). Grounded theory is generated from the data collected. The aim is to discover what kinds of concepts and hypotheses are relevant to the area one wishes to understand. The basic elements of a grounded theory include conceptual categories and their conceptual properties, and generate relationships between these categories and their properties (Symon & Creswell, 2004).

Data Collection

For completing the research objective of the study, "the collecting primary data was the in-depth interview method to support suggestions and improving the research. The necessary secondary data collected was published documents, books, journals and related research. In this study, the interview schedules were developed based on the guidelines according to Patton (1990, pp. 290-291)". The setting involved purposive sampling to identify twenty-five participants, and they were divided into three groups, which are the "Employee Group", "Supervisor Group", and "Management Group". The criteria for the participant was at least one year of work experience in the automotive parts company, Eastern Seaboard Industrial Estate, Rayong province and they must have been concerned with the process of a Career Development Plan.

Data Analysis

The steps of data analysis are presented according to the suggestion made by Charmaz (2006, p. 46). The researcher proposed the coding step for data analysis as: **First step is Initial code:** Glaser (1978) recommended the Line-by-Line technique claiming that “For many grounded theorist, line-by-line coding is the first step in coding. Line-by-Line coding means naming each line of your writing data”. **Second step is Focused coding:** Once the initial codes were assigned, focused coding which was more directed, selective and conceptual than Line-by-Line text analysis needs doing (Glaser, 1978). Focused coding would permit the researcher to identify the most significant area from the early initial coding. This to distinguish the data with less importance to the matter (Charmaz, 2006). **Third step is Axial code:** according to Struss and Corbin (1990, 1998; Struss, 1978), axial coding narrows down the properties and dimensions of the category. In addition, it linked and gave the researcher the opportunity to make sense of properties, dimensions and emerging analysis (Charmaz, 2006). And **fourth step is Theoretical coding** was the last level of the grouping data. Glaser (1978). This type of coding was viewed as conceptualizing or how all codes were connected to each other and how the relationships could generate a new theory or model emerged from focused coding (Charmaz, 2006). Finally, there were only two main categories emerged in this study: (1) Focus on development, and (2) Career Planning.

Discussion

Response to research question: “What should be the Career Development Plan in the organization?” The above question focused on the definition and what the participant understand the Career Development Plan is. Therefore, the findings of CDP from the participants in this organization are below.

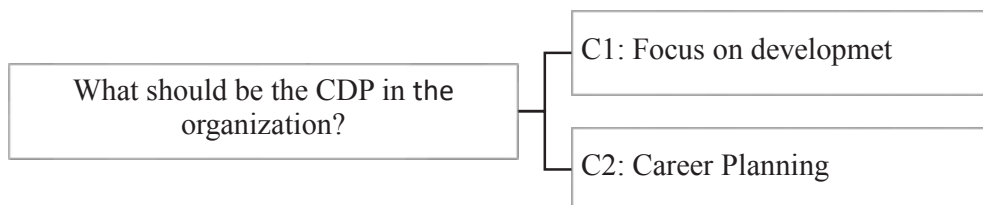


Figure 1-1 Responses to research question

Focus on development

The results show that CDP is a people development program for the short, medium, and long terms for competency fulfillment in each period, then get a promotion for job advancement in the organization. However, the development program consists of 1) self-development plan, it seems like inside preparation by willing to work or do any assignments for potential increment, and 2) management development plan, should support the activities that help the individuals development and carry out the career plan of the employees.

This result is supported by Heathfield (2016) that it is short- and long-terms skill requirements. If the employee's goal is to be top management, understand the education, skills, technology, and experience requirements, and develop interim career plans for achieving the employee's long-term career goal. To increase the employee's knowledge of career options, request one-on-one informational meetings with colleagues and managers, the purpose of these brief meetings is to gather information to help them make educated career decisions. Employees are generally willing to share their success stories and advice.

Volunteer to complete challenging projects and assignments. One of the best ways to advance

the employee's career is to identify an organizational problem and propose a solution, by offering to implement the solution, the employee will not only increase their visibility as a problem-solver in the organization, but the employee might also expand their skills in the process.

Career Planning

The results of this study show that career planning should start from management policies and the trend of business on human development, clear on job descriptions which access the employee's skills as organization requirements and expectations, provide the necessary improvement or development activities to them for meet career goals, and then evaluate them by a promotion assessment. Apart from that, the organization also needs to understand the company's ability, organizational structure, budget to support programs and activities, and needs to study career programs from other organizations in order to reasonableness.

This result is confirmed by Minor (2014) who stated that in today's world of rapid change, transformation and progress, new career paths are constantly unfolding, traditional ones are being changed and shifts are taking place in occupation skills and educational requirements.

The result is also consistent with Heathfield (2016), who found that when most employees think about their careers, they have not thought past their current job or the next promotion that they would like to receive. Employees need to broaden their short-terms thinking. As employees are promoted up the organization chart, fewer jobs become available, yet continuing to grow skills and experience should still be a priority for people obtaining value from their career. The career path is discussed at several meetings bi-annually with the employee's manager. The company does not own the career path; the employee does. But, the company demonstrates commitment to its employees by assisting where possible with resources of time and money. The company has a written plan that can help each employee focus on what is most important to employee fulfillment and success. Without a plan, the employee can feel rudderless and the company has no benchmark against which the manager and supervisor can measure the employee's progress.

Recommendations for Future Research

First, the difference between the Thai and Japanese organization structure, which levels are available for Thai employee in a global company. This area is an interesting topic for system creation. This study was conducted on one organization; therefore, future research may also need to explore more significant conditions by studying more about the different organizational structures from other areas or business sectors for best practices programs.

Second, participants reported about the current situation which briefly summarized the problems in the organization. The success factor of the career system or program is management; understanding the career system, management perspective and policy focusing, matching of management style between Thai and Japanese employees, and others. Most of participants understood that CDP would work effectively based on the management team because of the approval level and decision authority.

Third, continuing from the second recommendation that the success factor of the career program is management. CDP is one human capital investment, which cannot quite be shown by concrete results, management could not able to understand covering the career system. Therefore, Return on Investment (ROI) is one future research recommendation,

whenever, it is able to show ROI on development investment, its effect on decision making of the management level.

References

- Arthur, M. B. (1994). The boundaryless career: A new perspective for organizational inquiry. *Journal of Organizational Behavior*, 15(4), 295-306.
- Bosse, J. (2011). Preventing employee turnover. *Journal of Financial Planning*, 27(1), 48.
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. London: Sage.
- Conlon, T. J. (2004). *Career development challenges for the 21st century workplace: A review of the literature*. In T. M. Egan, M. L. Morris, & V. Inbakumar (Eds.), *Academy of human resource development conference proceedings* (pp. 779-786). Bowling Green, OH: Academy of Human Resource Development.
- Corbin, J., & Strauss, A. L. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (3rd ed.). Thousand Oaks, CA: Sage.
- Creswell, J. W. (2003). *Research design: Qualitative, quantitative and mixed methods approach* (2nd ed.). Thousand Oaks, CA: Sage.
- DeSimone, R. L., & Werner, J. M. (2012). *Human resource development* (6th ed.). South-Western: Cengage Learning.
- Glaser, B. G. (1978). *Theoretical sensitivity*. San Francisco, CA: The Sociology Press.
- Hall, D. T., & Nougaim, K. (1968). An examination of Maslow's need hierarchy in an organizational setting. *Organizational Behavior and Human Performance*, 3, 12-35.
- Heathfield S. M. (2016). *5 Tips to Improve Your Career Development*. Retrieved from <https://www.thebalance.com/improving-career-development-4058289>
- Hodgin, R. F., Chandra, A., & Weaver, C. (2010). Correlates to long-term-care nurse turnover: Survey results from the state of West Virginia. *Hospital Topics*, 88(4), 91-97.
- Larsson, R., Brousseau, K. R., Kling, K., & Sweet, P. L. (2007). Building motivational capital through career concept and culture fit: The strategic value of developing motivation and retention. *Career Development International*, 12(4), 361-381.
- McDonald, K. S., & Hite, L. M. (2005). Reviving the relevance of career development in human resource development. *Human Resource Development Review*, 4(4), 418-439.
- Minor F.J. (2014). Article: Introduction to the career planning process.
- Mondy R. W., & Noe R. M. (2005). *Human resource management* (9th ed.). New Jersey: Prentice-Hall
- Patton, M. Q. (1990). *Qualitative research & evaluation methods* (2nd ed.). Newbury Park, CA: Sage.
- Rifkin, G. (1996). Finding meaning at work. *Strategy and Business*, pp. 15-17.
- Segers, J., & Inceoglu, I. (2012). Exploring supportive and developmental career management through business strategies and coaching. *Human Resource Management*, 51(1), 99-120.
- Shahzad, K., Hussain, S., Bashir, S., Chishti, A. F., & Nasir, Z. (2011). Organizational environment, job satisfaction and career growth opportunities: A link to employee turnover intentions in public sector of Pakistan. *Interdisciplinary Journal of Contemporary Research in Business*, 2(9), 45-56.



- Strauss, A. L., & Corbin, J. M. (1990). *Basic of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage.
- Strauss, A. L., & Corbin, J. M. (1998). *Basic of qualitative research: Techniques and procedures for developing grounded theory* (2nd ed.). Thousand Oaks, CA: Sage.
- Symon, G., & Cassell, C. (2004). *Essential guide to qualitative methods in organizational research*. Thousand Oaks, CA: Sage.
- Upton, M. (2006). *Toward a multilevel theory of career development: Advancing human resource development theory building*. Doctoral dissertation, Educational Human Resource Development, Texas A&M University.

Influence of Motivation According to ERG Theory and Employee Commitment to Work-Performance: A Case Study of One Toy Car Manufacturing Company in Pathum Thani Province

Nantana Jongdee, Rajamangala University of Technology Thanyaburi, Thailand

Krisada Chienwattanasook, Rajamangala University of Technology Thanyaburi, Thailand

Abstract: *The objectives of this study are to study 1) the levels of employees' motivation as suggested in ERG theory, 2) the levels of employee commitment, and 3) the influence of both job motivation and employee commitment to employees' work performance. The samples in this study were 300 employees working for a toy car manufacturing company in Pathum Thani province. The data collection instrument in this study was a questionnaire. Statistics for data analysis were descriptive statistics including mean and standard deviation and inferential statistic including multiple regression analysis. The result indicated that employees in a toy car manufacturing company had opinion towards ERG motivation theory of employees and employee commitment in medium level meanwhile towards work performance in high level. For hypotheses testing, the multiple regression analysis revealed that employees' ERG work motivation including existence needs, relatedness needs and growth needs had an impact on employees' work performance. In the meantime, employees' commitment including attitudinal commitment, programmatic commitment and loyalty-based commitment also had an impact on employees' work performance at the statistically significant level as of 0.05.*

Keywords: ERG theory, employee commitment, work performance.

