The 3rd Roi Et Rajabhat University National and International Conference on Education and Technology Research 2019

“RERU ICET III : Innovative Local Development”

July 12th, 2019

Maha Vajiralongkorn Crown Prince 60th Anniversary Convention Hall,
Roi Et Rajabhat University, Thailand

Proceedings
PROCEEDINGS

The 3rd Roi Et Rajabhat University National and International Conference on Education and Technology Research 2019
(RERU ICET III) : Innovative Local Development

July 12th, 2019
at the Crown Prince Maha Vajiralongkorn 60
Convention Hall, Roi Et Rajabhat University, Thailand
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RERU ICET III: Innovative Local Development

Conference Information

On the auspicious occasion of the 20th Anniversary of the foundation of Roi Et Rajabhat University, Thailand, we organize the 3rd Roi Et Rajabhat University National and International Conference on Education and Technology Research 2019 (RERU ICET III) on July 12th, 2019 at Roi Et Rajabhat University. Under the theme “Innovative Local Development”, this year’s conference provides an open area of discussion for researchers, and budding students in Thailand and across the globe in the age of 21st-century literacies. Our visions for the participants of this conference are to contribute to the graduate students and scholars to present and exchange their learning outcomes.

Roi Et Rajabhat University, therefore, is pleased to invite researchers, educators and participants from all over the world to contribute their knowledge and wisdom with regards to research works. The contributions can include research activities, case studies or practices which will help to inspire interest in both the theory and practice of various topics. We welcome and invite presentations on any aspect of the theme including, but not limited to, the following fields:

- Education
- Humanities and Social Sciences
- Business Administration and Economic
- Science and Technology
- Nursing and Health Sciences

The objectives of this conference aim to:
- Provide an opportunity for academics to present papers on traditional and contemporary features of their various studies,
- Promote academic research on education and technology features of their various studies,
- Enhance cooperation and promote better understanding among people of different culture.
Organizers

Roi Et Rajabhat university, Roi Et, Thailand
In cooperation with:

- National Research Council of Thailand
- Office of Higher Education Commission
- Buriram Rajabhat University
- Rajabhat Mahasarakham University
- Udon Thani Rajabhat University
- Ubon Ratchathani University
- The Roi Et Chamber of Commerce
- Shimane Rehabilitation College, Japan
- Guizhou Education University China
- Quangxi University for Nationalities, China
Peer Reviewers

Education
- Prof. Dr. William R. Barratt, Indiana State University, United State of America
- Prof. Dr. Melinda Miller, Sam Houston State University, United State of America
- Assoc. Prof. Dr. Nancy K. Votteler, Sam Houston State University, United State of America
- Assoc. Prof. Dr. Vickie J. Mitchell, Sam Houston State University, United State of America
- Asst. Prof. Dr. Andrey Koptelov, Sam Houston State University, United State of America
- Asst. Prof. Dr. Nara M. Martirosyan, Sam Houston State University, United State of America
- Asst. Prof. Dr. Susan Troncoso, Sam Houston State University, United State of America
- Asst. Prof. Dr. Jolene Reed, Sam Houston State University, United State of America
- Dr. Hatai Noisombut, Roi Et Rajabhat University, Thailand

Business Administration and Management
- Assoc. Prof. Dr. Kornchai Phornlaphatrachakorn, Mahasarakham University, Thailand
- Dr. Chootima Longjit, Kasetsart University Sriracha Campus, Thailand
- Dr. Garoon Pongsart, Roi Et Rajabhat University, Thailand
- Dr. Anon Khamwon, Khon Kaen University, Thailand

Humanities and Social Sciences
- Prof. Dr. Leslie B. Baratt, Indiana State University, United State of America
- Prof. Dr. Luo Yaohua, Central China Normal University, People's Republic of China
- Assoc. Prof. Chang Di, Guizhang University, People's Republic of China
- Dr. Zhao Tao, Guizhou Education University, People's Republic of China
- Dr. Douangchampy Vouthisouk, Ministry of Information Culture and Tourism, Laos
- Dr. Fenty Siregar, Universitas Kristen Maranatha, Republic of Indonesia

Science and Technology
- Assoc. Prof. Chawalit Thinvongpituk, Ubon Ratchathani University, Thailand
- Dr. Siti Noor Suzilah Bt Maqsood ul-Haque, Fakulti Kejuruteraan Kimia University, Malaysia
- Asst. Prof. Dr. Benjapon Kunlanit, Mahasakham University, Thailand

Nursing and Health Sciences
- Emeritus Professor. M.D. Sompon Phothinarm, Roi Et Rajabhat University, Thailand
- Asst. Prof. Dr. Darinee Suwabhabh, Roi Et Rajabhat University, Thailand
Message from The Governor of Roi Et Province
Mr. Wanchai Kongkasem

Dear RERU ICET III participants,

I feel honor to be invited to deliver welcoming address at the 3rd Roi Et Rajabhat University National and International Conference on Education and Technology Research 2019 and also It is a great pleasure and honor for me personally to have an opportunity to welcome all of you to Roi Et province.

Roi Et Province is located in the middle of Isan, the northeastern of Thailand where is one of Isan’s oldest cities carrying a long history and retaining a charm and sense of religious, culture, and identity all its own. Our province is famous for high quality Thai Jasmine rice and also known for traditional textiles and wickerwork.

Nowadays, innovation becomes critical parameters for local development. It helps support struggling region and promote growth across municipalities with varying resources and needs. RERU ICET III 2019 under the theme Innovative Local Development is one of the tools to support local development through research finding. Therefore, today’s conference is a very meaningful occasion where we can share experiences and discussion to promote urban and local community.

Once again, welcome all of you to the 3rd Roi Et Rajabhat University National and International Conference on Education and Technology Research 2019 or RERU ICET III 2019.

I am very much looking forward to your proposals and discussions. But besides that, I am wishing all of you a very pleasant stay and a great time in Roi Et province.

Sincerely,

Mr. Wanchai Kongkasem
The Governor of Roi Et Province
Message from President of Roi Et Rajabhat University Council
Emeritus Professor. M.D. Somporn Phothinarm

Dear RERU ICET III participants,

It is my honor and privilege for me to welcome you for the opening of the 3rd Roi Et Rajabhat University National and International Conference on Education and Technology Research 2019 (RERU ICET III 2019): Innovative Local Development.

In the 21st century, new technology has entered into virtually all areas of educational practices. I said that because implementing technological innovation has become a primary information resources used in research and in many circles of education. The Theme “Innovative Local Development” implies using innovation to help develop local areas communities, to investigate the concept of local and rural development, and to study the governance context in social innovation in rural areas. To successfully benefit from technology applications, it is essential that educators/researchers prepare themselves ready for transforming their practices and keep identifying effective ways for conversion in their research.

Therefore, this conference is one of the resources for disseminating the research where researchers share and exchange their studies and experiences to promote sustainable development in education.

Once again, let me also express my appreciation to Graduate School, the Research and Development Institute, Foreign Affairs Department, and Office of Academic Affairs and Registration, Roi Et Rajabhat University for their strong support in organizing this event.

Ladies and gentlemen, thank you for your time. I wish you all successful project and have a great time.

Sincerely,

Emeritus Professor. M.D. Somporn Phothinarm
President of Roi Et Rajabhat University Council
Message from the President of Roi Et Rajabhat university
Asst. Prof. Chaloey Pumipuntu, Ph.D.

Dear RERU ICET III participations,

I am very pleased to welcome you to the 3rd Roi Et Rajabhat University National and International Conference on Education and Technology Research 2019 (RERU ICET III 2019): Innovative Local Development

As a local university, we have been trying to organize our university to be a "Source of Knowledge for a Lifetime". We have developed an effective education system; by constantly improving our quality with technology and constant assessment. But the world has changed. Engaging innovation in education can develop necessary practices within a culture of continuous improvement. In order to make ourselves grow stronger and faster in providing knowledge and ability for learners in this competitive world, we open our door and invite you to participate in RERU ICET III 2019 and share information and ideas about all aspects of education and technology which have a strong effect on learning. This conference is also used to renew old friendships, begin new ones, and develop personal contacts between those of common interest.

We are honored to have three valuable invited keynote speakers, Dasho Tashi, Deputy Lord Chamberlain Queen’s project office, His Majesty’s Secretariat, Bhutan, Prof. Dr. Will R. Barratt from University of Malaya, Malaysia, and Associate Professor Dr. Chang Di, from Guiyang University, China who will come to share their experiences in the field of education, technology and Innovative local Development.

Once again, let me welcome you to Roi Et, Thailand. We look forward to learning from your discussions and deliberations. As I have noted, we have developed an effective education system which is under constant assessment and improvement. This conference should help us in our endeavors to expand and improve.

Thank you for participating in our 3rd Roi Et Rajabhat University National and International conference on Education and Technology Research 2019.

Sincerely,

Asst. Prof. Chaloey Pumipuntu, Ph.D.
President of Roi Et Rajabhat University
Message from Vice President for Research and International Relations
Garoon Pongsart, Ph.D.

Dear RERU ICET III Participants,

On behalf of Roi Et Rajabhat University, I wish to express my sincere thanks to the Governor of Roi Et Province, President of Roi Et Rajabhat University Council, President of Roi Et Rajabhat University, keynote Speakers, and distinguished guests for having taken the precious time from your busy schedule to inaugurate our conference.

In the past 20 years, RERU has held 3 National and International Conference on Education and Technology Research; ICET I; ICET II; and now ICET III. The conference this year is very special because it falls on the 20th Anniversary of the foundation of Roi Et Rajabhat University.

Nowadays, globalization has changed communication from slow to fast by using modern technologies. This change has affected the economy, society, politics, culture, education, technology, ecology, and the environment. At the same time, researchers strive to examine developing innovation to keep up with the changes and be competitive in the world as well as to drive and develop digital technologies for new innovation and creativity. So, research knowledge is an important tool in the economic and social development of the country. Research potential is an indicator of the value and process of competitiveness and development of Thailand towards learning through intellectual society. Moreover, research knowledge also helps to develop the country to the Thailand 4.0 policy which emphasizes on developing Thailand to be stability, prosperity, and sustainability country.

Roi Et Rajabhat University (RERU) intended to balance theory and practice and also provide researchers and students with understanding of how local communities operate the skills to play a critical role in developing innovative programs to promote social and economic development at a local level. Moreover, we realize the importance of research and creativity by promoting and supporting academicians and students to produce research papers continuously. Therefore, RERU is held “The 3rd International Conference on Education and Technology Research 2019 (ICET III 2019) under the theme of “Innovative Local Development”.

Furthermore, this conference aims to provide a public forum to disseminate research of graduate students and scholars from Thai and international universities as well as to share researcher experiences and ideas about all aspects in the field of education, Humanities and Social Sciences, Business Administration and Economics, Science and Technology, and Nursing and Health Sciences which have a strong effect on learning.

Sincerely,

Garoon Pongsart, Ph.D.
Vice President for Research and International Relations
Message from RERU ICET III organizers

Greeting to all participants and welcome to “The 3rd Roi Et Rajabhat University National and International Conference on Education and Technology Research 2019 (RERU ICET III 2019): Innovative Local Development.” Roi Et Rajabhat University, Thailand

This conference aims to give international researchers opportunities to share the ideas, to form network in one world.

With your support and collaboration, we are assured that we will have meaningful exchanges of the ideas to construct a better form of globalization. Moreover, we would like to thank a delegations and participants who come from a far exchange all experiences.

Sincerely,

RERU ICET III organizers
## Tentative Schedule

The 3rd Roi Et Rajabhat University National and International Conference on Education and Technology Research 2019 (RERU ICET III):
Innovative Local Development

on July 12th, 2019

at Crown Prince Maha Vajiralongkorn 60 Convention Hall, Roi Et Rajabhat University, Thailand

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### Friday, July 12th, 2019

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<tr>
<td>07.30 – 08.45 Hrs.</td>
<td>Registration at Crown Prince Maha Vajiralongkorn 60 Convention Hall, Roi Et Rajabhat University</td>
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<td>09.00 – 09.10 Hrs.</td>
<td>Presentation of Roi Et Rajabhat University</td>
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| 09.10 – 09.40 Hrs. | Opening the conference  
  – Welcoming address by Mr. Dumrong Siriwishaya Imwisate, Vice Governor of Roi Et Province  
  – Welcoming address by Asst. Prof. Dr. Chaloey Pumipuntu, President of Roi Et Rajabhat University  
  – Reporting address by Dr. Garoon Pongsart, Vice President for Research and International Relations  
  Opening address by President of the Roi Et Rajabhat University Council |
| 09.40 – 10.10 Hrs. | – Deliver the trophies to our sponsors and co-host.  
  – Deliver the trophies to RERU Outstanding Researchers  
  Group photo                                                                                     |
| 10.10 – 12.00 Hrs. | Keynote Address in the topic “OGOP: Local Development” (40 minutes)  
  by Dasho Tashi, Deputy Lord Chamberlain Queen’s Project Office, His Majesty’s Secretariat, Bhutan  
  Keynote address in the topic “Enhancing Local Development with Big Data and Smart Management” (30 minutes)  
  by Assoc.Prof. CHANG Di, Guiyang University, China  
  Keynote Address in the topic “Education and Community Development”  
  by Prof. Dr. William R. Barratt, Fulbright Scholar at University of Malaya, Malaysia |
| 12.00 – 13.00 Hrs. | Lunch (Buffet) at Crown Prince Maha Vajiralongkorn 60 Convention Hall                                                                    |
| 13.00 – 17.00 Hrs. | Poster Presentation  
  at Crown Prince Maha Vajiralongkorn 60 Convention Hall, Roi Et Rajabhat University                                                   |
|               | Oral Presentation  
  On the 7th-8th floor, His Majesty the King’s 80th Birthday Anniversary, 5th December 2007 Building                                       |
|               | The Network Forum: Bhutan OGOP, King’s Wisdom for Sustainable Development  
  by Dasho Tashi, Deputy Lord Chamberlain Queen’s Project Office, His Majesty’s Secretariat, Bhutan. On the 9th floor, His Majesty the King’s 80th Birthday Anniversary, 5th December 2007 Building |

Remark: The schedule may be subject to change
Oral Presentation Schedule
On the 8th floor at His Majesty 80th Anniversary Building, Roi Et Rajabhat University

Groups: 1. Education  
2. Business Administration and Economics

Commentators: 1) Professor Dr. William R. Barratt  
2) Assistant Professor Dr. Kowat Tesaputa  
3) Dr. Chootima Longjit  
4) Dr. Garoon Pongsart

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<tr>
<td>1</td>
<td>EDU001</td>
<td>The Development of a Collaborative Network for School-Based Management in Primary Schools Yasothon Province Choosri Tanakun, Wichit Khummantakhu, Kriangsak Srisombut</td>
<td>Thailand</td>
<td>13.00-13.20 Hrs.</td>
</tr>
<tr>
<td>3</td>
<td>EDU006</td>
<td>The development of the curriculum and the good practice of teaching about the professional learning community (PLC) organic production and transforming Hom Mali Rice in Thailand Kochapom Numnaphol Sawang Yukalung Simawan Hompan Surapong Sangrenoo</td>
<td>Thailand</td>
<td>13.40-14.00 Hrs.</td>
</tr>
<tr>
<td>4</td>
<td>BUSI003</td>
<td>A Study of Differences in Factors Affecting Accounting Preparation of Small Entrepreneurs in Muak Lek Sub-District, Muak Lek District, Saraburi Province Pratoomma Puribonboon, Damrong Sattayawaksakul</td>
<td>Thailand</td>
<td>14.00-14.20 Hrs.</td>
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Moderators: 1) Miss Pornmuanpajong Luangwangpho  
2) Miss Duangthip Wongnak
## Oral Presentation Schedule

**On the 8th floor at His Majesty 80th Anniversary Building**

**Group:** Humanities and Social Sciences  
**Room:** 9804

**Commentators:** 1) Professor Dr. Leslie R. Barratt  
2) Dr. Zhao Tao  
3) Assoc. Prof. CHANG Di

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<tr>
<td>1</td>
<td>HU007</td>
<td>Legal Measures for Motorcycle Taxi Professional Promotion in Hatayi Municipality Zone <em>Sattra Keawphang, Thanakan Komronwanit</em></td>
<td>Thailand</td>
<td>13.00-13.20 Hrs.</td>
</tr>
<tr>
<td>2</td>
<td>HU004</td>
<td>Developing English Descriptive Writing Ability by Balancing the Process-Writing and Product-Writing Approaches <em>Wichan Noimuangpuey, Pimyupa Praphan</em></td>
<td>Thailand</td>
<td>13.20-13.40 Hrs.</td>
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<tr>
<td>3</td>
<td>HU005</td>
<td>Analyzing EFL Facilitators’ Interactional Features Used in an Out-of-Class Activity of a University in the Northeast of Thailand <em>Chainarong Thongboonchuen, Pimyupa Praphan</em></td>
<td>Thailand</td>
<td>13.40-14.00 Hrs.</td>
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<tr>
<td>4</td>
<td>HU008</td>
<td>An investigation of English language learning motivation between English-majored students and non-English majored students at Rajamangala University of Technology Isan, Surin Campus <em>Suparat Walakanon</em></td>
<td>Thailand</td>
<td>14.00-14.20 Hrs.</td>
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<td>7</td>
<td>HU010</td>
<td>Students’ perception on the role of the teacher in Project-Based Learning: a case study in Vietnam <em>Le Tan Cuong</em></td>
<td>Vietnam</td>
<td>15.00-15.20 Hrs.</td>
</tr>
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**Moderators:** 1) Mr. Pisit Pinitsakul, 2) Mr. Siphan Yong, and 3) Miss Chantha Ry
**Poster Presentation Schedule**

On the 8th floor at His Majesty's 80th Anniversary Building

Groups: 1. Education  
2. Business Administration and Economics

Commentators:  
1) Professor Dr. William R. Barratt  
2) Assistant Professor Dr. Kowat Tesaputa  
3) Dr. Chootima Longjit  
4) Dr. Garoon Pongsart

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</table>
| 1      | BUSI001| Marketing Mix factors influencing the Purchasing Decision of Smart Phone: Case study of the People in Municipality Buriram  
Lalita Akaram  
Thitikorn Wicha  
Nattharad Khembuppha  
Pongsutham Jimanung  
Thananan Phongharuean  
Raphee Phonginwong  
Lalita Akaram  
Thitikorn Wicha  
Nattharad Khembuppha  
Pongsutham Jimanung  
Thananan Phongharuean  
Raphee Phonginwong  |
|        |        | Thailand                                                              | 14.20-14.40 Hrs. |
| 2      | BUSI002| A Conceptual Model of Knowledge Transfer Capability and Business Performance  
Pattariya Prommarat  |
|        |        | Thailand                                                              | 14.40-15.00 Hrs. |
| 3      | EDU004 | The Self-Efficacy and Self-Regulation Learning Abilities Using Self-Assessment for Student Teacher, Roi Et Rajabhat University  
Saengchan Kalam  
Teerasak Dakaew  
Ariyaporn Kuroda  
Santi Wijakkanalan  |
|        |        | Thailand                                                              | 15.00-15.20 Hrs. |

Moderators:  
1) Miss Pornnuanpajong Luangwangpho  
2) Miss Duangthip Wongnak
Poster Presentation
at Crown Prince Maha Vajiralongkorn 60 Convention Hall
Roi Et Rajabhat University

Group: Humanities and Social Sciences

Commentators: 1) Assoc.Prof.Dr.Channarong Intraraprasert
               2) Dr.Dueanpen Rakpaet

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<tr>
<td>1</td>
<td>HU002</td>
<td>The Divorced and Widowed Protagonists: Sexual</td>
<td>Thailand</td>
<td>13.00-13.20 Hrs.</td>
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<td>Marginalization in Contemporary Thai Novels</td>
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<td>La-ongdaw, Jitpiriyakan</td>
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<td>Nittaya Wannakit</td>
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<tr>
<td>2</td>
<td>HU003</td>
<td>Mistresses in Contemporary Thai Novels:</td>
<td>Thailand</td>
<td>13.20-13.40 Hrs.</td>
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<td>Representations of Marginalized Women in Thai Society</td>
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<td>Thitima Donsomjit,</td>
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<td>Nittaya Wannakit</td>
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Moderators: 1) Mr. Tantikorn Pookertpim
Poster Presentation
at Crown Prince Maha Vajiralongkorn 60 Convention Hall
Roi Et Rajabhat University

Group: Science and Technology
Commentator: 1) Asst. Prof. Dr. Kanokkorn Sirithip

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<tr>
<td>1</td>
<td>Sci001</td>
<td>Comparison of Chemical Composition of Lateritic Soil for Dyed Textile from Loei, Buriram, Mukdahan and Kalasin</td>
<td>Thailand</td>
<td>13.00-13.20 Hrs.</td>
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<td>Yotin Kallayalert, Pannraphat Takolpuckdee, Sasamol Phasuk, Chumphol Busabok</td>
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<td>Preecha Kansawai, Tanawat Somtua, Banchob Wanno, Chanukorn Tabtimsai</td>
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Moderator: 1) Ajan Jutamas Katato
Poster Presentation
at Crown Prince Maha Vajiralongkorn 60 Convention Hall
Roi Et Rajabhat University

Group: Nursing and Health Sciences
Commentator: 1) Asst.Prof.Dr.Darinee Suwabhabh

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<tr>
<td>1</td>
<td>Health001</td>
<td>Effects of Lumbar Stabilization Exercises on Lumbar Erector Spinae Muscles in Vertebral Compression Fracture</td>
<td>Japan</td>
<td>13.00-13.20 Hrs.</td>
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<td></td>
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<td>Keiko Tsuchiya, Tetsu Suzuki, Nao Nakana</td>
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<td>Nao Nakada, Akihiro Matsuura, Naoyuki Nakaso, Keiko Tsuchya, Hiroshi Hagino</td>
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Moderator: 1) Mr. Yuttachak Lumjunjit
Oral Presentation
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<td>The Development of a Collaborative Network for School-Based Management in Primary Schools Yasothon Province</td>
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<td>Choosri Tanakun, Wichit Khummantakhun, Kriangsak Srisombut</td>
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<tr>
<td>EDU003</td>
<td>Chinese Opera Lessons Focusing on Collaborative Learning in Sichuan Conservatory of Music</td>
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<td>Zhang Yanchuan, Promote Danpradit</td>
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<td>EDU006</td>
<td>The development of the curriculum and the good practice of teaching about the professional learning community (PLC) organic production and transforming Hom Mali Rice in Thailand</td>
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<td>BUSI003</td>
<td>A Study of Differences in Factors Affecting Accounting Preparation of Small Entrepreneurs in Muak Lek Sub-District, Muak Lek District, Saraburi Province</td>
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<td>Pratoomma Puriboriboon, Damrong Sattayawaksakul</td>
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ORAL PRESENTATION
The Development of a Collaborative Network for School-Based Management in Primary Schools Yasothon Province

Choo Sri Tanakun*
Wichit Khummantakuhn**
Kriangsak Srisombut***

ABSTRACT

This research was aimed at studying state of developing a collaborative network for school-based management in primary schools in Yasothon Province. The study covered existing and desirable state as well as needs for developing a collaborative network for school-based management in primary schools in the province. A constructed rating scale questionnaire was used to collect data from 299 school administrators and academic teachers. These informants were drawn through simple random sampling. The sample size was determined by Krejcie and Morgan. The questionnaire was consisted of 2 parts; Part 1 Informant’s background and Part 2 Opinions on the existing state of developing a collaborative network for school-based management in primary schools in Yasothon Province (5-rating scale items). To collect the data, the questionnaire copies were mailed to the samples, and some samples were visited by the researcher. The findings revealed a high level of the collaborative network for the school-based management in the primary schools in Yasothon Province. The levels of importance of the collaborative network elements in a descending order were participatory principles, development, decentralization, management, shared activities, and leaders.