Introduction

Presently, it is undeniable that the impacts of globalization and advancement in communication technology have changed the way people all around the world do their business. Our businesses today have become more competitive. Since knowledge and information can easily travel and be transferred across borders, today people are living in a knowledge society. While advanced technology and know-how's can be easily accessed, they could not completely replace the needs of the human workforce. People remain the key human resource in driving and moving organizations and business to achieve their goals. According to Kueasan (2005, pp. 14-17), "in almost every organization, some gaps between the needs of individuals and what the organization expects from its employees are often found". These gaps are likely to be eliminated by motivating and encouraging staff to have a proper mindset and perform their duty in the right way to meet the organizational goals. Na-Nan, Chaiprasit and Pukeree (2017) added that human resource management in organizations plays quite a significant role in driving people to work towards the organizational goals. This is in line with Promsuk (2001) pointing out that it does not matter how much resources the organization could possess, without having motivated members who are willing to strive for the organization goals, businesses could not run smoothly. Motivating employees in the organizations can implement various existing models including Hierarchy of Need Theory by Maslow describing about the level of needs of employees when reaching certain point in their

life and ERG Theory arguing the needs of employees being able to be reached at the same time. The ERG Theory was categorized into 3 categories existence needs, relatedness needs and growth needs (Alderfer, 1972, as cited in Chienwattanasook, 2017, p.171-173). With this, work motivation, as a result, becomes one of the human resource development issues which have never ceased being discussed in business. Work motivation can be regarded as an HRD element which discusses things that arouse people's feelings which come from both internal and external sources. They acknowledge feelings based on their own expectations. The feelings such as like, dislike, satisfaction, dissatisfaction, in other words, emerge due to the comparison between expectation and reality, work environment, working policies, supervision, rules and regulations, colleagues, etc. These factors form both positive and negative behaviors of staff members. However, organizational behaviors of employees could also be derived from the way they engage themselves with their company. By having correct attitudes towards the organization for whom they are working, employees are likely to work hard, come to work on time and cooperate and take part in activities arranged in their organization. In contrast, if employees have low work motivation, they tend to display undependable behaviors such as coming to work late, leaving work, breaking the rules, not attending activities organized by their companies, having poor attitudes about their work and organization. Kaewkeb, Watthanasongyot and Ingard (2007, pp. 84-100) asserted that "work motivation has a direct connection with staff's performance at work".

Employees' commitment, therefore, becomes a vital factor which many companies try their best to build in their people. To enhance these useful feelings and attitudes, employees need to have good experiences at work. They must also understand the scope of their work, their career path and development, as well as trust and feel engaged with the work they are doing in their organization. Srirakidakarn (2014 as cited in Saengsai, 2015, p. 15) described that "relationships between employees and their workplaces are individually developed and those who are satisfied with the jobs they are doing are likely to perform their work well. At least 3 factors comprising staff motivation levels, personal knowledge and traits, and realizing their own work and responsibility are basic factors encouraging people to do their best at work". Direct supervisors and the management team should thus consider how may the organization deal with managing their people – making sure that the company could meet their satisfaction levels, motivate and persuade them to work hard and use their knowledge when working. The managers, furthermore, need to ensure that staff recognize that the organization acknowledges the importance of having them as valuable resources of the organization. Increasing the commitment levels, in addition, can reduce the turnover rate as well as indicate that the organization has effective staff members who work wholeheartedly for their organization (Steer, 1977).

Studying concepts and theories involving staff's motivation and commitment allows managers and the management teams to be aware of their roles in motivating and maintaining a high level of job satisfaction in their people so that they could work wholeheartedly toward the organizational goals. The researchers of this study, consequently, are interested in studying influences of motivation according to ERG theory and employee commitment on work-performance. The work on this topic is worth conducting since it could not only ensure employees continue working for the organization but also improve staff competencies which help achieve missions, and visions, generate suitable organizational strategies and continuously improve their work performance.

Research objectives

With the interest in studying influences of motivation according to ERG theory and employee commitment on work performance, this research then had objectives as follows:

- 1) To study the levels of employees' motivation which are suggested in ERG theory of people working in a Toy Car Manufacturing Company in Pathumtani Province.
- 2) To study the levels of employee commitment of people working in a Toy Car Manufacturing Company in Pathumtani Province
- 3) To investigate the influences of job motivation and employee engagement on employees' work performance.

Research hypotheses

- 1) Employees' ERG work motivation has an impact on their work performance.
- 2) Employees' commitment has an impact on their work performance.

Research Framework

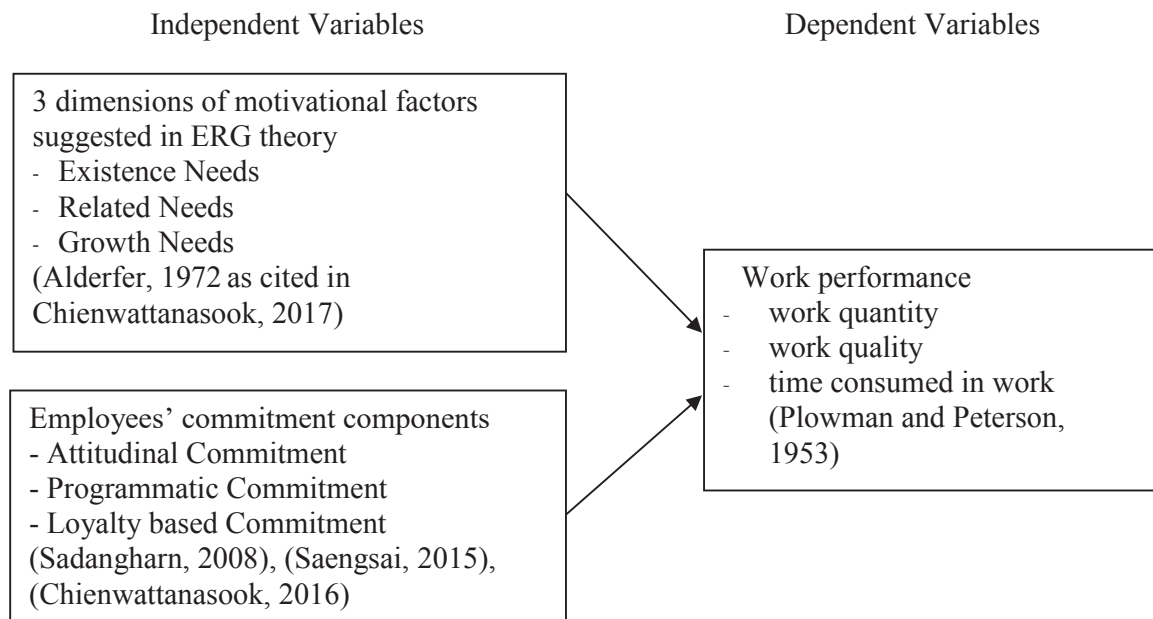


Figure 1 Research Framework

Significance of the study

1. The organization, which is the case study in this research, could review research findings as guidelines in planning human resource development activities and policy to increase the job commitment of their staff and retain their high performance workforce.
2. The research findings could show the management team the influence of job motivation and employee commitment on employees' work performance. This permits the management team to go over the current directions and organizational strategies.
3. This study reported certain shortfalls, challenges and guidelines for employee commitment and job satisfaction of employees. These are key needs assessments for the improvement and strategic work plan for the human resource department.

4. The research findings reported in this study could be shared with other organizations which are searching for techniques that could increase their employees' job satisfaction and commitment.

5. Other organizations could reveal research findings reported in this study when designing effective career development activities. This is to encourage their staff to work to achieve both personal and organizational goals as well as reduce the employee turnover rate.

Reviews of related literature

Concepts of ERG motivation theory proposed by Clayton P. Alderfer.

ERG motivation theory distinguishes three categories of people's needs in 3 levels consisting of Existence Needs, Related Needs and Growth Needs (Alderfer, 1972, as cited in Chienwattanasook, 2017, p.171-173). This theory describes that people may require different types of needs at the same time and it is no point categorizing needs orders. Meaning to say, people who may not be fulfilled with the lower-order needs (as classified in Maslow's hierarchy of needs) may require a higher-order one. This is in agreement with Naveekarn (1984, p. 68) summarizing the differences between ERG motivation theory introduced by Alderfer and the hierarchy of needs proposed by Maslow (1970) in the following points:

1. ERG motivation theory does not classify the needs orders. However, this theory observes that if people are not fulfilled with the existence needs, it could cause severe frustration.

2. ERG motivation theory reveals that although some needs are fulfilled, people are likely to require the same type in a higher level. For example, people having high salaries and secure jobs may look forward to receiving even higher salaries. The fulfilled needs could in this case motivate people to obtain more.

Self-Actualization	Growth Needs
Esteem Needs	
Social and Belongingness Needs	Relatedness Needs
Safety Needs	
Physiological Needs	Existence Needs

Maslow's Hierarchy of needs

Clayton's ERG motivation theory

Figure 2 The comparison between Maslow's Hierarchy of needs and Clayton's ERG motivation theory).

Source: Principles of management in organization, motivation in organization (Chienwattanasook, 2017, p.173)

The ERG motivation theory is, in addition, supported by a study of Pongchawee, (2013) uncovering that relatedness needs have a high impact on work performance and it influences the way people make their decision about whether they are leaving the company. Moreover, positive relationships among employees may lead to better work performance. Additionally, Yuthavorn (2015) reported in her study that the most influential factor that could motivate people to work is a positive relationship between employees and their supervisors as well as having a good relationship among colleagues themselves. Quality of relationships at the workplace therefore seems to be one of the most profound motivation factors driving staff to perform their best. The more happiness they have at work the more work motivation they have.

Concepts and theories concerning employee commitment

Sadangharn (2008) and Na-Nan, Tanompong, Thipnete and Kulsingh (2016)

categorized 3 types of employees' commitment as follows:

1. Attitudinal Commitment refers to employees' willingness to work continuously and enthusiastically for their organization. This is because they feel proud of becoming members of the organization. This can be seen from research findings revealed by Hewitt Associates (2008). According to the study, people who want to be members, work hard and intend to do their best to ensure the benefit to their organization and maintain quality relationships with their colleagues usually have a high level of employee commitment.
2. Programmatic Commitment refers to work commitments that connect with private needs of employees. For example, people may remain working in their organization as they are waiting for their money from pensions, provident funds, or a good employment record.
3. Loyalty based Commitment connects with a positive feeling towards an organization. Employees having loyalty based commitment are likely to repay the kindness given by their organization by working to their full potential. Some employees develop loyalty based commitment after receiving educational opportunities or scholarships from their company, working with good colleagues, or receiving some kinds of assistance from their organization. One interesting study relating to employees commitment was conducted by Kaewsang and Phasunon (2015). This study revealed that people who feel engaged with their organization will also feel loyal to their organization. Moreover, the more employees feel loyal to their organization, the higher the effectiveness of their work performance could become.

It can be assumed that employees' commitment is derived from employee's attitudes and feelings the employees have for their organization. They accept an organization's goals, values, and cultures and feel proud of being a part of their organization. They are willing to contribute both physically and emotionally efforts to repay kindness to their organization. They believe that if they do their best to help the organization, the organization could become a competitive organization. An organization having workforces with high employee commitment could develop great synergy that is used to compete with competitors and be successful in their business.

Concepts and theories concerning employees' performance

Peterson and Plowman (1989 as cited in Thavornwongsakul, 2011, p. 71) summarized three criteria which could be considered when measuring employees' performance.

1. Work Quality refers to the correctness and completeness of work which employees do based on standards set by the organization. It also connects with satisfaction levels of people who the work is submitted to. The performed work must be worthwhile and usable by people who receive it. The quality of performed work is one criteria of the job motivation factors which is found and reported by Juengprasit (2012) that job motivation leads to work performance effectiveness. Many people are likely to first pay attention to the quality of the work they are doing or considering than to the quantity of work they could do.
2. Work Quantity refers to the amount of work people could perform. The work quantity must balance the expected work quantity, time consumed in work, and resources required to perform the job – enough workforce, materials, equipment or devices.
3. Time refers to working operation time which is given for someone to complete the work. To meet the time standard, the time consumed in work is counted from the time the task is assigned until the completed task is submitted.

Work performance in this study is evaluated based on the measurement of work quality, quantity and time consumed in work. The results of employees' performance appraisal are used to indicate 1) how well employees could perform their work, 2) whether

employees deserve awards/punishment, 3) if consultation should be given to some employees, 4) ways of helping employees to increase both work quality and quantity.