Keyword: School-based management, Collaborative Network, Primary Schools

Introduction

School-based management (SBM) is a form of management which emphasizes school-centeredness. The school is the center of ideas and administration. Management is directly decentralized to the school. As a result, the school can take responsibilities, make decisions, and operate on their own. The basis of school-based management is decentralization from the power center to schools. In so doing, the school is provided with absolute authority and responsibilities for school management. The school is free with flexibility in making decisions or orders concerning the management in all aspects including academic affairs, budget, personnel management, and general administration. In addition, an obvious feature of the school-based management is participation. This form of management receives participation from all parties involved with the school in forms of committees, agencies, organizations, and individuals in both the public and private sectors in the neighborhood of the school. The existence of the school board indicates that the school has adopted the concept of participation in the management. The school board is consisted of members from various parts of the society such as representatives from parents, teachers, community organizations, experts, and school administrators.

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The strength of the school with the school-based management needs to be promoted through network building. Prawet Wasi (1998: 116-118) states that social networks expand like a brain network. The brain structure causes a high level of learning for survival whereas the social structure gradually evolves more like the brain structure. There are changes in social behavior, turning a power society into a learning society. The emergence of a learning society relies on changing the vertical social structure into a social network that links relationships in all directions. A social network of true relationship is called a learning social network. A social network must be able to continuously learn or expand its concept so that it can adjust itself to be in balance. Wheatly (1999: 79) proposes that all things are interdependent. They exist together in groups, building networks of relationships with independence and a true identity. It can be concluded that all things are connected networks with rapid expansion and growth which can reshape themselves and energy to enter a proper condition.

Changes in various forms of educational management into the school-based management have been aimed at more flexibility in school operation. This form of management is ensured that it is consistent with the problems and the needs of the local community. It can respond to the local learner’s ability, interest, and aptitude. In addition, it can quickly help solve various problems in the community school. More importantly, all parts of the society get involved in this educational management in the form of stakeholders.

The success of the school-based management (SBM) is caused by its principles and guidelines according to national education acts. One key to success is that it should be encouraged to build a network in order to make rules and regulations that will lead to actual implementation. Therules and regulations must be clear, practical, and understandable for those involved in the implementation. The education management committees, in particular, must understand their roles, duties, and responsibilities to achieve the most effective school-based management. As a result of the school-based management, it leads directly to the development of the learner as the important target of the educational reform.

At present, primary schools in Yasothon Province have a school network in the form of an academic network with an interesting network building process and elements. Based on a study of schools of excellent practices, it is implied that developing a collaborative network model for the school-based management in primary schools in Yasothon Province is an important way to develop effective and potential educational personnel to achieve work success. Such a collaborative network model for the school-based management have the following factors that play an important role in driving various activities; participatory principles, decentralization, development, management, shared activities, and leaders. Each of these factors encourages learning to achieve certain leadership that can develop more successful collaborative networks in various areas. It is indicated that the success of the school-based management results from the school leaders’ role in making decisions to increase community participation and to develop communication. The school leaders make use of supportive or facilitating leadership, and the participants in the school administration are satisfied with the school-based management. It is found that the whole implementation of the school-based management is at a high level. The aspects of the school-based management can be sorted in a descending order as administrator leadership, decentralization, checkable responsibilities, whole school system development, participatory management, and self-management. In comparison of the practices of the aspects of the school-based management, the school administrators and the teachers show different practices in decentralization, participatory management, self-management, whole school system development, auditable responsibilities, and administrator leadership. As mentioned earlier, the
success of the school-based management results from the school leaders’ role in making decisions to increase community participation and to develop communication. The school leaders make use of supportive or facilitating leadership, and the participants in the school administration are satisfied with the school-based management.

The study of solutions to problems of educational development in primary schools can bring a collaborative network model to application in primary schools with similar contexts. The study is also useful for the formulation of policies to promote and enhance the quality of solutions in primary schools. Office of the Basic Education Commission therefore has policies to strengthen and upgrade the quality of educational institutions in terms of administration, teaching and learning management, and student quality. In the policies, some guidelines are determined for effective educational institution development such as administration, promotion, and support of educational institution management, integration or dissolution of educational institutions. In this regard, taking such an action will have direct impacts on efficiency, value, and management. There shall be cooperation from individuals, families, communities, local administrative organizations, professional organizations, religious institutions, enterprises, and other social institutions (Jatana Moungmon, 2008: 145).

Kularb Purisarn (2004: 185-211) did a multi-cases study of the school-based management in secondary schools in Khon Kaen. She found that schools should have internal decentralization, teacher professional development, shared responsibility, student learning management quality development, school-community relationship, internal quality assurance system, and systematic self-assessment.

Siriporn Tantiyamas (2007: 192-200) studied the model of participative management in effective school clusters under Bangkok Metropolitan Administration. The results of that previous study were as follows. For shared activities, they participated in the management by means of information planning and planning. For technology use, various technologies were used in the management. For leadership skills, the network coordinator has good human relationship. For leaders, the leaders gave opportunities to the members to participate in making decisions of important matters. For member participation, the members of the network were allowed to participate in making decisions and to take responsibilities of the matters. For the organization of the network of participatory schools, there should be a network of 4-8 schools. For the atmosphere of the network of participatory schools, there should be fairness and transparency.

Pisit Thepkraiwan (2011: 284-292) did research on the development of a collaborative network model for educational quality management in small sized primary schools. He found that, for awareness of needs to create a network, school administrators must be aware of the members in the organization. For agency coordination/organization network, there was continuous communication. For mutual commitments, they created agreements as mutual commitments. For network management, the network should have a systematic operation and development. For relationship development and use, there should be continuous innovation invention and knowledge management. For relationship maintenance, new leaders in the network should be continuously built.

Due to problems of management in primary schools in Yasothon Province, the researcher became interested in studying a collaborative network for school-based management in primary schools in Yasothon Province. The researcher set 6 elements as the study framework before the research conduction. The 6 elements included leaders, management, participatory principles, decentralization, development, and shared activities. In accordance with Siriporn Tantiyamas (2007: 184-185) who studied effective schools in
Bangkok, a network of participative management schools should be created in order to develop teaching and learning more effectively. Hopefully, this research would benefit Thai education and the country.

Purpose of the Study

To study state of developing a collaborative network for school-based management in primary schools in Yasothon Province.

Research Methodology

Methodology

Existing related research or documents were synthesized to construct a questionnaire. The questionnaire covered the following aspects; leaders, management, participatory principles, decentralization, development, and shared activities.

Population and Sampling

1. The population included the administrators and the teachers in 380 schools under the Office of Yasothon Primary Educational Service Area 1 and the Office Of Yasothon Primary Educational Service Area 2.

2. The samples were administrators and the teachers in 191 schools. This sample size was determined by the table for determining sample size of Krejcie and Morgan (Boonchom Srisa-ard, 2002: 43).

Research Instrument for Data Collection

A questionnaire was administered to investigate the existing state of developing a collaborative network for school-based management in primary schools in Yasothon Province. It was consisted of 2 parts as follows:

Part 1 Informant’s background

Part 2 Opinions on the existing state of developing a collaborative network for school-based

Discussions

The discussions of the research results are as follows:

The major finding of the research was that the overall state of developing a collaborative network for school-based management in primary schools in Yasothon Province was at the high level. The opinions which indicated the importance of the collaborative network aspects can be ranged in a descending order as participatory principles, development, decentralization, management, shared activities, and leaders.

At present, the participatory principles aspect is practiced at the highest level in developing a collaborative network for school-based management in primary schools in Yasothon Province. This finding was due to the following facts. The schools could arrange for a transparent nomination committee for the school board. Teachers and school personnel as well as parents participated in setting and deciding various activities on campus. The network members cooperated in solving problems and developing their work. In creating a collaborative network for school-based management, the network members were interdependent resources, knowledge, fund, manpower, places, etc. This finding was consistent with Charoen Ratsopha (2011: 302-309) whose research was Developing a Model of Academic Affairs Participatory Management at Basic Educational Institutions. That previous research found the participation in 6 stages in the process of the model; discussions, planning, decision, operation, follow-ups and evaluation, and mission improvement. It was also found that the academic affairs covered 12 missions namely the development of
school curricula, the development of learning processes, measurement and evaluation and grade transfer, research for education development, innovation/media/educational technology development, learning resource development, educational supervision, educational counselling, development of internal quality assurance system, academic services for the community, coordination of academic development, and academic promotion for individuals, families, organizations, agencies, and other institutions that provided education for small sized schools. The participation in the whole academic affairs participatory management was found at a high level. Likewise, the participation in each of the 12 missions was reported at a high level. The top 3 missions with the highest means in a descending order were the development of learning processes, measurement and evaluation and grade transfer, the development of school curricula, and development of internal quality assurance system.

The development aspect is practiced at the highest level. This finding was due to the following facts. The school clusters defined clear and appropriate roles, duties, and responsibilities of the operation committee. The school clusters developed the educational quality of the schools in the network through active participation of all the school personnel. The school network had a systematic operation and development process. The operation committee applied the results of the previous evaluation to planning, improving, and developing the work to be efficient and useful according to the objectives of the plan. The school clusters organized seminars between networks both inside and outside the Office of Yasothon Primary Educational Service Area. This finding was in accordance with Songsin Inkokpeung (2015: 89) who studied Guidelines for Developing of Administration by Using School-based of Subject Schools in the Secondary Educational Service Area Office 25. The results of that research were as follows: 1. The existing and desirous state of administration by using school-based of subject schools in the Secondary Educational Service Area Office 25 as a whole was at a high level. 2. The guidelines for developing administration by using schools as a base were composed of promoting teachers to attain accurate knowledge and comprehension on education quality assurance, appointing working groups for education quality assurance, supporting “a local public network meeting” to be a mechanism of inspection, advising the school boards to have authority in strategy regulating for school operation, advising the directors to maintain a good relationship with the community and to be self-developing, promoting all sectors to participate in designing local curricula which accorded with local needs, promoting and supporting the use of local resources in educational management, participating in planning for educational quality development, decentralizing school administrators’ authority to the school administration committees, and organizing seminars on a regular basis.

The decentralization aspect is practiced at the highest level. This finding was due to the following facts. The schools appointed a supervision and teaching development committee. The schools decentralized decision making and divided responsibilities to various departments. The schools could also appoint a disbursement committee and approve the budget according to the annual action plan. This finding accorded with Nonglak Yuthuthipong (2008: 69) who did a study on the school-based management in basic education institutes in Inspection Area 14. The results revealed a high level of the school-based management. It was also found that the separated aspects of the school-based management were at a high level. The aspects with the highest and the lowest means were decentralization principles and self-management principles respectively.

The management aspect is practiced at the high level. This finding was due to the following facts. The schools had measures for educational counseling. The schools applied technology to personnel
development. The schools developed working standards. The schools had measures for continuous network coordination. This finding supported Asadakorn Ketmala (2017: 118) who investigated the existing situation and guidelines of the school-based management model for educational institutes of the Office of Mahasarakham Primary Educational Service Area 2. The results of that research were as follows. 1. The opinions of the school administrators, teachers, and basic education school committees in schools under the Office of Mahasarakham Primary Educational Service Area 2 toward the current conditions in the administration were generally rated at a high level. The separated aspects were ranged from the highest to the lowest means as self-management, participation, decentralization, return power of educational management to people, and check and balance. 2. The opinions of the school administrators, teachers, and basic education school committees in schools under the Office of Mahasarakham Primary Educational Service Area 2 toward the problematic conditions in the administration were generally rated at a medium level. The separated aspects were ranged from the highest to the lowest means as return power of educational management to people, self-management, participation, decentralization, and check and balance. 3. Each of the five aspects was provided with three guidelines for the further school-based management model for educational institutes of the Office of Mahasarakham Primary Educational Service Area 2.

The shared activities aspect is practiced at the high level. This finding was due to the following facts. The school clusters cooperated in holding activities concerning the personnel or the students. They exchanged knowledge and learned together. The school clusters disseminated their work of the network to all the school personnel in the network as well as to the public. The school clusters provided help and support to other school networks as requested. This finding was consisted Udomsin Khanthaphum (2015: 192) who studied the development of a cooperative network model in students’ quality development for primary school under offices of primary educational service areas. That previous research found that the practice of the overall situation of the cooperative network in students’ quality development was at a moderate level. Considering each aspect, it was found that the practices of construction of awareness and perception of problems, cooperative planning, and cooperative implementation according to the plans were also at a moderate level. In contrast, the practice of cooperative evaluation was at a low level. For the desirable situation of a cooperative network, it was revealed that the overall desirable situation of a cooperative network in students’ quality development was at the highest level. Likewise, the separated aspects in the desirable situation of a cooperative network were at the highest level. This finding was also in consistence with Wisithsak Chaikoed (2016: 326) whose research was Development of a Network of Cooperation to Promote the Quality of Education of Primary School under the Jurisdiction of the Basic Education. It was discovered that building joint obligations had the highest mean score whereas trust had the lowest one. The overall desirable condition was at the highest level. Considering each item, it was showed that co-decision had the highest mean score while participation had the lowest one. For needs, the needs ranged by the mean scores in a descending order were exchange interaction, trust, activity cooperating, building shared awareness, participation, vision, co-decision, and building joint obligations.

The leaders aspect is practiced at the high level. This finding was due to the following facts. The school administrators supervised and provided operational counseling to the teachers. The school administrators restructured the systems of their schools to be a connected network. The school administrators supported, promoted, and facilitated the teachers and the personnel in self-development and activities. This finding was in accordance with Chayanee Pattarawarin (2013: 300) who studied the
development of a school-based management model for private schools. It was revealed that the school-based management was practiced in private schools at a high level. The separated aspects of the school-based management arranged by the mean scores in a descending order were 1) supportive leadership, 2) self-management, 3) overall system development, 4) auditable responsibilities, 5) participatory management, and 6) decentralization. In addition, the needs for the school-based management in private schools were at the highest level. The separated aspects of the needs for the school-based management arranged by the mean scores in a descending order were 1) supportive leadership, 2) self-management, 3) overall system development, 4) auditable responsibilities, 5) participatory management, and 6) decentralization. There were four major sections in the school-based management model for private schools. Section 1 included purposes, concepts, and principles of the model. Section 2 consisted of the key elements; 1) input factors, 2) processes, 3) output/outcome, 4) feedback, and 5) external environment. Section 3 comprised guidelines for implementation of the model. Section 4 presented conditions to success.

Suggestions

1. Suggestions for Implementation of the Results

1) Creating a collaborative network requires cooperation and dedication from all sectors. A collaborative network should organize ongoing activities to achieve sustainability.

2) The process of building a collaborative network should be initiated by raising an awareness of problems and educational quality development among administrators, teachers, parents, school boards, communities, and local agencies. However, administrators and teachers still have to take an important role in driving the educational quality development in schools.

3) Parents and community members have to participate in the education management and taking a close care of their children at home such as doing homework, self-studying, controlling behavior and manners, attending the school meeting, putting an effort to school development, donating, and organizing school activities.

4) Universities and faculties should issue policies or plans for continuous academic services for the society or community. In the case of academic services for primary schools, brainstorming from academics or student volunteer camp activities would be helpful.

2. Suggestions for Further Research

2.1 There should be research on network management models of educational institutions and schools and communities.

2.2 There should be research on development processes and strengthening the management of other types of collaborative networks.

2.3 There should be research on development processes of network management models in other aspects such as effectiveness, learning achievement, or learning.

References


Chinese Opera Lessons Focusing on Collaborative Learning in Sichuan Conservatory of Music

Zhang yanchuan *
Pramote Danpradit**

Abstract
This paper is a development research aiming to construct Chinese opera lesson, effectively use the Chinese opera lesson based on the collaborative learning theory, and study the satisfaction towards the Chinese opera lesson. The specific method is to select 10 students from 50 junior students in Sichuan Conservatory of Music, who is majored in national vocal music as samples, on whom individual experiment, group discussion, expert discussion, data collection and analysis, and other links shall be conducted from February 2018 to May 2019. Research results are as follows:

Researchers had constructed 6 lessons of Chinese opera, and mixed collaborative learning in teaching. Through effective use of Chinese opera lesson in Sichuan Conservatory of Music, it was found that there were 5 students who passed well and below the excellence. The average results of students’ satisfaction towards learning are 4.70 on a 5-point scale. Due to the need of character shaping, the tone of the singing skills is very high in the requirements of the opera voice.

Keywords: Chinese opera, Chinese opera lessons, Collaborative

Introduction
Sichuan Conservatory of Music (四川音乐学院) is located in Chengdu, Sichuan Province. It is a full-time general undergraduate college with music as its main school-running feature. It is one of the nine independent professional music colleges in China. It has the right to grant master's degree. It is also the first batch of art master's degree (MF) approved by the Academic Degree Committee of the State Council. (http://www.sccm.cn) Sichuan Conservatory of Music was founded in 1939 as "Sichuan Provincial Drama Education Experimental School", and then went through the development periods of "Sichuan Provincial Music Experimental School", and "Southwest Music College". In 1959, with the approval of the Ministry of Education, the school was upgraded. Mr.Ge was renamed Sichuan Conservatory of Music; in 1986, the school obtained the right to grant master's degree.
In 1927, with the support of Mr. Cai Yuanpei, Mr. Xiao Youmei founded the Shanghai National Music College. (Shi-Lan, 2005) For the first time, he hired foreign professional vocal music teachers as well as Zhao Meiber and Zhou Shuan who had returned from overseas for studies. Thus, the teaching of professional bel canto officially began. Under the influence of Mr. Xiao Youmei, the teachers of Shanghai National Voice College devoted themselves to the nationalization of vocal music teaching. Zhao Meiber once said, "Only when Chinese people develop their own national music can they compete with other countries in the world." Shanghai Voice has trained a large number of excellent talents for the cause of vocal music education in China, such as Zhou Xiaoyan, Si Yigui and so on. During this period, Bel canto began to receive attention in China. (Yan, 2017) With the gradual promotion of Western singing in China, it has been more and more recognized. After the founding of New China, supporters of Chinese traditional singing and Western bel canto began to discuss which kind of singing method was the main one, and the Ministry of Music Communications (now the Chinese Musicians Association) launched the famous "tuyang dispute". This is an important node of the integration of Bel Canto and national singing. This controversy is known as the phase of stalemate between the two singing styles. (Koo, 2010)

In 1956, Li Jiaofu set up a "national singing class" in Shenyang Conservatory of Music. In teaching, vocal music teachers were used to teach vocal training. Based on Peking Opera and Hebei Bangzi, the teaching of modern national vocal music was launched. In 1957, a major event in the history of Chinese opera education, the National Vocal Music Teaching Conference, was held in Beijing. The conference discussed the general principles of the "syllabus of vocal music teaching in music academies", solved the disputes on the singing method and proposed that the national singing method should learn from the breathing method of western bel canto, while maintaining the original characteristics of national vocal music, and that the relationship between western bel canto and Chinese national singing method should be mutual learning and complementary. (Cheng-Lian, 2011) During this period, the vocal music teaching system of the Chinese nation began to emerge. National singing and bel canto have entered a phase of integration. In 1958, the Central Conservatory of Music and Shanghai Conservatory of Music established the Department of Ethnic Vocal Music and the Ethnic Class one after another. Professor Wang Pinsu became the first group of teachers to teach Ethnic Vocal Music in Shanghai Conservatory of Music. Professor Wang studied bel canto from Professor Shi Yigui. (Li-Na, 2011) She used the way of learning while teaching in the teaching of national vocal music, and trained a group of Chinese national singers such as He Jiguang and Caidan Zhuoma. In 1964, the Chinese Conservatory of Music was established. Tang Xuegeng was the first head of the Department of National Vocal Music. The Academy required vocal music teachers to master at least one kind of traditional vocal music performance, pay attention to the study of traditional folk vocal music, such as traditional opera and quyi, and strive to integrate the essence of Bel Canto on the basis of national singing method and open up new ideas for the teaching of national vocal music.

In 1980, the compilation of vocal music teaching syllabus in normal universities began in China. The discussion and compilation of vocal music teaching syllabus were carried out by universities such as Beijing Normal University and Nanjing Normal University, the scientific vocal method was explored to inspire students to sing and explore the innovation of teaching mode. Zhang Wan's Vocal Music Teaching Method in Teacher's
Colleges emphasizes that vocal music teaching theory includes skills practicality and explores the practicality of vocal music teaching methods. With the rise and continuous development of Higher Vocational colleges, the domestic vocal music teaching mode is also constantly developing and updating. Researchers and teachers jointly explore vocal music teaching in the form of individual courses, collective courses, small classes and large classes, which has brought some changes to the vocal music teaching mode of vocal music specialty, but it is necessary to change the overall teaching situation of vocal music teaching. (Guan, 1998) Overseas exploration of vocal music teaching mode is relatively fast. In vocal music teaching mode, collective lessons are mostly used to teach, clear training objectives and specifications, and seize the opportunity of national key development education to strengthen the teachers of music education, and set up a vocal chorus to report and perform in some theatres and art galleries, in order to integrate vocal music teaching with the real environment. Summarizing the innovation of vocal music teaching mode at home and abroad, we can find that people have increased their investment in vocal music teaching and paid attention to the development of student’s music literacy, but it has not obviously changed the drawbacks of large gap between teachers and students, single teaching mode and teacher-centered teaching, which requires further exploration of vocal music teaching mode.

Susan Claire Hove-Pabst (1994) presented a thesis on creating original opera in a rural school for a PhD. She has integration and relevance in discovery learning music elementary students in a one-room rural school. Interaction between the students and the opera form was observed and described in order to further understanding of the potential of original student opera as a learning and teaching tool within a child-centered, discovery learning setting. The method for the study was a qualitative case study. The researcher acted as a participant-observer. As a participant, she guided the students through lessons and activities and acted as a resource as they participated in all phases of creation and production of their original opera. As an observer, she assembled descriptive field notes, recorded documentation, wrote documentation, interviews, and questionnaires. During and after the gathering of data, she analyzed them for prevalent themes. Two components of the project, it was found that there was integration of subject areas typically found in an elementary curriculum, with prevalence in the areas of music, visual arts, drama, movement, and language. The researcher concluded that original student opera can be used as an effective tool for learning about self, others, and the world and subsequently for communicating what one knows through an integrated, relevant form. The students expanded their repertoire of learning tools while enriching their lives.

Ninah Beliaysky (2001) a Taiwanese exchange student, presented an article on English through Opera. She recognized and explained the result of that activity, high motivation and meaning can be among the benefits of the use of this theatrical genre in the English language classroom. By addressing language, traditions, and beliefs, opera can touch the very souls of our students through its music and stories. The themes universal Europe and South America incorporate human issues: love, passion, hate, greed, honor and death. Students welcome the opportunity to voice their feelings on such themes and to identify with some of the opera's controversial subjects and characters. Those who are young as well as those who are not so young have an opportunity to relate similar stories from their native countries and to marvel about
how many ideas and values they have in common. She uses collaborative learning through Speaking. The students discuss the above-mentioned questions in small groups and comment on their feelings and reactions. The responses vary. The students are very creative and intuitive. They often love from two people, that love is impossible, that Violette wants to sacrifice her love and/or life and that the ending is very tragic.