Research Methodology

Population and sample

Population of this study are 545 employees working for one toy car manufacturing Company in Pathumtani Province. The number of the sample size was determined based on Yamane's formula (1973). By applying Yamane's formula of sample size with an error of 5% and with a confidence coefficient of 95%, the calculation from a population of 545 came up with 230 employees. To minimize potential errors which might be derived from collecting incomplete questionnaires, the researchers collected questionnaires from 300 employees. The researchers considered steps of Quota sampling technique to identify their samples from each group of their population.

Data collection instrument

The data collection instrument in this study was a five-point-rating scale questionnaire asking 32 questions. The questionnaire was divided into 4 main parts. The researchers distributed and collected 300 sets of completed questionnaires themselves.

Statistics for data analysis

1. Descriptive Statistics including frequency, average (\bar{x}), Standard Deviation, and percentage were used to summarize overall pictures of levels of ERG motivation theory, levels of work performance and levels of employee commitment rated by the samples.

2. Inferential Statistics such as One-way Analysis of Variance (ANOVA) and LSD (Least Significant Difference) were used to determine whether there were any statistically significant differences between the means of two or more independent (unrelated) groups. To predict the value of work performance based on the value of two or more other variables (the levels of job motivation suggested in ERG theory and the levels of employee commitment) which are the test of the first and second hypothesis, Multiple Regression Analysis, an extension of simple linear regression, was performed.

Table 1.1 Summary of research findings

Variables	level	Average (\bar{x})	Standard Deviation (SD)
1. ERG motivation theory of employees			
1.1 Existence Needs	medium	3.30	0.75
1.2 Relatedness Needs	medium	3.42	0.78
1.3 Growth Needs	medium	3.36	0.74
Average	medium	3.36	0.66
2. employee commitment			
1.1 Attitudinal Commitment	medium	3.35	0.69
1.2 Programmatic Commitment	medium	3.27	0.71
1.3 Loyalty based Commitment	medium	3.37	0.72
Average	medium	3.33	0.65
3. work performance			
3.1 Work Quality	high	3.43	0.69
3.2 Work Quantity	high	3.43	0.68
3.3 Time Consumed in Work	high	3.42	0.75
Average	high	3.43	0.65

4. Summary of hypothesis testing

Hypothesis 1: Employees' ERG work motivation has an impact on their work performance.

Table 1.2 The analysis of Multiple Regression testing the impact of ERG work motivation on employees' work performance.

Work motivation (ERG theory)	Employees' work performance						
	B	S.E	β	t	Sig.	Tolerance	VIF
Constants	1.005	0.132	-	7.609	0.000*	-	-
Existence Needs (X1)	0.164	0.047	0.187	3.459	0.001*	0.520	1.924
Relatedness Needs (X2)	0.347	0.049	0.413	7.044	0.000*	0.441	2.265
Growth Needs (X3)	0.208	0.051	0.234	4.099	0.000*	0.464	2.154

$R^2 = 0.742$, $F = 120.800$, $*p < 0.05$

The result of hypothesis testing using regression analysis formula reports that ERG motivation theory in all dimensions – Existence Needs (X1), Relatedness Needs (X2), and Growth Needs (X3) have an impact on employees' work performance. The most influential dimension of ERG motivation theory impacting employees' work performance is Relatedness Needs (X2) ($\beta = 0.413$). This is followed by Growth Needs (X3) ($\beta = 0.243$) and Existence Needs (X1) ($\beta = 0.187$). The Coefficient of Determination ($R^2 = 0.742$) shows that all 3 dimensions of ERG motivation theory could well predict the variance of employees' work performance (74.20%) while the other 25.80% could be other types of factors influencing employees' work performance.

Hypothesis 2: Employees' commitment has an impact on their work performance.

Table 1.3 The analysis of Multiple Regression testing the impact of employees' commitment on employees' work performance.

Employees' commitment	Employees' work performance						
	B	S.E	β	t	Sig.	Tolerance	VIF
Constants	1.186	0.148	-	7.997	0.000*	-	-
Attitudinal Commitment (X1)	0.252	0.065	0.269	3.890	0.000*	0.391	2.556
Programmatic Commitment (X2)	0.153	0.076	0.167	2.000	0.046*	0.268	3.732
Loyalty based Commitment (X3)	0.266	0.070	0.294	3.824	0.000*	0.315	3.174

$R^2 = 0.669$, $F = 80.070$, $*p < 0.05$

The result of hypothesis testing using regression analysis formula reports that all three types of employees' commitment – Attitudinal Commitment (X1), Programmatic Commitment (X2) (X2), and Loyalty based Commitment (X3) have an impact on employees' work performance. The most influential type of employees' commitment impacting employees' work performance is the Loyalty based Commitment (X3) ($\beta = 0.294$). This is followed by Attitudinal Commitment (X1) ($\beta = 0.269$) and the least influential type of employees' commitment impacting employees' work performance is Programmatic Commitment (X2) ($\beta = 0.167$). Moreover, the Coefficient of Determination ($R^2 = 0.669$) shows that all 3 types of employees' commitment could predict the variance of employees'

work performance (66.90%) while the other 33.10% could be other types of factors influencing employees' work performance.

Discussion of research findings

The following discussions are presented based on research findings reported in this study.

1. ERG motivation theory

This study reveals that employees working in the toy car manufacturing company in Pathumtani Province look for Relatedness Needs the most. This might be because working in an organization requires them to develop a good relationship with their colleagues. By getting along well with friends, it could also create a good working environment. This finding is also supported by the study of Pongchawee (2013) asserting that employees are likely to search for relatedness needs the most. In addition, her study discovered of the relationship between having a good relationship with colleagues and employees' work motivation. Yuthavorn (2015), also found that a positive relationship among supervisors, subordinates and colleagues becomes the most effective factor motivating employees to work for the best performance. To increase staffs' job motivation, team building and happiness at work, a company should organize employees' relationship activities boosting up strong relationships between supervisors and subordinates and among subordinates themselves.

2. Employee's commitment

Three types of employee commitment were discussed in this study Attitudinal Commitment, Programmatic Commitment and Loyalty Based Commitment. This study uncovered that employees continuing working in the company rated themselves as employees having the loyalty based commitment the most. This might be because this issue has been instilled in them by their company. They further express that the reason that makes them work hard for the company is because they feel proud of being part of this company. The study of Kaewsang (2015) also supported this describing that people can engage themselves and feel loyal to their organization if they are continuously encouraged to love their organization. In addition, her study, similarly, reported a positive relationship between levels of employees' commitment and employees' work effectiveness. It is also correspondent with the study of Thongdech (2015) revealing that employees with different personal characteristics in terms of gender, age, education level, income and working duration have different organizational engagement. In addition, motivational factors have positive relationship with organizational commitment; meaning that when employees have higher motivation, they will have higher degree of organizational commitment. Furthermore, the study done by Paothong (2016) found that employees with different personal factors in terms of working duration have organizational commitment. Also, the relationship between motivational factors and organizational commitment is also in positive direction.

3. Employees' work performance

Three related work performance issues measured in this study are work quality, work quantity, and time consumed in work. This study reported that employees working in this toy company have a high work performance in all aspects – work quality, work quantity and time consumed in work. This is because they are requested to pay attention to ensuring the correctness, high quality and time consumed in work. Before handing in their products to customers, their department must check the quality of products based on their quality standard. This finding is supported by the study presented by Juengpravit (2012). She found that people are likely to be concerned more about the quality of their work before looking at their work quantity. This is also agreed by the findings found by Thidiseree (2014) which disclosed that employees with different educational backgrounds and incomes may perform different quality at work. As a result, an organization wishing to enhance quality of their

product should focus on the working process quality instead of the quantity of work they could produce. Since the educational background of staff indicates their quality of work, the company, in addition, should be more specific when designing job specifications matching work and responsibility. Furthermore, the company must consider issues concerning staff compensation. All employees should receive fair pay reflecting the quality of work, responsibility and competence they contribute at work. Not only does a competitive salary help increase their morale at work, it also reinforces them to keep producing quality work.

Recommendations based on research findings in this study

1. The company should consider and implement various job motivation techniques that can fulfill the needs of their employees. The company should ensure and maintain the high level of job motivation of their staff by organizing activities promoting the importance of good relationships and cooperation at work. Since a positive relationship between supervisors and subordinates as well as among subordinates themselves could develop good cooperation and teamwork impacting on employees' work performance.

2. The findings in this study signify that although good compensation has an influence on employees' work performance, it is not the most important thing which the employees are seeking in the first place. In contrast, a company which could develop the loyalty based commitment in their people is less likely to encounter a high turnover rate. This is because employees who feel loyal to their organization could ignore problems or upsetting feelings they may occasionally experience at work. To maintain staff's loyalty and retain them at work, the company must look after their attitude, compensation, as well as organize some activities to promote, instill and increase staff's loyalty based commitment. Apart from boosting their loyalty, the company should consider whether they have proper management policies and good retention programs matching the needs of their employees.

References

- Alderfer, C. P. (1972). *Existence: Relatedness and Growth, Human Needs in Organizational Setting*. New York: Free Press.
- Chienwattanasook, K. (2016). *Principles of Management and Organization*. Bangkok: Triple Group Co., Ltd.
- Hewitt Associates. (2008). *Identify Factors Driving Employee Engagement*. Retrieved December 26, 2017, from <http://www.hewittassociates.com/Intl/NA/enUS/OurServices/ServiceTool.aspx?c>
- Juengprasit, C. (2012). *The Motivation Factors Related to Work Efficiency of College of Music, Mahidol University Salaya Campus Personal*. Master's thesis, Mahidol University.
- Kaewkeb, U., Watthanasongyot, P., & Ingard, A. (2007). The Influence of Working Motivation on Organization of Engagement of the Petrochemicals Industries Employee in Rayong province. *Burapha Journal of Business Management, Faculty of Management and Tourism Burapha University*, 5(1), 84-100.
- Kaewsang, T. & Phasunon, P. (2015). *Factors Demographic Affecting the Organizational Commitment of the Nongpho Ratchaburi Dairy Cooperative Limited (Under the Royal Patronage)*. Master's thesis, Silpakorn University.
- Kueasan, J. (2005). Motivation and Organizational Success. *Khon Kaen University Quality Assurance Journal*, 6(2), 14-17.
- Na-Nan, K., Chaiprasit, K., and Pukeree, P. (2016). SMEs' Performance Management of High Growth Sectors and High Impact Sectors in Thailand: Mixed Method Research. *International Journal of Engineering and Business Management*, 9, 1-8.