Collaborative learning in Chinese music education. The music education in China and the active investment of the state in education, the communication and cooperation between music education and humanities, development of network, science and technology are more and more extensive. (Liu, 2005) As students, they should experience how important the cooperation is when learning skills. Introducing collaborative learning into the field of education is a practical measure to straighten out the road of educational reform and development. In the past, the "one-to-one" vocal music teaching mode is convenient for students with better music quality to learn and absorb. (Yang, 1997) In the vocal music course, setting common learning tasks and dividing them into study groups can make most students get exercise opportunities, change the situation of one person’s progress in the classroom, and emphasize the comprehensive development of most students. The collaborative learning model of vocal music has gradually become a new thread of research and development in the field of global education. The traditional vocal music teaching concept pays attention to the theoretical renewal of knowledge, while the new curriculum concept emphasizes the benign interaction between teachers and students. (Sun, 2004). The research of the collaborative focuses on vocal music learning resources. Each student takes his own cognitive ability to participate in the vocal music curriculum and presents his own understanding of vocal music art in front of everyone. Individual advantages and some shortcomings are blended in the group environment. Team members learn from each other’s strengths to make up for their weaknesses and learning resources are used together. (Zhao, 2005)

Introducing foreign collaborative learning into China is in line with the development trend of student-centered education, which is conducive to solving the problem of teacher-centered subjective knowledge inculcation, mobilizing student’s interest in learning, broadening their horizons of learning, and enabling students to actively engage in learning. Learning is further deepened from theory to teaching practice. Collaborative learning in China began and developed rapidly in the 1980s and it has been relatively mature in the teaching of English, sports and other disciplines. Domestic researchers are also constantly exploring the mode of teaching development, conducting in-depth reference and timely transplantation and developing at full speed in the direction of education and teaching mode suitable for our country. Experts, scholars and front-line teachers in China have created many collaborative learning models in the long-term exploration of theory and practice, some of which have universal guiding significance. The following are the main ones:

1) Top-down Guidance Cooperation Model. This learning mode emphasizes the intrinsic interaction between teachers and students. Teachers’ guidance of learning activities will integrate the positive factors of classroom teaching. Teachers and students work together for the established teaching objectives. This model tends to focus on the student’s initiative and active participation, mobilize student’s interest in
learning, enable students to complete teaching tasks under macro guidance, and develop their learning ability.

2) Bottom-up collaborative mode of self-study. The bottom-up self-study cooperation mode focuses on the active cooperation between students and students, the exchange of knowledge points between students, the discussion of teaching objectives with teachers. It tends to have more specific learning activities with strong operational content. The main focus of learning mode is student’s autonomous and automatic learning attitude, focusing on training student’s hands-on ability and the sense of cooperation with peers.

3) Constructive Interactive Teaching Model. Constructive interactive teaching mode combines constructive learning theory with collaborative learning theory. It takes students as the center in the classroom, guides and directs teachers in the teaching process, creates specific problem situations, and builds student’s knowledge system through problem-solving subjects.

Collaborative learning is one of the mainstays of contemporary teaching concepts and strategies. It pays great attention to the interaction and cooperation in the teaching process. Self-regulated learning, inquiry learning and collaborative learning are the three main learning styles vigorously advocated by the basic education reform. Collaborative learning, as a new way of learning, has a great impact on vocal music learning although it has been in contact for a short time. The advantage of group learning is that members can learn from each other, find problems and make progress together. Form a sense of competition among groups, unconsciously develop perfect learning habits, and improve communication between teachers and students. Through the intuitive playback of group questions, it reflects the common problems among students. Thus, we can solve the common problems more effectively, and narrow the distance between teachers and students. Under the objective evaluation of teachers, we can better find our own shortcomings and shortcomings, and strengthen learning in time. It breaks through the existence of individual students in the past, and emphasizes the collective team consciousness and collaborative ability that the society attaches great importance to today. The aforementioned, the researcher is interested in researching Chinese opera lessons focusing on collaborative learning in Sichuan Conservatory of Music. In order to construct lessons and test applications, the results will be used to improve in the future.

Purpose of study
1. To construct a Chinese opera lesson.
2. To use the effective Chinese opera lesson in Sichuan Conservatory of Music.
   2.1 Effectiveness of learning
   2.2 The survey of student satisfaction.
   2.3 Improvement of Chinese opera lessons and
   2.4 Experts recommendation and improvement of the lessons

Research Methodology
1. This research adopts the method as research and development, which starts from the research goal set, discovers the problem in the teaching and then enriches and consummates the collaborative learning theory system.

2. Target population and location. The specific method is to select 10 students from 50 junior students of Sichuan Conservatory of Music who is majored in national vocal music as samples.

3. Process of the research.

The researcher brought the results of the assessment to the sub-committee meeting of the expert committee and introduced the recommendations to improve the Chinese operas lessons as shown in the following figure.

![Figure 1: Process of the research.](image)

4. Research Instruments

The researcher focused on the new methods of the Chinese national voice lessons. Each semester is held 40 times per 2 hours. So the researcher made a tool covering the full-time content or 6 lessons. The main instruments employed for this study were as follows:


4.1.1 Lesson plans based on 21st century collaboration skills were written by the researcher, which there are 6 topics.

4.1.2 The researcher and voice teacher with experience and help develop voice lessons, comprising of 6 lessons. All lesson plans took a total of 12 hours.

4.2. The IOC form.
4.2.1 Index of Item-Objective Congruence (IOC) validity of the achievement test by using IOC formula. (Rovinelli & Hambleton, 1977: 49-60) The researcher constructed and validated the content. Present to 3 experts, make recommendations, and then apply assessment results to improve.

4.2.2 The evaluation of experts IOC instructional lesson 1-6.

4.2.3 Standard of score.

4.3. The questionnaire constructions. Satisfaction questions for teachers and students. The questionnaire was used to measure the satisfaction level of teachers and students per voice lessons, which was adjusted items. The level of assessment is 5 levels. Evaluation by percentage and mean, and the interview for create open questions to use interviews with teachers and students.

5. Data collection: interview-discussion in the expert group, observe and record students' behavior during study-activities, and discuss after learning.

6. Procedures of data analysis, to find out the quality of the instruments and various evaluation results with IOC and basic statistics (percentage and mean).

Results

The researcher has developed research tools, to constructed 6 lessons of the Chinese opera, conducted experiments and collected data, thus presenting the results of data analysis as follows. 1) Effectiveness of learning 2) The survey of student satisfaction. 3) Improvement of Chinese opera lessons and 4) Experts recommendation and improvement of the lessons.

1. Effectiveness of learning

The effective of learning is the result of the evaluation of the results that give the score after the exam, with a full score of 50, the result of the assessment as follows.

Table 1. The result of assessment of students

<table>
<thead>
<tr>
<th></th>
<th>Opera expression (15)</th>
<th>Basic sound(10)</th>
<th>Character grasp(10)</th>
<th>Role collaboration (15)</th>
<th>Total score(50)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>13</td>
<td>7.4</td>
<td>8.1</td>
<td>12.9</td>
<td>41</td>
</tr>
</tbody>
</table>

According to table 1. Students’ scores generally reach good and above. In the Role collaboration assessment, three students score below the excellence because they in the performance process, although he noticed the character integrity of the opera, he lacked a little communication with his peers' eyes and limbs. There are 5 students whose grades are good, below the excellence.

2. The survey of student satisfaction.

The satisfaction survey of ten students participated in the collaborative learning of Chinese opera lessons showed the following results:
Table 2: Average results student satisfaction towards learning

<table>
<thead>
<tr>
<th>Student satisfaction towards learning</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Learning Skill</td>
<td>4.68</td>
<td>93.50</td>
</tr>
<tr>
<td>B. Singing Activities</td>
<td>4.73</td>
<td>94.67</td>
</tr>
<tr>
<td>C. Song Choice</td>
<td>4.70</td>
<td>94.00</td>
</tr>
<tr>
<td>Average</td>
<td>4.70</td>
<td>94.06</td>
</tr>
</tbody>
</table>

The statistical analysis of the part of the above-mentioned. By summary, the statistical analysis of the above-mentioned. The 3 main issues are the level of satisfaction towards the study as follows. The scored 94.06 percent and scored an average of 4.70 on a 5-point scale.

3) Improvement of Chinese opera lessons

Through the analysis of the survey form of the above three scoring forms, at the same time discussed with the students. Researcher believe that this manual can be improved showed the following picture:

4) Experts recommendation and improvement of the lessons. (Focus group)

Expert’s recommendation and improvement of the Chinese opera lessons, the committee found the good characteristics of the Chinese opera lesson with consistent content as follows.

1. The inherited of Chinese opera drama.
2. The basics of folk song and dance music.
3. to consistent with western opera style.
4. Effectiveness measurement is consistent with teaching skills
5. Continuity, Integrity and Standardization.
6. Students are happy to study.

Conclusions

Researchers have created the 6 lesson of Chinese opera, mixed collaborative learning in teaching. Effective use of Chinese opera lesson in Sichuan Conservatory of Music, found that there were 5 students who passed a good and below the excellence, and the average results student satisfaction towards learning, the average of 4.70 on a 5-point scale. Because in the requirements of the opera voice, due to the need of character shaping, the tone of the singing skills was very high. However, the students in the experimental group did not achieve the artistic quality of the singing voice after 6 lessons.
Discussion

The core of this research is to establish, develop and perfect the theoretical system of Chinese opera collaborative learning, and then to establish the discipline construction that can be standardized and popularized. The theory of collaborative learning emerged in the United States. Collaborative education is a teaching method under the background of classroom teaching system. The core connotation of collaborative learning theory. Collaborative learning method is an advanced teaching method, which emphasizes the cooperation between teachers and students in the teaching process, between students and students, between roles and roles, as well as the relationship arrangement between the drama segment and the whole play. After the experiment, the researchers and experts have agreed that the Chinese opera lesson combines collaborative learning with distinctive features:

1. The inherited of Chinese opera drama.
2. The basics of folk song and dance music.
3. To consistent with western opera style.
4. Effectiveness measurement is consistent with teaching skills.
5. Continuity, Integrity and Standardization.
6. Students are happy to study.

Applying the collaborative learning to construct 6 lesson of Chinese operas. Teachers regard organizing students’ learning groups as an important means of teaching. In teaching practice, Professor Slavin unifies them into unification in theories. According to the theory of classroom teaching technology, he divides collaborative learning courses into “task structure”, “incentive structure” and “authority structure”, thus constructing three main factors that affect the quality of classroom learning and the social psychological atmosphere. (Zeng, 2004). In the early 20th century, Kafka (K.), one of the founders of the Gestalt School, proposed that this group was a dynamic whole in which interdependence among members could change. Second, Kurt Lewin further clarified K.’s view in the 1920s and 1930s that the nature of a group is to guide a group to become a “dynamic whole” (often created by common goals) of interdependence among its members, in which changes are affected by one another in member states. Second, internal tensions among members can motivate teams to achieve common expectations.

The collaborative learning teaching method is a relatively novel teaching method in Chinese opera teaching. These new knowledge points can be summed up as: A special teaching method is established for Chinese opera teaching alone, which designs a relatively systematic of the whole Chinese opera teaching process system, such as literature background study, curriculum drafting, expert investigation and curriculum improvement. It is also to divide group to carry out course attempts, collect data, evaluate and improve courses, finalize and teach target groups, and evaluate and analyze data. Each student participates in the whole process, experiences all the roles, and then understands the relationship of whole character better. The results of the study differ from Ninah (2001) because learners cannot speak Chinese language with opera skills, Yet they want to develop higher skills, similar things are the results of the students’ feelings. The responses vary. The students are very creative and intuitive.
In the course of teaching, observation and communication can be generated between roles and roles, between teachers and students, between students and students, thus improving learning efficiency. At the same time, collaborative learning teaching is open, which can be improved and optimized according to different standardized modules. According to the results, it is consistent with Susan Claire (1994) results for the opera learners can be used as an effective tool for learning about self, others, and subsequently for communicating what one knows through an integrated, relevant form, and the students expanded their repertoire of learning tools while enriching their lives.