- Na-Nan, K., Tanompong, P., Thipnete, A., & Kulsingh, R. (2016). Influence of Job Characteristic, Organizational, and Employee Engagement that Affect Organizational Citizenship Behavior of Teachers in Thailand. *The Social Sciences*, 11(18), 4523-4533.
- Naveekarn, S. (1984). Antecedents and Outcomes of Organizational Commitment. *Administrative Science Quarterly*, 5(22), 45-46.
- Maslow, A. H. (1970). *Motivation and Personality*. (2 nd ed.). New York: Harper & Row.
- Plowman, Grosvenor E., & Peterson, E. (1989). *Business Organization and Management*. Illinois: Irwin.
- Paothong, W. (2016). *Relationship between Motivation at Work and Organizational Commitment of Registered Nurses at Thammasat University Hospital, Thammasat University*. Master's thesis, Rajamangala University of Technology Thanyaburi.
- Pongchawee, S. (2013). *Persuasive Factors Toward the Personnel's Operation: A Case Study of Golden Jubilee Medical Center, Mahidol University*. Master's thesis, Rajamangala University of Technology RattanaKosin.
- Promsuk, L (2001). *The Relationships Between Organizational Citizenship Behavior, Job Satisfaction and Work Performance: A Case Study of Minebea Group of Companies (Thailand)*. Master's thesis, Kasetsart University.
- Sadangharn, P. (2008). *Commitment vs Engagement*. Retrieved December 15, 2017, from <http://www.ftpi.or.th/>
- Saengsai, A. (2015). *The Effect of Organizational Factors and Perceived Organizational Support on Generation-Y Employees' Commitment: A Case Study of Asian Stanley International Co.Ltd*. Master's thesis, Rajamangala University of Technology Thanyaburi.
- Steers, R. M. (1977). Antecedents and Outcomes of Organizational Commitment. *Administrative Science Quarterly*, 5(22), 45-46.
- Thavornwongsakul, J. (2011). *The Study of Management Paradigm Which Affects to the Efficiency of Level Two-Seven's Officer in Provincial Electricity Authority Head Quarters*. Master's thesis, Silpakorn University.
- Thidiseree, T. (2014). *Influences of Employees' Courage and Organizational Climate on Work Efficiency: A Case Study of Provincial Electricity Authority Employees*. Master's thesis, Rajamangala University of Technology Thanyaburi.
- Thongdech, A. (2015). *Relationship between Motivation at Work and Organizational Commitment of Employees of TOT Public Company Limited*. Master's thesis, Rajamangala University of Technology Thanyaburi.
- Yamane, T. (1973). *An Introductory Analysis*. (3rd ed). New York: Harper & Row.
- Yuthaworn, N. (2015). *The Motivational Factors Impacting on The Working of Personnal: A Case Study of The Personnal of Organizins to Promote Culture, Tourism and Sports in Bangkok*. Master's thesis, Rajamangala University of Technology Thanyaburi.

Emerging NHRD in Transitioning Myanmar

Zaw Naing, National Institute of Development Administration, Thailand

Abstract: *The purpose of this study is to explore the emerging national human resource development (NHRD) in transitioning Myanmar. This exploratory research has been done through case study method synthesizing the literature and document reviews, interviews and focus group discussions with key stakeholders, outlining and checking the perspectives of NHRD, current NHRD practices and policies, driving forces of NHRD in transition period of Myanmar, and the challenges. National Human Resource Development (NHRD) in transitioning Myanmar has various stakeholders and driving forces, defining its environment and system, in a dynamic fashion. There are progressive developments and opportunities for growing but coupling with the challenges as well. It is important to develop the conceptual framework, and then strategies and plans for the future sustainable development of the national human resource and then consequently the comprehensive socio-economic development of the country. Myanmar needs to grasp the chances of taking the population bonus advantage and population divide by investing in education and skills development in emerging youth bulge. It is also important to attract the Myanmar migrants abroad or 'Myanmar Diaspora' to come back to Myanmar, to participate in the development efforts with the accumulated knowledge, experience, skills and financial resources, to grow together. This must be properly carried out with right scheme and motivational incentives at the point of sufficient economic growth. A proposed NHRD model for transitioning Myanmar and the recommendations for effective and efficient contributions of NHRD to the sustainable development of Myanmar has been laid out.*

Keywords: National Human Resource Development (NHRD); NHRD Case Study; NHRD policy; Myanmar; NHRD in transitioning economies

Introduction

Asian Development Bank (2012) stated that Myanmar has been in a transition period. For the last five decades, Myanmar was ruled under dictatorships: socialist and military governments; one after another. Since late 2011, the country has made many significant changes in political structures, including but not limited to transferring power from the military government to the elected government. Now, it has been in the process of transformations from military to democratic governance, and closed economy to market oriented economy (Mieno, 2013). To effect such transformations, one of the main challenges has been to develop the required human resources; people who are healthy, capable, skilled, and competent, taking new jobs in new industries and in new approaches to the transitioning society and economy (Asian Development Bank, 2014). Accordingly, NHRD is a critical success factor in the transition period.

Rationale and Problem Statement

In today's fast changing world, a country's success and sustainable development is fundamentally and critically depends on the capacities, knowledge, skills, and competencies of its people. Accordingly, many countries have developed national human resource development (NHRD) strategies, policies, master plans, and roadmaps, to build the capacities

of their people to make their countries competitive in the globalized world. Theory about the nature and extent of NHRD making impact to the countries' wealth is not new and not recently developed but had been informed by human capital theory by Schultz, since 1961, later by social capital theory by Bourdieu (Boudieu, 1986) and Coleman, in 1988. The human capital theory implies that investment in knowledge and skills brings economic returns, individually and collectively, while social capital theory advising trusting relationships are good for social cohesion, then human capital formation and consequently the economic growth. Both the human capital and social capital theories advise the importance of the capacity and social assets of the people in a nation for its development process.

Exploring the development of the term human resource development (HRD), it is found that it HRD has referred to developing human resource to increase economic productivity and consequently a country's wealth, which is proportionate to the economic outputs (Becker, 1964; Schultz, 1961; Smith, 1776). Within these theoretical perspectives, the skills, knowledge, competencies, capacities and social assets of the people of a nation are considered hidden assets and capital critical not only to the economic goals of modern societies but also essential to attaining their social, political, and economic goals. Although NHRD lies at the heart of both of these concepts, there are still gaps to fill up. It is still a challenge to define how human and social capitals are best developed, how they interact and complement each other, and how these complex development issues can be solved. Development issues are interrelated among social, political, and economic issues, and time after time globalization and technological advancements are also joining in to play significant roles in the complex development mix.

Accordingly, the processes of HRD unlock the door to modernization (Harbison & Myers, 1964, p. 2). This definition in 1960s clearly expands the operational boundary of HRD beyond that of the organization but as a major component of and contributor to national development.

It is still required to expand and explore the understanding of the complex and dynamic HRD issues in different countries, with different historical, cultural and societal characteristics.

Reviewing the development of HRD theories, it also has been found that it has been much more influenced by the United States and western countries, and then has increasingly been disseminated to other less developed nations resulting in a tendency by the latter to adopt their construct of HRD from the outside rather than to develop such construct from within (Paprock, 2006).

In the last two decades, there have been exploratory studies about NHRD policies and practices in many countries. But, there are still many countries in Asia, Africa and Latin America whose NHRD policies and practices are yet to be explored. Myanmar is one of those countries still need to be explored.

Exploring the different perspectives and characteristics of NHRD in different countries, Cho and McLean (2004) suggested five models of NHRD: (a) centralized NHRD, (b) transitional NHRD, (c) government-initiated NHRD, (d) decentralized/ free market NHRD, and (e) small-nation NHRD. But, importantly, they caution that there is no "pure" model but each country may have mixed structure with different models.

NHRD in transitional countries: changing from communist or socialist or military governance systems to democratic systems and from centrally planned economies to market economies; generally belongs to the transitional NHRD category. But, as Cho and Mclean cautioned, the single model of NHRD for the transitional country may not work in all countries. It is essential to adapt HRD programs and approaches to specific country contexts to ensure effective development. The frameworks for each country's NHRD may depend on various factors and driving forces: social, economic, political and development environment.

This study explores to understand the meaning and perspectives of NHRD, via the literature review and the case study approach, exploring the issues, and challenges of the rapidly changing country, then draw up a model for NHRD in transitioning Myanmar, with an intent to contribute to the development of NHRD strategies and plans, aiming toward the sustainable development of the country. It will also fill up the academic gap of NHRD studies in transitioning economies with a specific and unique country in Asia, of which the literature and information is very rare and often not available in the academic publications.

Significance of the Study

As a transitioning economy, at this stage of transformation from the socialist and then military government to the democratic government, and centrally planned economy to the market-oriented economy, Myanmar poise for an exploratory research and study of its national human resource development perspectives and scenarios, to prepare for its fullest and sustainable development.

Asian Development Bank (2012) stated that with its rich natural resource, abundant labor forces, and strategic location between the two emerging global giants: China and India; and the fast growing emerging market, ASEAN; Myanmar has high potential for rapid growth and development.

But, Myanmar has its constraints, limitations and challenges as well. Since the country had been under the socialist and military dictatorship regimes since 1960s, for about 50 years, the infrastructure needs to be developed, the education systems have been deteriorated, social and cultural values have been treated by the oppressive systems, and the institutions have been weakened.

Physical infrastructure development in today's world is easier than the past. Construction technologies have been improved. Global financial institutions are investing in infrastructure development projects in developing countries and also especially in those transitional economies, as emerging markets.

But, it is a challenge for the country and the people to wake up, to learn and to catch up with the changes which are happening along with the opening of the country, the economy and the society. So, the HRD as for a whole country in national level, but all inclusively different levels, different regions in the country and different industries existing and developing, i.e., NHRD, is critical. It is not something which can be changed or developed overnight, but will take time. The social and cultural values cannot be redefined in a short time, but to be cultivated overtime. The institutions have to be strengthened with perseverance, but not in a year or two. The technological advancements and the globalization may affect the transition process, but have to be careful with those interventions as well. Then, restructuring, reforming and revitalization of the deteriorated education systems to develop the right people with the right skills, competencies and capacities for the right jobs and positions in the industries of the new economy which the country would have set or developed with its development goals for short term, mid-term and long term futures is most critical.

This study will not only fill up the academic gap of NHRD studies in transitioning economies exploring Myanmar, a specific and unique country in Southeast Asia, of which the literature and information is very limited and often not available in the academic research and scholarly publications, but also it will explore the perspectives, contexts, driving forces, challenges and possible scenarios for the sustainable development of Myanmar, exploring and disseminating the constructs of NHRD from within.

Research methodology

The phenomenon of the study is an interdisciplinary and involved with multi-stakeholders, and multi-levels; and the purpose of this study is exploratory, descriptive, interpretive and explanatory. It coincides with the purposes of the case study research method (Mariano, 1993). Accordingly, a combination of literature review and the case study method with document reviews and multi-stakeholders' interviews have been done, as the research method, to explore and bring up an understanding about the phenomenon of NHRD in Myanmar in transitioning context.

The literature review (reviewing peer-reviewed scholarly published articles) has been made through NIDA Library facilities. Then, the document review has been carried out to collect the data which are not in the scholarly domain, but available in different other forms as publications or reports or conference papers, etc., by government organizations such as Ministry of Education, Ministry of Health, Department of Population; international organizations such as ASEAN, ADB, World Bank, UNDP, UNESCO, UNIDO, UNFPA, WHO, ILO, JICA, KOICA, GIZ, SDC, USAID, DFID, British Council; professional associations, societies and organizations, such as chambers of commerce, Myanmar Engineering Society (MES); NGOs, INGOs such as Save the Children, Asia Society; Consultancy firms such as Oxford Business Group, Deloitte; newspapers and local publications, etc.

Interviews and focus group discussions were carried out with the different types of stakeholders for a balanced, integrated and comprehensive understanding of the area of study, i.e., NHRD in transitioning Myanmar. The participants are selected not only by different types, but also from both urban and rural areas. The interviewees and focus group discussions participants included senior and middle-level government officials, industrial specialists, vocational trainers, agriculture specialists, academic professors, researchers, economists, consultants, international experts from international organizations such as ADB, World Bank, UNDP, UNIDO, UNFPA; employers, business owners, teachers and students from basic, middle and high schools, universities, professional institutes, vocational training institutes, monastic education centers, informal and non-formal education organizations; and other stakeholders such as school drop-out students, Myanmar people working or residing in Thailand, United States of America, Singapore, parents, politicians, members of parliaments, NGOs, retirees, statistical analysts, etc. The participants of this study all together comprised of more than 70 participants from different segments of government, industries, private sector, international organizations, teachers, students, parents, vocational trainers, and other stakeholders involved in and impacted by the NHRD systems in Myanmar, which could help comprehensiveness and inclusivity of the research findings. During the interviews, participants described their perceptions and experiences about how NHRD works and how it impacts their works and their lives, the challenges, the role of stakeholders, and the factors affecting the NHRD system and environment, etc.

The Historical and Transitioning Contexts of NHRD in Myanmar

The current status and environment of NHRD in Myanmar have been significantly impacted by various historical events. For purposes of this inquiry, consideration of the historical context begins from the foundation of Myanmar, then the British colonial era, and then continues the times after the independence in 1948, and going through the socialist and military eras, and then the transitioning Myanmar, zooming into the political, sociocultural and economical aspects of transition which affect to the national human resource development system and environment.

Human Resource Development and Education system in Myanmar in the Past

Influence of Buddhism

Ireland and Van Benthuyssen (2014) states that it is not possible to consider education in Myanmar, and neighboring countries of South East Asia such as Thailand, without considering the huge and important role that Buddhism has played and still plays in the system of education in this area. The importance of Buddhist teaching and philosophy has formed the foundation of all teaching practices. For the centuries to follow, monkhood and monastic education have provided an opportunity for the poor to become educated and a way for them to move into well-paid working environments. Even today, many people throughout South East Asia are educated in monasteries.

In Early era of Myanmar

Tin (2000) states that education has been highly regarded in Myanmar since early history of Myanmar. He refers to 'Octennial Report on education in Burma' (MOE, 1956) which pointed out that Nicolo Mannuci, a Venetian who travelled in Myanmar about 1700 A.D. described the country "as a kingdom governed by the pen, for not a single person can go from one village into another without a paper or writing" (p1). Life revolved round the village and the values of 'extended families' were strong, he stated.

The report further describes that after the primary education, which was largely a preparation for monk-hood, every Burmese boy joined the Buddhist Order, in his early teens. In his young novice-hood, the Burmese boy completed his secondary education. It was largely religious, and also classical, Pali taking the place of Latin in Western education. Besides three R's (reading, writing and arithmetic), history, geography, astrology and medicine usually formed the curriculum. In larger towns, there were special "schools" for the study of medicine.

According to 'Octennial Report on education in Burma' (MOE, 1956), vocational education and higher technical education were given to teens children and youths as on-job-training in workplaces like agriculture, or village workshops, or apprenticeship to master craftsmen, in such areas like lacquerware, carpentry, wood and ivory carving, weaving, sword-making, sculpture and architecture,

The report also stated that even in those days of widespread illiteracy in Europe, Burma led in the education of women as well. In the Bagan (Pagan) period (1044-1287), girls used to study Pali scriptures over their cooking pots and mothers sang Pali verses as lullabies while the proportion of women authors was also very high. The census report for 1872 described Burma was a country, "where female education was a reality, before Oxford was founded."

In the colonial era

Education in Myanmar (then Burma) in the colonial era until 1948 was colonial, widely criticized by the leaders of independence movement. The British had given to the Burmese people an education for proficiency in the English language, for employments as clerks and minor officials of their administrative machinery.

In British time, only children of rich families could seek admission into the Anglo-Vernacular and English schools, where only about ten percent (10%) was admitted for Burmese children. According to 'Octennial Report on education in Burma' (MOE, 1956), in the British period, there was a certain amount of technical and vocational education provided in the areas of forestry, veterinary, public health, medicine, polytechnic, fine arts, survey, teachers education, police training, posts and telegraphs, and also apprentice – systems with the Dockyards of Irrawaddy Flotilla Company, the Rangoon Foundry, and commercial firms.

In Post-independence period (1948 – 62)

After the independence, the government of Burma announced Burmese as a medium of instruction while allowing English at the college level; and the creation of new textbooks

that highlighted the spirit of nationalism. The higher education universities and institutes are limited, but providing quite a quality education, and thus attracted many foreign students to come and study in universities in Myanmar, especially Yangon University (Tin, 2000).

Under Military Rule and Socialist Era

Under military rule and then socialist era (1962-1988) the educational system became highly centralized, and has been used as a political tool for socialism, or for political purposes, largely to underpin the regime in power. In 1987, the country was granted a status of "Least Developed Country" by the United Nations.

1988 – 2011

The military governments under one military General after another ruled the country since 1988 until 2011. The educational system has remained chaotic. The majority of public schools have limited access to textbooks and supplies. Much of the school infrastructure is inadequate. There is a shortage of teachers. And, classrooms are overcrowded. Numerous students and teachers who led the democratization movement were silenced or jailed, and many colleges and universities were periodically shut down (Education Encyclopedia. 2017).

Discrimination against ethnic minorities remains a problem for the education system. Community-based schools have a history of being closed by the government, which only serves to intensify conflict between ethnic minorities and the Myanmar army. In the absence of these schools, minorities are forced to choose state-run schools that do not teach in their native tongue.

Tin (2013) stated that the higher education sector was very much degraded in the military regimes era. Most of Myanmar universities were relocated outside the cities and towns, preventing the anti-government demonstrations in the cities. The academic years were shortened, to produce the quantity of graduates, but not in the quality of education. Political stability was prioritized than national human resource development or education.

The military rulers established technological universities technical institutes all around the country with an ambition to produce engineers and technicians in quantity, but again with very low quality of qualification of those graduates (Tin, 2008).

Tin further stated that the education systems also have been centralized, together with the political systems. The students grew up with rote learning education, and teachers also did not have experience with child-centered teaching methods, or interactive teaching methodologies. Accordingly, children and youth grew up with little practice of thinking.

2011 Afterwards

Mieno, F. (2013) expressed that the quick progress in political and economic reform after March 2012 is welcoming but truly unexpected to the world. Even with the world observing with huge skepticism the political changes to continue, the ex-military government transferred the power to winning NLD party, led by Aung San Suu Kyi, after its landslide winning in 2015 elections. As per the 2008 military-drafted Constitution, Tatmadaw (the Myanmar Armed Forces) nominated 25% of all seats in the bicameral Myanmar parliament and had a virtual 'veto' over any amendment to the Constitution by a requirement that any amendment had to be passed by 75% of the parliament and a national referendum. In an overview, education and training systems and consequently the national human resource in Myanmar had been weakened in the past as of the mismanagement and lack of resources along the socialist and military governance.

Emerging NHRD in Transitioning Myanmar

Myanmar is changing rapidly from the closed to open economy, and consequently, education and training systems in Myanmar are under increasing pressure to provide the human resources needed to fulfil the required skill-sets for the new jobs in new setting of the economy, and to sustain the continued growth. Reform and development of education system

and environment is recognized as critical to Myanmar's transition to democracy and inclusive economic growth. Myanmar has the advantage of a large workforce of over 34 million people out of 51.4 million population, of which 40% are between the ages of 15-29 (DOP, 2015). But, the challenge is that majority of the workforce, are under-educated and under-skilled.

Childhood development

It is reported that only about 22.9% of children have access to ECCD centers while other ASEAN countries have achieved 57 per cent coverage. (Save the Children, 2015).

Basic education

The current basic education system is a 5-4-2 system (KG+4+4+2). In the basic education system, the teaching and learning environment has been much more with the rote-learning, making less critical thinking or creativity to the students. It is also much more teacher-centered, not the student-centered. The drop-out rates were high. It is estimated that over one million children in Myanmar are still out of school, less than 70% of primary school age children complete a full course of primary education at the correct age, and out of every 100 children entering primary school, only about 20 go on to finish lower secondary school. Issues of low quality of education are also serious (UNICEF, 2017-a).

About two thirds of young population has not completed the middle school.

Basic education reform process is on-going. Ministry of education started drawing up a new curriculum, along with the education reform process, to change to KG+12 (KG+5+4+3), in 2012, and then introduced a new syllabus, in 2016-17, for the kindergarten (KG) standard., but changing the curriculum and training the teachers one grade per academic year. Accordingly, it will be completed by 2028-2029 academic year.

Tin (2000) advocates that since 69% of the population lives in rural areas, provision of education to these rural communities should be geared towards their needs. The curriculum and programs used in rural schools should be flexible not rigid. The rigid, monolithic national curriculum, school terms and timetables that exist today should be reconsidered. For rural areas, a more flexible curriculum based on local needs should be devised and, where seasonal cropping occurs, school terms should be arranged so that rural family units can make full use of the manpower available to them without disrupting the schooling of their children. In such a way, the massive drop-out rate before completion of the primary cycle of education can be staunched in these disadvantaged areas. If rural schools are programmed as urban schools are and the plight of agrarian families is ignored, the pernicious effect of school drop-out rates on the already weakened education system will be increased further.

In many rural areas, the government education system is non-existent. Teachers are usually reluctant to go to the rural areas, particularly because they receive no adequate salaries. As a consequence, rural schools are mostly overcrowded and the student/ teacher ratio is very high. And, schools are mostly poorly equipped and usually lack basic teaching materials such as benches, tables and textbooks. Teachers are mostly poorly trained and teaching methods tend to be repetitive, outdated, teacher centered teaching. The state-run teacher-training system has been steadily deteriorating.

Higher education

There are 168 higher education institutions in Myanmar, consisting of universities, institutes and colleges (MOE, 2014). Education in Myanmar has been centralized for the management and administrations of the education institutions (UNESCO, 2011). Student enrollment in universities in 2014 was 550,000. Universities offer bachelor, master, and doctorate degree programs. The higher education system follows a 4-1-3 year program with 4 years for a bachelor's degree, one year of qualifying classes, and 3 years for a master's

degree. Engineering students have to study 6 years for bachelor degree, while medical students have to study for 7 years.

University entrance derives from students' scores (or) marks they achieved at matriculation exams. Minimum scores vary depending on the university, but medical schools, engineering institutes, marine university, computer universities demand the higher exam scores. Tuition fees are very small. Teaching revolves around textbook instruction with little to no research focus. Most of the textbooks are not updated. In his book, "Rejuvenating Myanmar Education", Myint (2016) states that despite the support and drive to do research; there is lack of understanding by faculty of the importance of research to them or to the country. He strongly encouraged Myanmar universities should be more enthusiastic about research and give more time and thought to it.

In a transcript of Aung San Suu Kyi's video speech presented at a British Council and University of London policy dialogue event on 9 May 2013, she said "The moves to draft a law on higher education in Burma and to revitalize Rangoon University have to do with much more than mere education. It is really part of our efforts to revitalize and reinvigorate our society. For decades, Burma has suffered from a poor education system and, once the pride of South East Asia; we have now fallen behind all our neighbors. We want to change the situation to give our people pride in themselves and, to do that, we need to strengthen our education system. We need to produce vigorous young people who are capable of meeting the challenges that our country will have to face in the future. Our university system has almost been destroyed by half a century of military rule. Campus life ceased to exist several decades ago, and standard of our university education has fallen so low that graduates have nothing except a photograph of their graduation ceremony to show for the years they spent at university. We want to make our academic institutions independent. We want to make them vital and we want to modernize them to be in keeping with the developments of the times." (Kyi, 2013)

Technical and Vocational Education and Training (TVET)

A Myanmar professor working at a University in United States of America, who has been in United States since 2001, states the need of vocational training and education to produce skilled workers, technicians, competent workforce in various sectors including but not limited to healthcare, agriculture, construction, manufacturing, repairing home-appliances such as refrigerator, air-conditioner, etc. He mentions that producing those skilled workers does not need universities, but, short time certificate or a diploma level training courses may be enough. He adds to have skills assessment and training centers accreditation, for assurance of those skills training.