Satisfaction towards the Chinese opera lesson plans. On the basis of previous research, this study systematically proposes the theory of collaborative learning. Compared with the Chinese opera teaching theory in the literature, this theory has several new characteristics: the first is the induction, inheritance and innovation of previous theories. Secondly, systematize the teaching theory scattered in Chinese opera and Chinese national vocal music teaching. Third, the general teaching theory system is designed into a standard curriculum system, which has a strong practical significance, is also easy to be popularized in different disciplines and different classrooms.

Suggestions

1. The problem of Chinese opera lessons. In this study, there is still room for further improvement due to the shortage of research time, sample extraction and data statistics technology, which can be summed up as follows: First, the time span is not large enough. From Feb. 2018 to May 2019, this time is impossible to carry out teaching practice in the four-year complete teaching of undergraduate students. Second, the sample selection coverage is not wide enough; this research only selected 10 undergraduates of Sichuan Conservatory of Music for teaching experiments due to the limited conditions. Third, the investment is insufficient, whether the work preparation or the teaching facility still has the space to continue to improve.

2. The problem of collaborative learning in Chinese opera teaching. Teaching methods of collaborative learning break the limitation of one-to-one method, which makes a signer only familiar with their own performance part, pay more attentions to each person’s grasp of the whole work. The methods improve learning efficiency by mutual observation, role exchange, and in favor of cultivation of all-round talents.

3. The recommendation of application to other teacher. The reference value of teaching theory system of collaborative learning popularized among different teachers mainly provides a complete set of materials, standard teaching methods, and the examination table. At that time, this system also should combine the different teacher’s teaching habit, the education background, the knowledge structure and so on, while carrying on the fusion and the adjustment.
References


The development of the curriculum and the good practice of teaching about the professional learning community (PLC) organic production and transforming Hom Mali Rice in Thailand

Kochaporn Numnaphol, Dr. Prakong Yukalung*
Sawang Yukalung**
Simawan Hompan***
Surapong Sangrenoo****

ABSTRACT

The purpose of this research is 1) to create and develop the curriculum and the good practice of teaching about the professional learning community (PLC) in the production and processing of organic Hom Mali Rice 2) for the good practices of teachers about the learning community PLC in the production and processing of organic Hom Mali Rice. Target group of supervisors, faculty and students of Roi Et Rajabhat University primary and secondary teachers in Roi Et Province 400 persons. Acquired by specificity (Purposive Sampling). The tools used for development are course manual and CPPL Learning Plan and Practice. Set Data collection tools are questionnaires and learning evaluation forms. Analyze data from content analysis, frequency, mean, standard deviation. The results showed that

1. The results of the development of the master curriculum and the practice of teaching about the Professional learning community (PLC) production and processing of organic Hom Mali Rice get 26 topics at the elementary level, 2 courses can receive elementary school curriculum for small schools, 1 curriculum for opportunity extension schools, 1 program, and 2 secondary courses, namely middle secondary level and high school. Most of them are integrated courses and interdisciplinary. The results of the development of prior knowledge and training principles have increased. The results of application are satisfied at the highest level and supervisory results were at the highest level

2. Good practices of teachers about PLC professional learning communities in the production and processing of organic Hom Mali Rice got PLC guidelines in learning management, including Vision Planning. Creating works together, Putting together a goal and creating common values. The guideline leading to learning management is project-based learning as an active learning base and CPPL learning (Content, Process, Product, Learning). Development results using PLC found that participants in training satisfied knowledge and understanding at a high level (= 4.26, SD = 0.47). Each issue can be sorted from descending order to find advantages. With the highest satisfaction (= 4.42, SD = 0.58), followed by being able to tell benefits (= 4.37, SD = 0.53) and knowledge and understanding in this subject before training (= 4.33, SD = 0.52) respectively

Keyword: Master curriculum, Good practice of teaching, PLC

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****Lecture, Faculty of Education, Roi Et Rajabhat University, Thailand
Introduction

The Professional learning community (PLC) will help create new knowledge and innovations from the creation of vision and goals. In particular, it will lead to the teaching and learning curriculum that will make the students have skills in the 21st century.(Hord,2011)

Ministry of Education has set the focus on six educational reforms: curriculum reform and learning process production and teacher development testing, assessment, quality assurance and development of educational standards production, manpower development and research that are in line with the needs and development of the country. ICT reform for education and all 6 administrative reforms are important for each school to be used to improve and improve the quality to be changed in a better way.

Roi Et Rajabhat University is a higher education institution established for local development with management teaching that focuses on academic excellence produce graduates to be knowledgeable, capable, moral, ethical, encourage personnel to do research to create knowledge and academic services including improvements and technology transfer that benefits local. As well as preserving and continuing Thai and local arts and culture which produce graduates to develop teachers to be professional teachers at the local level to international level need to promote the creation of a PLC learning community network, especially issues related to local Roi Et Province: Thung Kula rong Hai, Jasmine Rice and the research and development Institute is a unit of the university that has a role in promoting research operations including the use of knowledge gained from standard quality research in teaching and publishing and use for social, community and nation development and according to the direction of the reform of the country under the Thailand 4.0 model, with a vision aimed at maintaining Thai people with stability, wealthy and sustainable amid the changing of society from the heavy industry era to the digital age.

Roi et province is an important source of Hom Mali rice. There are 2.1 million rai of jasmine rice cultivation area, with an output of about 840,000 tons / year. The strategic issue 1: Promote agricultural production to compete under the provincial development plan. By focusing on product development to add value. There is an urgent need to create standards for jasmine rice production. And the added value of products from jasmine rice of Roi Et province. Roi Et Rajabhat University therefore has conducted this research project for the development of the prototype curriculum and the practice of teachers in educational institutions about the PLC learning community in the production and processing of organic agriculture in Roi Et province.

Objective

1. To create and develop the curriculum and practices of teaching about the learning community. Professional learning community (PLC) production and processing of organic Hom Mali rice.

2. To find the guidelines of teachers about the PLC learning community in the production and processing of organic Hom Mali rice.
Methodology

1. Study and develop the master curriculum and practice of teaching about the PLC learning community.
2. Drafting a guideline for teachers’ guidelines regarding the learning community PLC
3. Organizing training workshops, Coaching and implementation of 2 secondary schools and monitoring supervision

Summary

1) The result of the curriculum development activities in the production and processing of organic Hom Mali rice.

The results of data collection, project development model, learning community PLC, production and processing of organic jasmine rice. For the competition of the country For the fiscal year 2017 -2018, the activities of the development of the prototype course in the production and processing of organic jasmine rice. There is information as detailed in the following table.

Picture 1: showing the comparison before - after knowledge about organizing the activity of developing the prototype course in the production and processing of organic Hom Mali rice.

From the picture, found that participants had knowledge about production and processing of organic jasmine rice. Principles of participation in training participants have more knowledge and understanding than before training.
Ask questions about BAR. What you already know about What is the "Course Development" and "Organic Jasmine Rice Learning Activity"?

1. Curriculum development

<table>
<thead>
<tr>
<th>Things that the participants already know the</th>
<th>frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>- making improvements to existing courses to be more complete.</td>
<td>3</td>
</tr>
<tr>
<td>- Improving guidelines for organizing learning activities better</td>
<td>2</td>
</tr>
<tr>
<td>- Development of jasmine rice to the world market. To increase the income of farmers and improve the well-being of farmers.</td>
<td>1</td>
</tr>
</tbody>
</table>

2. Organic jasmine rice learning activities

<table>
<thead>
<tr>
<th>What the participants already know the</th>
<th>frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>- learning in jasmine rice In the production, processing and distribution</td>
<td>8</td>
</tr>
<tr>
<td>- organic jasmine rice</td>
<td>3</td>
</tr>
<tr>
<td>- Creating a suitable model for the development of knowledge about the planting of jasmine rice by using organic fertilizer</td>
<td>1</td>
</tr>
<tr>
<td>- Rice-free rice cultivation</td>
<td>1</td>
</tr>
<tr>
<td>- Learning the importance of fragrant rice Organic Jasmine</td>
<td>1</td>
</tr>
</tbody>
</table>

What you don't know about What is "Course Development" and "Organic Jasmine Rice Learning Activity"?

1. Curriculum development

<table>
<thead>
<tr>
<th>What the participants do not know the</th>
<th>Frequency (school)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Development of PLC Organic Jasmine Rice Program How is the educational process?</td>
<td>6</td>
</tr>
<tr>
<td>- Can it be used or not?</td>
<td>2</td>
</tr>
<tr>
<td>- Techniques for teaching and learning process</td>
<td>1</td>
</tr>
</tbody>
</table>
2. Organic jasmine rice learning activities

<table>
<thead>
<tr>
<th>What participants do not know the</th>
<th>Frequency (school)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- creating more value Sales and marketing mechanisms</td>
<td>3</td>
</tr>
<tr>
<td>- Master jasmine rice</td>
<td>1 course</td>
</tr>
<tr>
<td>- How to learn organic jasmine rice How to proceed?</td>
<td>1</td>
</tr>
</tbody>
</table>

What you need to know (Expectation) about "curriculum development" and what is "organic jasmine rice learning activity"

1. Curriculum development

<table>
<thead>
<tr>
<th>What participants want to know about the</th>
<th>Frequency (school)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- getting advice on how to manage teaching and learning Method of operation</td>
<td>5</td>
</tr>
<tr>
<td>- To use the course to use with organic jasmine rice.</td>
<td>2</td>
</tr>
<tr>
<td>- physical identity of organic jasmine rice Roi Et Province</td>
<td>2</td>
</tr>
<tr>
<td>- There is a prototype network for learning communities PLC Hom Mali Rice</td>
<td>2</td>
</tr>
<tr>
<td>- Requesting Patent and Petty Patent and Utilizing</td>
<td>1</td>
</tr>
</tbody>
</table>

2. Organic jasmine rice learning activities

<table>
<thead>
<tr>
<th>What participants want to know the</th>
<th>Frequency (school)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Use of innovation to industry and commercial</td>
<td>2</td>
</tr>
<tr>
<td>- Used to develop to create a market and increase value</td>
<td>1</td>
</tr>
<tr>
<td>- Jasmine rice is one of the curriculum development and students can learn more.</td>
<td>1</td>
</tr>
</tbody>
</table>
After the training program for the development of learning community model PLC participants were introduced to the development guidelines. Development of the master curriculum and guidelines for teachers about the learning community PLC 20-22 August 2017

1. From today’s training, what is the result of what you expect?

<table>
<thead>
<tr>
<th>What participants expect for the</th>
<th>Frequency (school)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Creating a lesson plan on the production and processing of organic jasmine rice To be inserted in the school curriculum</td>
<td>10</td>
</tr>
<tr>
<td>- new innovations, new knowledge in organic agriculture There is an exchange of learning</td>
<td>4</td>
</tr>
<tr>
<td>- curriculum development is to improve the curriculum better To be consistent and appropriate to the needs or objectives.</td>
<td>4</td>
</tr>
<tr>
<td>- Get the teacher’s guideline about learning community PLC Production and processing of organic jasmine rice</td>
<td>3</td>
</tr>
<tr>
<td>- There are courses Manufacturing Organic Jasmine Rice Processing Can be used to improve teaching and learning for students and interested people completely</td>
<td>3</td>
</tr>
</tbody>
</table>