In a panel at World Economic Forum _ East Asia, held on 18th July 2013, Daw Aung San Suu Kyi stated "our country has suffered very bad education system for many decades. And, so young people and not so young people, because there are many in their forties, are really not equipped to get gainful employment. That is, of course, of poor education system. So, what we need is both education, and jobs. So, what it amounts to us is we have to concentrate on the vocational training and on the job training. Because people in the forties, it is not easy for them to go back to school of any kind. So, they need to be trained on the job, and they need jobs" (Asia Society, 2013).

A central economic committee member of National League for Democracy (NLD) party cum Myanmar Investment Commission (MIC) member states that the vocational high school, agricultural high school, veterinary high school, technical high schools, carpentry school, etc., which were previously existed when he was young and closed by the military government, should be reestablished.

Alternative education (AE) and Non-Formal education (NFE)

Alternative Education: A senior government official from Ministry of Education, says that alternative education (AE) is a potential solution for the early school leavers to continue the basic education, and then to bridge to the vocational training and education. The high proportion of early school leavers in basic education levels is a challenge for the country. It also relates to the country's peace process.

Non-formal Education (NFE): Myanmar has a long history with community-based schools and education systems such as monastic education, Karen community schools, provided by the Buddhist monasteries and churches, etc. While public schooling is not available in many rural regions, there is a monastery in nearly every village (UNESCO, 2002). Traditionally, monastic education is characterized by non-formal education.

Many universities provide short-term courses in some areas such as management and administration, business law, computer science, GIS and Remote Sensing, and information technology, among others. And, there are many private sector training centers and institutes providing short courses in business and management, language studies, computer training programs, vocational training programs, etc. There are some non-formal training programs being initiated and offered by non-governmental organizations (NGOs), with international funding. Apart from those limited activities, there are no particular NFE laws and policies and active non formal educational institutions in Myanmar.

Education Reform

Lwin (2007) states that democracy cannot move forward in Myanmar without education reform. He suggests a decentralized education system from national to classroom level. He promotes 'thinking classrooms' to encourage young people to become democratic citizens. He advocates providing training and professional development for teachers to ensure quality education and to build local capacity, which will meet immediate national needs.

Since 2012 with an increasing need for such human capital, the Myanmar has put the renewal of the education system a national priority. With a Comprehensive Education Sector Review (CESR), then, a National Education Sector Plan (NESP), an enlarged budget, a new national education law and the removal of public school fees, major reform of the entire education sector is well under way.

A regional Minister is very much encouraged with the launch of National Education Strategic Plan (NESP) 2016-21. So does a senior government official from Ministry of Education, They both state that this is the new chapter of education and national human resource development sector for Myanmar. The new NESP has many transformational changes which they both believe will bring the positive effects and benefits to the people, developing the educated human resource, and contributing to the long term socio-economic development of the country. They mentioned about the change of the curricula, from the traditional rote-learning to the student centered approach, helping the students to develop the 21st century knowledge and skills.

But, significant challenges still remain.

Hayden & Martin (2013) states that the physical condition and human resource capacity of the Myanmar's education system is poor by any standard, and teachers, whether in schools, colleges or universities, have few opportunities and little incentive for professional development. They note that a process of recovery is getting underway, but they concern that it will take years before significant improvements are evident. They pointed out three priority areas for immediate attention; (i) funding (ii) more support to the primary schools teacher, and (iii) development of Technical and Vocational Education and Training (TVET).

The central economic committee member of NLD party cum the member of MIC states that he has noted that all the activities in human resource development or education are still very much centralized. He strongly states that it should be decentralized, and localized or regionalized.

The basic education department has more than 400,000 staff including 370,000 teachers. Out of those teachers, 85% are female teachers. The education sector employs about 30% of total number of government employees. Many other government ministries provide their employees many other facilities, such as housing, transportation, etc., apart from the salary and compensations. But, teachers from basic education usually don't receive such facilities as compensation package. It is a challenge for the government to increase the salaries of teachers, to provide the transportation allowance and accommodation to the whole population of teachers, because it will require a significant amount of additional budget or funding, in addition to current budget.

One participant in the focus group discussion, a primary school teacher, expresses that the primary schools have no enough budgets to buy the teaching aids by themselves.

Two thirds or 67% of participating university students answer that their parents strongly involve in their application process of universities, and which universities they should apply for and in which order.

Many students in Science and Arts universities and Universities of Distance education are studying only for the sake of graduation, to have a nice picture with a beautiful graduation gown, and to put it in the visible place of their house (Interview Transcript #FGI1_notes; #FGI3. 145-150; FGI4. 218-230).

And, most of the parents want their children to be medical doctors or engineers or computer professionals. There are many medical doctors who didn't want to be medical doctors, but they followed their parents' command or wish, and then become medical doctors. So do many engineers, and computer graduates. After the university studies, they change their careers, like doing business or enter into politics, etc. The purpose and value of education has been miserable. The quality and relevancy of the education have to be rectified and revitalized.

A senior official from Ministry of Industry states that teaching approach should be child centered approach (CCA), or student centered approach (SCA), instead of teacher centered approach which currently being practiced.

The teacher from the education college expresses that she is very happy to learn the new teaching techniques and methods, like CCA / SCA, and being eye-opened while attending a series of training workshops British Council (BC) sponsored. But, she, together with the other teachers who attended those training workshops, still have to train the teachers-to-be students at the education colleges to experience those new approach teaching methods. It will take time and challenging; before these new (and existing) teachers change the way they teach the students in the classrooms (Interview Transcript #FGI03. 246-283).

National Education Strategic Plan 2016-21 (MOE, 2017) reminds that even the basic education reforms will need to be implemented over a period of at least ten years in order to become fully established in schools across the country. There are more than 330,000 teachers in Myanmar's basic education schools and it will take at least ten years to train and support them to adopt new interactive teaching and classroom assessment methods.

Challenges for NHRD

Apart from the above mentioned priority areas in the education reforms, there are a few other underlying issues and challenges for NHRD as follows;

- Under-educated and under-skilled workforce: The advantage of possession of a large workforce and a youth bulge may not be realized as the majority of them are under-educated and under-skilled.

- Traditional Teachers: Tin (2008) notes that teachers are as a group, highly conservative and traditionalist, and tend to resist change. He mentioned an example that the two Departments of Basic Education and the Myanmar Education Research Bureau had held training sessions on new methodologies and classroom strategies to counter rote learning but with little success. When the teachers returned to their classrooms, they reverted to their old methods after a time.

- Authoritarianism: Tin (2008) pointed out that Myanmar has had an extreme authoritarianism since the early 1960s, as well as suffering the indignity of colonial rule and the long legacy of rule by extreme authoritarian kings and feudal lords, and accordingly it is extremely difficult to break out of the mold.

- Knowledge, skills and competencies lagging behind: Lorch (2008) states that international organizations and Myanmar businesses experience, when recruiting or interviewing, the lack of skills and competencies of the young people. The younger, the lower, he states.

- Critical thinking and creativity missing: Lorch (2008) states that as a result of a continuing erosion of the education system, the critical thinking and creativity are missing in the current education system and the students. This erosion is characterized not only by a lack of access to, and the quality of, education, but by 'a system that suppresses critical thinking and...discourages creativity', he stated.

- Teachers-training degraded: Lorch (2008) also states that teachers and professors often lack basic qualifications, because the state-run teacher-training system has been steadily degrading.

- Low level of Multi-stakeholders engagement in Education: Along the socialist and military regime time, the role of the international aid community in the field of education was limited, as the government is highly suspicious of international involvement. Even though civil-society groups have managed to bridge some of the gaps that exist in the formal education sector, they lack the capacity to provide a substitute for a functioning state-run education system. The NHRD in transitioning Myanmar is not only for the government to be responsible, but it is very much required that many other stakeholders must get involved. The stakeholders may include but not limited to the union government, regional government, civil societies, private sectors, industrial zones management committees, industries, non-government organizations, universities, academic institutions, teachers, students, village heads, community leaders, experts, training centers, etc. (Interview Transcript #02. 464 – 468). The NHRD must be dynamic. It must be adaptable to changes.

- Ethnic Diversity: Ethnic diversity is another distinctive characteristic of Myanmar (Hayden & Martin, 2013). It has as many as 135 different ethnic nationalities within its borders (Oxford Burma Alliance, 2013). Burmans/ Bamar accounts for 68% of population, and other ethnic minorities, accounting for much smaller proportions of the population, include Shan (9%), Karen (7%), Rakhine (4%), Chinese (3%), Indian (2%) and Mon (2%). Different ethnic groups have their own history, culture and language. The governments of Myanmar in the past traditionally emphasized a centralized Myanmar language education system that some ethnic group members believed provided little space for their languages, cultures and ethnic identities to be preserved, practiced and valued. Subsequently, conflicts arise. As Bamar/ Burmese/ Myanmar language is not their mother tongue language, ethnic minority children drop out in the very early stage of basic education.

- Educational Attainment: Primary school education is compulsory, but the net enrolment rate in primary school in 2010-11 was estimated to be only 84.6% (MOE, 2012).

Many of them drop out even in primary school, i.e., still very early stage of basic education. The results from the 2014 Myanmar Census show that educational attainment overall is quite low: almost two thirds (61.3 per cent) of the population aged 25 and over had either only progressed to primary level education (completed or incomplete) or had no education at all; and, there are very little option for them to continue education and training (DOP, 2017). Secondary education poses a critical "choke point" in Myanmar's education system and requires reforms of curriculum, teaching, and student assessment.

- **Mindset:** It has been frequently debated during the individual interviews and focus group interviews that because the whole society in transitioning Myanmar experiencing a notable shift from the closed society, socialist mechanism and dictatorship government to open society, market economy, and democratic government, there is an urgent need for mindset change in the various areas of work places, both private and government organizations.

- **Resource Dependency:** Myanmar's abundant natural resources include oil and gas, minerals like gold, copper, silver, lead, zinc, tin, antimony, iron, etc., gemstones like jade, rubies, sapphires, etc., forest and timber, water resources like rivers, water ways, delta, and lakes, and unusually fertile land for agriculture. Myanmar survived on those natural resources. As per census in 2014 (DOP, 2015), transitioning Myanmar has a population bonus or population advantage, with a strong percentage of young population and the population in the active age groups (15 – 64 years) being 67% (see Fig. 1). Within this group those aged 5-14 are the largest group and forms a "Youth Bulge" that can offer a possible "demographic dividend". To reap the benefits in the next 10-15 years, there needs to be targeted investments and work opportunities for young people, when they enter the working age. UNFPA urges Myanmar to act quickly and decisively in order for the country to prepare for reaping the demographic dividend. Investing in a highly educated workforce as well as creating equal job opportunities for boys and girls should be at the forefront of the Myanmar on-going social economic transition (UNFPA, 2015).

- **Managerial Capacity:** The senior government official of Ministry of Education (MoE), states "The education reform is ongoing, but we need the effective and efficient management. We need to upgrade managerial skills of our senior government officials, project leaders, key stakeholders, to make the reform process efficient and effective."

- **Disasters:** Myanmar is prone to natural disasters such as floods, cyclones and earthquakes. In May 2008, Cyclone Nargis struck the Ayeyarwady delta, killing nearly 140,000 people and impacting about 2.4 million, according to official figures. In 2015, flooding and Cyclone Komen killed dozens and impacted millions of people. Most recently, the United Nation's 2016 Global Climate Risk report identified Myanmar as one of 20 countries in a "conflict-climate nexus", a combination of severe environmental vulnerability along with pre-existing social fragility and weak institutions.