2.2 Which process do you like the most?

<table>
<thead>
<tr>
<th>What participants like</th>
<th>Frequency (school)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- brainstorming and attitude exchange</td>
<td>7</td>
</tr>
<tr>
<td>- the act presentation //</td>
<td>6</td>
</tr>
<tr>
<td>- Working process in group workshop, group summary, writing course and plan</td>
<td>5</td>
</tr>
<tr>
<td>- every movement. The entire production, processing and other</td>
<td>3</td>
</tr>
</tbody>
</table>
2.3 You think that after this training, you will create "How to develop the curriculum" and "Organic jasmine rice learning activities"

<table>
<thead>
<tr>
<th>What participants think about after joining the program.</th>
<th>Frequency (school)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get knowledge and get guidelines for the preparation of courses and plans for learning activities on organic jasmine rice. That will be used as a curriculum of educational institutions Lead to students Personnel in schools and communities</td>
<td>15</td>
</tr>
<tr>
<td>- applied in daily life to be used in teaching and learning</td>
<td>3</td>
</tr>
<tr>
<td>- Inserting in the course hours or integration.</td>
<td>2</td>
</tr>
<tr>
<td>- Soil preparation with biology. Reducing the cost of integrating teaching and learning in all subjects.</td>
<td>2</td>
</tr>
<tr>
<td>- Implementing practice guidelines for composing principles, importance of teaching steps from context Until the evaluation process Implementation of the results to reflect the improvement of the problem</td>
<td>2</td>
</tr>
<tr>
<td>- will apply the knowledge gained from this training to develop and use in schools and expand the results to the next community</td>
<td>4</td>
</tr>
<tr>
<td>- Organize organic jasmine rice project</td>
<td>1</td>
</tr>
</tbody>
</table>

Schedule analysis model to assess their satisfaction with the development of model community of learning PLC production and processing of organic Jasmine rice to the country's competitiveness
2) The results of training activities for teachers of the PLC learning community

Table of results of the analysis of the satisfaction evaluation form for the project training activities for teachersto develop the learning community model PLC, production and processing of organic jasmine rice for national competition Knowledge and understanding

<table>
<thead>
<tr>
<th>Details</th>
<th>$\bar{X}$</th>
<th>SD</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Knowledge and understanding in this subject before the training</td>
<td>3.77</td>
<td>0.86</td>
<td>Very much</td>
</tr>
<tr>
<td>2. Knowledge and understanding before this training</td>
<td>4.33</td>
<td>0.52</td>
<td>Very much</td>
</tr>
<tr>
<td>3. Can benefit</td>
<td>4.37</td>
<td>0.53</td>
<td>Very much</td>
</tr>
<tr>
<td>4. The advantages can be</td>
<td>4.42</td>
<td>0.58</td>
<td>Very much</td>
</tr>
<tr>
<td>5. To elaborate</td>
<td>4.30</td>
<td>0.59</td>
<td>Very much</td>
</tr>
<tr>
<td>6. You can organize your thoughts / ideas to the process of developing a systematic</td>
<td>4.30</td>
<td>0.55</td>
<td>Very much</td>
</tr>
<tr>
<td>7. Integration thought to. Teamwork / improvement The staff / reform the system in operation</td>
<td>4.30</td>
<td>0.63</td>
<td>Very much</td>
</tr>
<tr>
<td>Total</td>
<td>4.26</td>
<td>0.47</td>
<td>Very much</td>
</tr>
</tbody>
</table>

From the table, it was found that participants were satisfied with knowledge and understanding at a high level ($\bar{X} = 4.26$, $SD = 0.47$). In each issue, they were able to sort from descending order to find the advantages that can be told with the highest satisfaction ($\bar{X} = 4.42$, $SD = 0.58$), followed by being able to tell benefits ($\bar{X} = 4.37$, $SD = 0.53$) and knowledge in this subject before training ($\bar{X} = 4.33$, $SD = 0.52$) respectively.
Table of results of the analysis of the satisfaction evaluation form for the project to develop the learning community model PLC, production and processing of organic jasmine rice for national competition

The use of knowledge

<table>
<thead>
<tr>
<th>Content</th>
<th>X</th>
<th>SD</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Can apply the knowledge that has been applied in the work</td>
<td>4.37</td>
<td>0.53</td>
<td>very much.</td>
</tr>
<tr>
<td>2. Knowledge can be published / transmitted.</td>
<td>4.44</td>
<td>0.58</td>
<td>very much.</td>
</tr>
<tr>
<td>3. able to give advice to classmates</td>
<td>4.37</td>
<td>0.61</td>
<td>very much.</td>
</tr>
<tr>
<td>4. have confidence and able to apply the knowledge gained</td>
<td>4.33</td>
<td>0.64</td>
<td>very much.</td>
</tr>
<tr>
<td>5. in the field of learning community network</td>
<td>4.28</td>
<td>0.62</td>
<td>very much.</td>
</tr>
<tr>
<td>Total</td>
<td>4.36</td>
<td>0.50</td>
<td>very much.</td>
</tr>
</tbody>
</table>

From the table, it was found that the participants were satisfied with the use of knowledge at a high level (X = 4.36, SD = 0.50). In each issue, they could be sorted from descending to the highest level. Can continue to broadcast with the highest satisfaction (X = 4.44, SD = 0.58), followed by being able to apply the knowledge that has been applied to work and able to consult with classmates (X = 4.37, SD = 0.53; SD = 0.61) confident and able to apply the knowledge gained (X = 4.33, SD = 0.64) in the field of learning community network (X = 4.28, SD = 0.62) respectively.

Discussion

1. The results of the development of the master curriculum and the practice of teaching about the Professional learning community (PLC) production and processing of organic Hom Mali Rice get 26 topics. Most of them are integrated courses and interdisciplinary. The results of the development of prior knowledge and training principles have increased. The results of application are satisfied at the highest level and supervisory results were at the highest level. This may be due to production and processing Organic jasmine rice for national competition and For economic development, foundations and strong communities amid the changing of society from the heavy industry era to the digital age if using the development of a learning community model, Stoehr, J., Banks, M., & Allen, L. (2011). PLC (Professional Learning Community) will result in 1) the master of learning community (PLC) with quality that can increase revenue, reduce expenses 2) get innovation and inventions that is effective, reduces costs and is suitable for the context. The exchange of knowledge and expand the network more broadly, especially in the school population (Start Up) 3) The development of teachers and teacher production model to become a professional teacher at the local to international level. With courses and activities for production and processing That can
transfer technology to Thailand 4.0 and 4) can be modeled PLC-OHMLR Model that will lead to stability Wealth and sustainability consistent with the PLC thread provides the collegial support for substantive change to occur.

2. The guidelines of teachers about the PLC learning community in the production and processing of organic Hom Mali rice. Good practices of teachers about PLC professional learning communities in the production and processing of organic Hom Mali Rice got PLC guidelines in learning management, including Vision Planning. Creating works together, Putting together a goal and creating common values. It was found that the participants were satisfied with the use of knowledge at a high level. Robert J. Marzano (The Professional Learning Community at Work (PLC) model offers a systems approach to school improvement. Teachers are organized into grade level, course specific, or interdisciplinary collaborative teams in which educators work interdependently to achieve common goals for which members are mutually accountable. A process is put in place to ensure teams clarify the essential learnings for each course, grade level, and unit of instruction; establish consistent pacing; create frequent common assessments to monitor student learning, and agree on the criteria they will use to judge the quality of student work. Due to Richard Dufour (2003) reported that Professional learning communities judge their effectiveness on the basis of results. Working together to improve student achievement becomes the routine work of everyone in the school. Every teacher team participates in an ongoing process of identifying the current level of student achievement, establishing a goal to improve the current level, working together to achieve that goal, and providing periodic evidence of progress. The focus of team goals shifts.

Guideline
1. Should be working collaboratively represents best practice, teachers in many schools continue to work and share vision.

   2. Schools must also give teachers time to analyze and discuss state and district curriculum documents. More important, teacher conversations must quickly move beyond “What are we expected to teach?” to “How will we know when each student has learned?”
Reference


A Study of Differences in Factors Affecting Accounting Preparation of Small Entrepreneurs in Muak Lek Sub-District, Muak Lek District, Saraburi Province

Pratoomma Puriboriboon*
Damrong Sattayawaksakul**

ABSTRACT

The purposes of this research are to study the factors affecting accounting preparation of small entrepreneurs and to compare the differences in factors affecting accounting preparation of small entrepreneurs by gender, age, income, education level, and business type in Muak Lek Sub-district, Muak Lek District, Saraburi Province. Data was collected from a questionnaire administrated to small entrepreneurs (n = 140) in Muak Lek Sub-district. Descriptive statistics, independent T-test, One-way ANOVA, and Sheffe’s method of comparison were used to analyze the data. The findings showed that personnel, material, and management are important factors affecting accounting preparation of small entrepreneurs, but satisfaction of accounting preparation. Differences in educational background, age, and monthly income have a significant impact on factors affecting accounting preparation. Thus, the government or community should continue to train and develop knowledge for entrepreneurs so that entrepreneurs see the importance of accounting preparation and feel the need to create an account. The accounting preparation should have a format and a manual in the same direction and in accordance with accounting standards.

Keywords: Factors affecting accounting preparation, Small entrepreneurs, Local enterprises

Introduction

Accounting preparation is very important nowadays, not only for medium-sized or large enterprises, but small entrepreneurs also need to prepare accounts as well. Recording of financial information about the operation, both in relation to incomes and expenditures, allows the entrepreneurs to have relevant financial information such as operating income, profit and loss, capital, liabilities, and assets which makes it easier to manage or cut off unnecessary expenses (Samranchalarak, 2012). This may help in the general management and production and operation management of the entrepreneurs. In addition, it can also be used as basic information in various planning areas, for instance, expending of investment, marketing planning, applying for a loan, analyzing the strength and weakness of the operation for strategic planning (Nualthong, 2014). Currently, government-related enterprises try to support and encourage business owners to set up a single accounting system which can be utilized to cover all aspects. Separation of accounts for different purposes such as for tax filing, loaning, and business management is obsolete because it can be time-consuming and also undermines the credibility of the business(Jindamanee, 2017).

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**Instructors in the Master of Business Administration Program, Asia-Pacific International University
A number of researches have been studied to understand the various factors that affect the accounting preparation of the entrepreneur. Thongpracha, Irat, and Tangnatee (2014) found that the personnel still lack an understanding of the accounting preparation; there are redundant accounting records, no accounting control documents, resulting in errors in cash, cost calculation, and sales pricing. Most accountants choose a method of manual recording based on personal understanding rather than using a computer system to create an account database. Work without basic skills in accounting making accounting work that is not correct according to accounting principles (Hannimitkulchai, 2013). This finding appears to be consistent with the studies of Suwannaart (2013) and Wannwichit and Kongchan (2017) who also found that accounting knowledge and the understanding of the accounting preparation process will contribute to accounting efficiency. In addition, without having an account database system, only recording of income and expenses, causing financial information to be insufficient for management and business decision making. Moreover, different in education may have an impact on accounting preparation process. The accountants who graduated with a business administration major encounter more problems and obstacles in the knowledge, ability to prepare accounting documents, accounting methodology, and tools that are more practical than those who hold an accounting degree (Kositkanin, Deesukanan, & Treewichit, 2017).

Entrepreneurs in the community perform accounting activity by themselves. The majority of them have no education or hold a degree that is not in the field or related to accounting and never attend any accounting training. As the reasons, they have little knowledge about technology and accounting preparation which causing various problems such as personnel, management, working protocol, and budget respectively. (Wannalo, Leetragul, Yeunyong, & Suwan, 2015). Another reason for the abolition of accounting is that the entrepreneurs have a confident in their own way of operation management and believe that financial accounting information will not be useful in the future.

This research aims to study the factors affecting accounting preparation as well as to study the differences in factors that affect the accounting preparation of small entrepreneurs in Muak Lek Sub-district, Muak Lek District, Saraburi Province. The finding of this study may be used as a guideline for the development of deficiencies leading to accounting and to develop an accounting system for small entrepreneurs.