Perspectives of NHRD

The study is carried out via the case study approach. The literature review, document review, stake-holders interviews and focus groups discussions provided the perspectives of NHRD in transitioning Myanmar, being summarized as follows:

- NHRD is an important foundation and driving force for the long term sustainable development of the country.
- But, the current situation of NHRD in Myanmar is not satisfactory, and it will be a chocking point for the sustainable development of the country.
- The foundation for NHRD is education.
- NHRD Starts from the pregnancy and early childhood until the end of life.

- NHRD must be comprehensive, with sectorial and regional development plans developed by the stakeholders, and then integrated and linked together.
- The other important areas for NHRD are development of youth, investment in human capital, development of critical thinking, creativity and innovation, physical trainings and sports, and development of life skills.

Emerging NHRD in Transitioning Myanmar

The National Human Resource Development (NHRD) has not been planned, implemented, or operated in proper manner in the last decades. The socialist and military government had made the education system failed, and the education reform process is in its early stage. TVET development is also in infant stage. Early childcare services, childhood development programs, and public healthcare programs are also in their early stages of development. In such a nutshell, virtually, there is no National Comprehensive Human Resource Development strategy and plan properly developed yet, and the NHRD activities are in sectoral divide, and not linked or integrated each other.

The transition of the country is very much exciting for the citizens of Myanmar. People are hopeful. People expect positive changes in various aspects of life. People expect development in all socio-economic areas from the new government, and especially from the new leader, Daw Aung San Suu Kyi. People feel freedom, even though there are still limitations of freedom of speech and media.

Return of Myanmar Diaspora or Brain Gain

There are about 4 - 5 million Myanmar migrant workers (about 10% of the population) abroad. Majority in Thailand and Malaysia, as factory workers, and some professional workers (like engineers, IT professionals, accounting, etc.,) working in Singapore and a few other countries. Those international migrants or 'Myanmar Diaspora', gaining knowledge, experience, skills and accumulated financial resources would be useful for Myanmar's development as and when they eventually return to their place of birth. They must be attracted to come back to Myanmar, to participate in the development efforts, and to grow together, with right scheme and motivational incentives at a point of sufficient economic growth.

The minister of Mandalay regional government states that there is a trend of Myanmar migrant workers coming back to Myanmar, since the beginning of the transition.

The Myanmar Professor at a University in United States, narrates his efforts to contribute to the development of the country, and his experience that he was warmly responded by State Counsellor Daw Aung San Suu Kyi that he should come and share his experience with the top cabinet ministers, when he wrote to her that he would like to share his knowledge and ideas especially in education, environmental conservation, and forestry management areas. Accordingly he visited Myanmar, and contacted her office, and then it was arranged for him to meet with those related cabinets Ministers, one after another, to share his knowledge on those mentioned areas. He says that at the moment he cannot come back to Myanmar for good yet, as of socio-economic reasons. But, he will come back frequently and will share his knowledge and ideas gained from studies abroad, and working abroad.

Learning by Doing, Doing by Learning

Starting from the beginning of the transition, there are international cooperation and assistance in many professional and technical areas, where Myanmar professionals, executives, academia, and technicians are in the process of learning by doing, and doing by learning, through many capacity building, capacity development programs going on in various areas, in various government ministries, civil societies and private sector, by various

development programs, by various development partners. The expert trainer from UN institute express that now the country is opening up and there are so many international donors coming in and giving financial and other support for these human resource development.

A lecturer from Mandalay Technological University is also happy that the country is opening, and he has been getting the opportunities to learn more, and to work with international partners, and also to work with other government departments. He works with GIS (Geographic Information Systems) and remote sensing technologies, and the author interviewed him at Chiang Mai, Thailand, while he was attending the regional science meeting on land cover land use change studies using GIS and remote sensing technologies, being organized by NASA (the National Aeronautics and Space Agency) of United States together with NARIT (National Astronomical Research Institute of Thailand) and many other academic institutions and research organizations. He states that we are legged behind too many years and so we need to update and upgrade our knowledge and skills and competencies, and so that to grow properly, we need to learn how to do things with the latest technologies and updated knowledge, in such a way of learning by doing, and doing by learning.

Proposed NHRD Model for Transitioning Myanmar

The proposed model of the NHRD for the transitioning Myanmar is presented in infographics in figure 3.

The background shape represents the population pyramid of Myanmar as of 2017. (See Figure 2. Population Pyramid of Myanmar -2017).

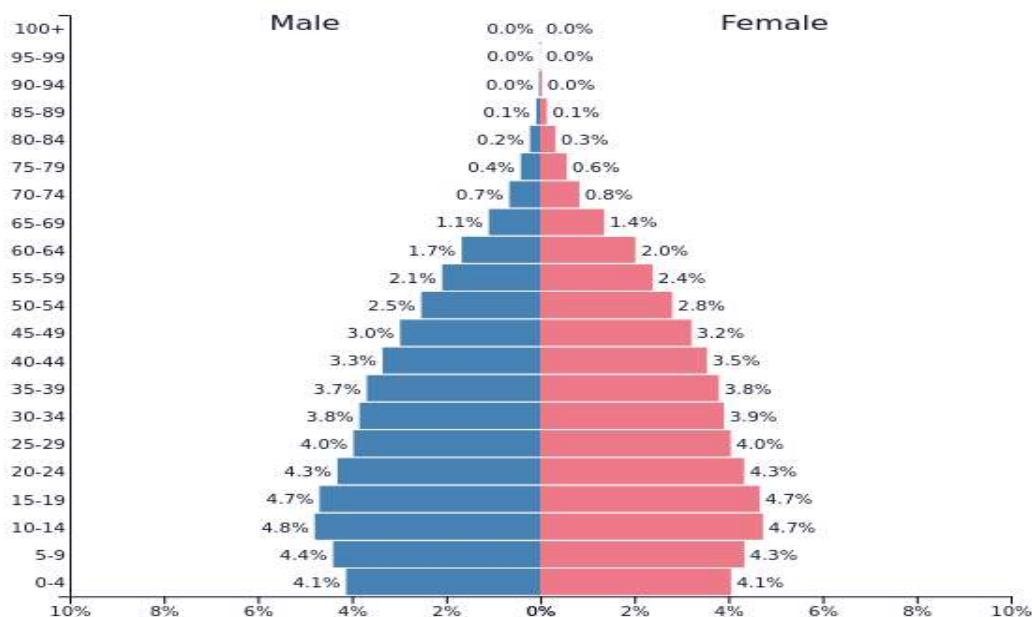


Figure 2. Population Pyramid of Myanmar – 2017 Retrieved from Population Pyramid of the World Website ; <https://www.populationpyramid.net/myanmar/2017/>

The right-sided labels of the proposed NHRD model represent the age range of the population. The age-groups are colored, as of pregnancy, early-childhood, schooling age, university/ college age, working age, and post-working age. Even though the whole population didn't go through each level of schooling, and the university/ college education, it

has been colored for the purpose of distinction of the age-groups. But, in the box for that age-groups, the focus areas of attentions for those age-groups have been presented. For example, the TVET (Technical Vocational Education and Training) has been in the box for schooling aged group and the university/ college aged group. It is because there are many young people out of school and not going to high school nor the university and colleges nor any other higher education. They should be equipped with the technical education or vocational education. The dual education is also mentioned as many of them have been working and they need to be trained and equipped with more skills and training by dual education learning and working in parallel.

The population advantage of emerging youth bulge has been emphasized as a source of working population for coming decades as resources for growth. This demographic dividend or population advantage or population bonus will not last forever. This youth bulge will transform to the older age group as dependents, and then the population advantage will be expired. So, the country has to reap the advantage quickly by equipping the youth with the necessary skills and competencies to maximize the productivity and to contribute to the development process of the country. The potential brain gain effect by returning Myanmar Diasporas working abroad also has been presented as an important input to the national human resources to support and strengthen the development efforts.

Proposed National Human Resource Development (NHRD) model for Transitioning Myanmar

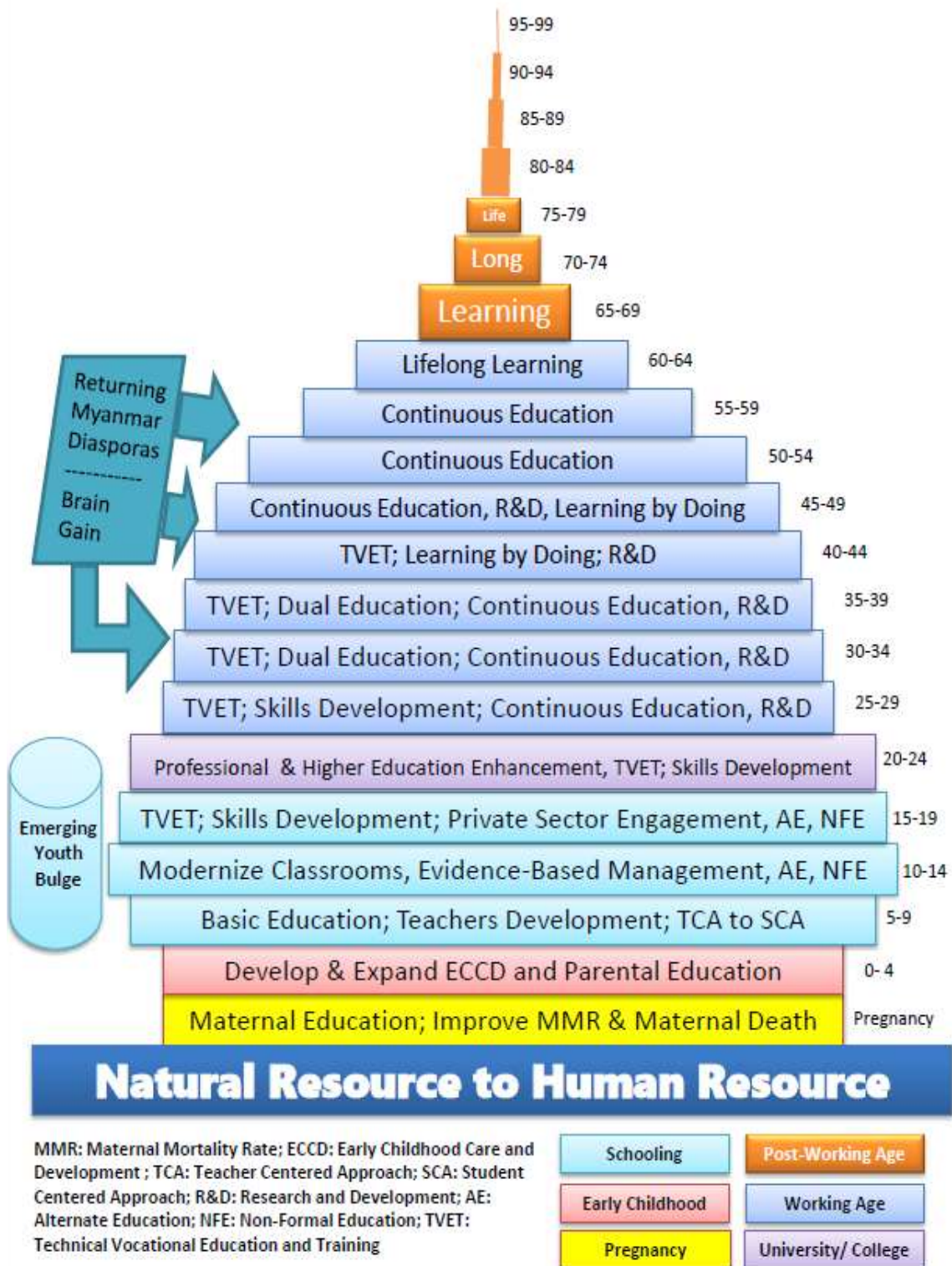


Figure 3. Proposed National Human Resource Development (NHRD) Model for Transitioning Myanmar

Recommendations

It is important to develop the conceptual framework, and then strategies and plans for the future sustainable development of the national human resource and then consequently the comprehensive socio-economic development of the country. And, Myanmar needs to grasp the chances of taking the population bonus advantage and population divide by investing in education and skills development in emerging youth bulge. It is also important to attract the Myanmar migrants abroad or 'Myanmar Diaspora' to come back to Myanmar, to participate in the development efforts with the accumulated knowledge, experience, skills and financial resources, to grow together. This must be properly carried out with right scheme and motivational incentives at the point of sufficient economic growth.

The strategic, policy and tactical recommendations for a long term, sustainable and holistic national human resource development (NHRD) in Myanmar have been laid out.

The first strategic recommendation is to switch the dependency on the natural resources to the human resource for the sustainable development of the country. It has been suggested to establish a National Human Resource Development Council (NHRDC) for the interactive development of country's National Human Resource Development (NHRD) policy, strategic conceptual framework, and then the NHRD Plan, with the stakeholders' inputs, and lessons learnt from regional and similar other countries. Then, it also has recommended developing a National Skills Development Fund (NSDF) to equip the youth with the necessary skills required for the incoming jobs with opening the country. It also advises to create an attractive environment to bring back the Myanmar Diasporas abroad. The coordination among the government ministries, regional governments, encouraging private sector to get into the education, training and vocational training areas, effective utilization of today's technologies including the rapidly growing mobile phones, internet, web-based teaching-learning, smart TVs, etc., decentralization of education sector management, budget allocation priorities and then encouraging to cooperate with the ASEAN and its member countries.

Tactically, the following recommendations are made:

Education Management

- to utilize the evidence-based decision making tools
- To expand early childhood care and development centers (ECCD) for better reach and coverage, by bringing in all the stakeholders including government ministries, private sector, regional and local governments, township level authorities

Teachers Development

- to develop the teachers, with a motto "Teachers First"
- to make incentive and motivational programs for outstanding teachers such as trips to visit other cities in Myanmar, industry visits, social and professional visits to foreign countries, etc., providing them exposure as well,

Basic Education

- to encourage the schools to engage with the local communities, private sector, local industries, by making the school field trips, inviting the local industries to schools to meet and greet with the students, engage with the students,
- to enhance the schools not only in physical aspects but also in the aspects of the morale and motivation of the teachers and students by means of providing as much as possible their basic needs, social needs, linking up with communities, linking up with outside worlds, recognition of their efforts, and giving them the warmth of being in the school and being in the education sector
- to provide the education to the rural communities gearing towards their needs;
- to develop student centered approach in classrooms in both basic and higher

educations

- to encourage and bring in the private sector to engage and invest in education as (social) business

Higher Education

- to revitalize the campus life in higher education institutions, as of being lost it for many years under the military government
- to promote and encourage research activities
- to decentralize the management and administration of universities and institutes, and provide the autonomy
- to give the students the right to choose and apply to any higher education institution as he or she like, making him or her more passionate with the studies which he or she chooses
- to gradually provide the right to collect the competitive tuition fees by the individual higher education institutions within a specified range
- to encourage the cooperation and collaboration with international academic institutions

Skills Development

- to develop diverse means solutions for alternative, non-formal, and vocational education areas,
- to support (administrative, political, technical and financial) and encourage the private sector to engage in the skills development training as social business providing the demand-driven skill trainings,
- to develop digital platforms for non-formal education such as eLearning systems, distance learning programs, mobile apps and broadcasting education programs especially for people in the rural and remote areas and the dropped-out students engaged in work-forces,
- To work out possible arrangements to start vocational trainings in the mornings or in the evenings and in the weekends in current education institutions' buildings
- To encourage private sector to invest in technical vocational training
- To develop the model technical and vocational training centers in a few major cities, then to transform them self-dependent social enterprises, and then to multiply them into other cities and towns
- To foster and support those vocational trainings in the hot-spot areas of economic development such as hotel and tourism, agriculture and livestock, textile, construction, industry welding, industry automation, electrical and electronic technicians, etc.,
- To explore and start possible PPP (public private partnership) ideas, programs and projects for technical and vocational education training areas
- To support and encourage education/ industry links, to fulfil the human resources requirements of the industries and businesses and to link the education with the world of works

Life Long Education/ Learning Nation

- to develop the culture of life-long learning nationwide
- To effectively help all the citizens learning continuously
- To make the nation "The Learning Nation"

Suggestions for Future Inquiry and Discovery

The exploratory nature of this research provided a limited applicability of the findings. Therefore, further empirical research needs to be carried out on the emergent constructs of NHRD in the transitioning Myanmar in order to extend the applicability of these findings. For example, a central focus of the extended empirical research on NHRD in transitioning Myanmar should deal with issues related to the possibility of improving skills and competencies development of the working aged people, i.e., two thirds of the population, aiming for them for better jobs.

It is further suggested that more research be carried out in the following specific areas which this study has little touched upon ;

- The role of Alternative Education (AE) for the NHRD in Transitioning Myanmar
- The current status, perspectives and challenges of vocational education for the NHRD in Myanmar
- The opportunities and challenges by AEC (ASEAN Economic Community) to the NHRD in Myanmar
- Change and development of moral characteristics of students in Myanmar universities and colleges
- Push and pull factors for Myanmar migrant workers to come back to Myanmar contributing in the construction and development of the country
- Occupational supply and demand analysis of Myanmar

Conclusion

NHRD in transitioning Myanmar has various stakeholders and various driving forces, defining its environment and system, in a dynamic fashion. There are progressive developments of NHRD system in the transition, but coupling with the challenges ahead as well. There are opportunities for growing by learning and doing together with the development partners. It is also important to develop the conceptual framework, and then strategies and plans for the future sustainable development of the national human resource and then consequently the comprehensive socio-economic development of the country. Myanmar needs to grasp the chances of taking the advantage of population bonus advantage and population divide by investing in education and skills development. It is also important to attract the Myanmar migrants abroad or 'Myanmar Diaspora' to come back to Myanmar, to participate in the development efforts with the accumulated knowledge, experience, skills and financial resources, and to grow together. This must be properly carried out with right scheme and motivational incentives at the point of sufficient economic growth.

It is to be concluded that the harmonized, integrated and comprehensive national human resource development is important and critical for the sustainable development of Myanmar in its transition from old Myanmar to new Myanmar.

References

- Asian Development Bank. (2012). Myanmar in transition: Opportunities and challenges. Retrieved from <https://www.adb.org/sites/default/files/publication/29942/myanmar-transition.pdf>
- Asian Development Bank. (2014). Human capital, infrastructure key to Myanmar growth, Says ADB [News release]. Retrieved from <https://www.adb.org/news/human-capital-infrastructure-key-myanmar-growth-says-adb>
- Becker, G.S. (1975). *Investment in human capital: Effects on earnings. Human capital: A theoretical and empirical analysis, with special reference to education* (2nd ed., pp. 13 – 44). Retrieved from <http://www.nber.org/chapters/c3733.pdf>
- Bourdieu, P. (1986). The forms of capital. In: J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241-258). New York: Greenwood Press.
- Cho, E., & McLean, G.N. (2004). What we discovered about NHRD and what it means for HRD. *Advances in Developing Human Resource*, 6(3), 382-393.
- Department of Population_DOP. (2015). *The 2014 Myanmar population and housing census highlights of the main results census report volume 2 – A*. (Department of Population Ministry of Immigration and Population Office No. 48) Retrieved from <http://myanmar.unfpa.org/sites/default/files/pub-pdf/Census%20Highlights%20Report%20-%20ENGLISH%20%281%29.pdf>

- Harbison, F., & Myers, C. A. (1964). *Education, manpower, and economic growth: Strategies of human resource development*. New York: McGraw-Hill.
- Hayden, M., & Martin, R. (2013). Recovery of the education system in Myanmar *Journal of International and Comparative Education*, 2(2). doi: 10.14425/00.50. 28
- Ireland, G. V., & Van Benthuyssen, R. (2014). Contemporary issues in EFL education in Myanmar. *Journal of Bunkyo Gakuin University, Department of Foreign Languages*, 14, 151-160.
- Kyi, A.S.S. (2013, May 9). Aung San Suu Kyi speech: support Burma's higher education. Retrieved <https://www.britishcouncil.org/voices-magazine/aung-san-suu-kyi-speech-support-burmas-higher-education>.
- Lorch, J. (2008). The (re)-emergence of civil society in areas of state weakness: The case of education in Burma/Myanmar. In M. Skidmore, & T. Wilson (Eds.), *Dictatorship, disorder and decline in Myanmar* (pp. 151-176). Canberra: ANU E-Press.
- Mariano, C. (2000). Case study: The method. In P. Munhall, & C. Oiler Boyd (Eds.), *Nursing research: A qualitative perspective* (2nd ed., pp. 311-337). Sudbury, MA: Jones and Bartlett.
- Mieno, F. (2013). Toward Myanmar's new stage of development: Transition from military rule to the market. *Asian Economic Policy Review*, 8(1), 94-117. doi:10.1111/aepr.12009
- Ministry of Education _ MOE. (1956). *Octennial report on education in Burma (1947-48 to 1954-55)*. Myanmar: Rangoon, Superintendent, Government Printing & Stationery
- Ministry of Education _ MOE. (2014). Comprehensive Education Sector Review 2012 ~ 2014. Retrieved from http://themimu.info/sites/themimu.info/files/documents/Plan_Edu_CESR_Pamphlet_07Sep12.pdf
- Ministry of Education _ MOE. (2015). Myanmar National EFA Review Report (2015) Retrieved from <http://unesdoc.unesco.org/images/0022/002297/229723E.pdf>
- Myint, M. (2016). *Rejuvenating Myanmar education*. Yangon: Ywet Sein.
- Oxford Burma Alliance. (2013). *Ethnic nationalities of Burma*. Retrieved from <http://www.oxfordburmaalliance.org/ethnic-groups.html>
- Paprock, K. E. (2006). National human resource development in transitioning societies in the developing world: Introductory overview. *Advances in Developing Human Resource*, 8(1), 12-27. doi:10.1177/1523422305283055
- Save the Children. (2015, April 9). *Holistic development for young children through early childhood care and development*. Retrieved from <https://myanmar.savethechildren.net/news/holistic-development-young-children-through-early-childhood-care-and-development>
- Schultz, W. T. (1961). Investment in human capital. *The American Economic Review*, 51(1), 1-17.
- Smith, A. (1776). *An inquiry into the nature and causes of the wealth of nations*. London: W. Strahan.
- Tin, H. (2000). Myanmar education: Status, issues and challenges. *Journal of Southeast Asian Education*, 1(1), 134-162.
- United Nations Educational, Scientific and Cultural Organization _ UNESCO. (2011). *World data on education, Myanmar*. Retrieved from <http://www.ibe.unesco.org/sites/default/files/Myanmar.pdf>
- United Nations Population Fund _ UNFPA. (2015). *Making the most of Myanmar's youth for future development of country*. Retrieved from <http://myanmar.unfpa.org/news/making-most-myanmar%E2%80%99s-youth-future-development-country>

United Nations Children's Fund_UNICEF. (2011). *Multiple indicator cluster survey 2009-10*. Retrieved from http://reliefweb.int/sites/reliefweb.int/files/resources/MICS_Myanmar_Report_2009-10.pdf

United Nations Children's Fund_UNICEF. (2017). *Quality Basic Education Programme*. Retrieved from https://www.unicef.org/myanmar/education_20838.html