Research Objectives

1. To study the factors affecting accounting preparation of small entrepreneurs in Muak Lek Sub-district, Muak Lek District, Saraburi Province.
2. To compare differences in factors affecting accounting preparation of small entrepreneurs by gender, age, income, education level, and business type in Muak Lek Sub-district, Muak Lek District, Saraburi Province.

Research Methodology

1. Population and Sample
   The sample in this research was 178 small entrepreneurs in Muak Lek Sub-district, Muak lek district, Saraburi province. The sample size was calculated using Yamane’s (1973) formula. The population size was taken into consideration, and to keep sampling error from exceeding 0.05, the sample size needed to be at...
least 177.77, or 178. Responses were received from 140 entrepreneurs, for a response rate of 78.65 percent; data collection was carried out during the months of March – April 2019.

2. Variables
   The demographic variables included gender, age, education level, income, and business type.

3. Research Instrument
   The instrument used to collect data in this research was a survey questionnaire that was divided into 2 sections.
   Section 1 consisted of 5 items regarding respondents’ demographic profiles; the questions were of a checklist type.
   Section 2 was comprised of 20 items on factors affecting accounting preparation. These questions were in the form of a five-point Likert scale.

4. Measurement
   Factors affecting accounting preparation survey questions have been adapted from Hanwiwat, (2011) and Kositanin, Deesukanan, & Treewichit, (2017). Twenty items were selected and assessed on a five-point Likert scale (1 = "strongly disagree," 5 = "strongly agree"). Cronbach’s Alpha for the twenty items was 0.92, which is greater than 0.70, and indicated internal consistency between the instrument used to collect the data and the constructs being studied. Statistics used in data analysis were frequency, percentage, mean, standard deviation, independent T-test, One-way ANOVA, and Sheffe’s method of comparison.

Results
1. Demographic Profile
   Of the 140 respondents, 90 were females (64%), 48 individuals were 31 – 45 years old (34%), 83 graduated with no bachelor degrees (59%), 63 earned 10,001 – 30,000 baht per month (45%), and 91 were retail business (65%), as shown in Table 1.

<table>
<thead>
<tr>
<th>General Information</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>50</td>
<td>35.70</td>
</tr>
<tr>
<td>Female</td>
<td>90</td>
<td>64.30</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 years old and less</td>
<td>5</td>
<td>3.57</td>
</tr>
<tr>
<td>21-25 years old</td>
<td>11</td>
<td>7.85</td>
</tr>
<tr>
<td>26-30 years old</td>
<td>19</td>
<td>13.56</td>
</tr>
<tr>
<td>31-45 years old</td>
<td>48</td>
<td>34.29</td>
</tr>
<tr>
<td>46-50 years old</td>
<td>27</td>
<td>19.30</td>
</tr>
<tr>
<td>51 years old and more</td>
<td>30</td>
<td>21.43</td>
</tr>
<tr>
<td>Education Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No bachelor</td>
<td>83</td>
<td>59.30</td>
</tr>
<tr>
<td>Bachelor and higher</td>
<td>57</td>
<td>40.70</td>
</tr>
</tbody>
</table>
Table 1 Demographic Profile of Respondents (Cont.)

<table>
<thead>
<tr>
<th>General Information</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income (Baht)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10,000 and less</td>
<td>37</td>
<td>26.43</td>
</tr>
<tr>
<td>10,001-30,000</td>
<td>63</td>
<td>45.00</td>
</tr>
<tr>
<td>30,001-50,000</td>
<td>24</td>
<td>17.14</td>
</tr>
<tr>
<td>50,000 and more</td>
<td>16</td>
<td>11.43</td>
</tr>
<tr>
<td>Business Type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td>49</td>
<td>35.00</td>
</tr>
<tr>
<td>Retail</td>
<td>91</td>
<td>65.00</td>
</tr>
</tbody>
</table>

2. Comparisons of Differences in Factors Affecting Accounting Preparation Based on Gender, Age, Education Level, Income, and Business Type

2.1 Gender

Table 2 shows the t-test analysis results of a comparison of Differences in Factors Affecting Accounting Preparation by gender. Gender differences did not have a statistically significant effect on accounting preparation (p > 0.05).

Table 2 A Comparison of Gender and Factors Affecting Accounting Preparation

<table>
<thead>
<tr>
<th></th>
<th>Male (n=50)</th>
<th>Female (n=90)</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>S.D.</td>
<td>X</td>
<td>S.D.</td>
</tr>
<tr>
<td>Personnel</td>
<td>2.91</td>
<td>0.99</td>
<td>3.11</td>
<td>0.93</td>
</tr>
<tr>
<td>Materials</td>
<td>2.93</td>
<td>1.05</td>
<td>2.89</td>
<td>1.16</td>
</tr>
<tr>
<td>Management</td>
<td>2.86</td>
<td>1.15</td>
<td>3.04</td>
<td>0.99</td>
</tr>
<tr>
<td>Satisfaction of accounting preparation</td>
<td>3.81</td>
<td>1.02</td>
<td>3.81</td>
<td>0.92</td>
</tr>
</tbody>
</table>

* p ≤ 0.05  ** p ≤ 0.01

2.2 Age

Table 3 shows the F-test analysis results of a comparison of factors affecting accounting preparation by age. Differences in ages had a statistically significant effect on personnel, materials, and management of accounting preparation, (p < 0.05).

Table 3 Comparison of Age and Factors Affecting Accounting Preparation

<table>
<thead>
<tr>
<th>Personnel</th>
<th>S.S.</th>
<th>df</th>
<th>M.S.</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>22.49</td>
<td>5</td>
<td>4.50</td>
<td>5.72</td>
<td>0.000**</td>
</tr>
<tr>
<td>Within Group</td>
<td>105.32</td>
<td>134</td>
<td>0.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>127.81</td>
<td>139</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 3: Comparison of Age and Factors Affecting Accounting Preparation (Cont.)

<table>
<thead>
<tr>
<th>Materials</th>
<th>S.S.</th>
<th>df</th>
<th>M.S.</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>28.01</td>
<td>5</td>
<td>5.60</td>
<td>5.11</td>
<td>0.000**</td>
</tr>
<tr>
<td>Within Group</td>
<td>146.91</td>
<td>134</td>
<td>1.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>174.92</td>
<td>139</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management</th>
<th>S.S.</th>
<th>df</th>
<th>M.S.</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>26.13</td>
<td>5</td>
<td>5.23</td>
<td>5.49</td>
<td>0.000**</td>
</tr>
<tr>
<td>Within Group</td>
<td>127.42</td>
<td>134</td>
<td>0.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>153.55</td>
<td>139</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Satisfaction of accounting preparation</th>
<th>S.S.</th>
<th>df</th>
<th>M.S.</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>4.23</td>
<td>5</td>
<td>0.84</td>
<td>0.93</td>
<td>0.463</td>
</tr>
<tr>
<td>Within Group</td>
<td>121.64</td>
<td>134</td>
<td>0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>125.87</td>
<td>139</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p ≤ 0.05    ** p ≤ 0.01

To see which pairs of age means significantly differed from each other, Scheffe’s post-hoc pair-wise comparison test was performed, and the means showed statistically significant differences (p < 0.05) in personnel between respondents within the age of 26 – 50 years old and 51 years old and more, as shown in Table 4.

Table 4: Comparison of Age and Personnel by Scheffe’s Method

<table>
<thead>
<tr>
<th>Age (years old)</th>
<th>≤ 20 (n=5)</th>
<th>21-25 (n=11)</th>
<th>26-30 (n=19)</th>
<th>31-45 (n=48)</th>
<th>46-50 (n=27)</th>
<th>≥ 51 (n=30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 20</td>
<td>3.00</td>
<td>-</td>
<td>1.000</td>
<td>0.979</td>
<td>0.995</td>
<td>1.000</td>
</tr>
<tr>
<td>21-25</td>
<td>3.15</td>
<td>-</td>
<td>-</td>
<td>0.991</td>
<td>0.999</td>
<td>1.000</td>
</tr>
<tr>
<td>26-30</td>
<td>3.39</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.999</td>
<td>0.984</td>
</tr>
<tr>
<td>31-45</td>
<td>3.27</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.999</td>
</tr>
<tr>
<td>46-50</td>
<td>3.17</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>≥ 51</td>
<td>2.29</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* p ≤ 0.05    ** p ≤ 0.01

For the comparison of age and material factor, Scheffe’s post-hoc pair-wise comparison test showed that there was a significant differences between respondents with the age of 26-30 years old and those who were 51 years old and more, as shown in Table 5.
Table 5: Comparison of Age and Materials by Scheffe’s Method

<table>
<thead>
<tr>
<th>Age (years old)</th>
<th>≤ 20 (n=5)</th>
<th>21-25 (n=11)</th>
<th>26-30 (n=19)</th>
<th>31-45 (n=48)</th>
<th>46-50 (n=27)</th>
<th>≥ 51 (n=30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 20</td>
<td>3.04</td>
<td>0.987</td>
<td>0.933</td>
<td>1.000</td>
<td>1.000</td>
<td>0.730</td>
</tr>
<tr>
<td>21-25</td>
<td>2.60</td>
<td>-</td>
<td>0.236</td>
<td>0.936</td>
<td>0.881</td>
<td>0.943</td>
</tr>
<tr>
<td>26-30</td>
<td>3.64</td>
<td>-</td>
<td>-</td>
<td>0.399</td>
<td>0.695</td>
<td>0.001**</td>
</tr>
<tr>
<td>31-45</td>
<td>4.99</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.999</td>
<td>0.061</td>
</tr>
<tr>
<td>46-50</td>
<td>3.09</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.068</td>
</tr>
<tr>
<td>≥ 51</td>
<td>2.19</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* p ≤ 0.05  ** p ≤ 0.01

Table 6 shows a comparison of age and management by Scheffe’s method and the results showed that there were statistically significant differences between 26-45 years old and 51 years old and more.

Table 6: Comparison of Age and Management by Scheffe’s Method

<table>
<thead>
<tr>
<th>Age (years old)</th>
<th>≤ 20 (n=5)</th>
<th>21-25 (n=11)</th>
<th>26-30 (n=19)</th>
<th>31-45 (n=48)</th>
<th>46-50 (n=27)</th>
<th>≥ 51 (n=30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 20</td>
<td>3.12</td>
<td>1.000</td>
<td>0.968</td>
<td>1.000</td>
<td>1.000</td>
<td>0.610</td>
</tr>
<tr>
<td>21-25</td>
<td>2.93</td>
<td>-</td>
<td>0.668</td>
<td>0.988</td>
<td>1.000</td>
<td>0.530</td>
</tr>
<tr>
<td>26-30</td>
<td>3.58</td>
<td>-</td>
<td>-</td>
<td>0.789</td>
<td>0.555</td>
<td>0.001**</td>
</tr>
<tr>
<td>31-45</td>
<td>3.17</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.991</td>
<td>0.005**</td>
</tr>
<tr>
<td>46-50</td>
<td>3.00</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.113</td>
</tr>
<tr>
<td>≥ 51</td>
<td>2.23</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* p ≤ 0.05  ** p ≤ 0.01

2.3 Education Level

The t-test analysis results of a comparison of accounting preparation by education level are shown in Table 7. Differences in education level had a statistically significant effect on personnel (p = 0.001), materials (p = 0.016), and management (p = 0.001) respectively. However, no significant difference was observed in satisfaction of accounting preparation.

Table 7: Comparison of Education Level and Factors Affecting Accounting Preparation

<table>
<thead>
<tr>
<th>Factors</th>
<th>No Bachelor (n=83)</th>
<th>Bachelor and Higher (n=57)</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \bar{x} )</td>
<td>S.D.</td>
<td>( \bar{x} )</td>
<td>S.D.</td>
</tr>
<tr>
<td>Personnel</td>
<td>2.82</td>
<td>0.97</td>
<td>3.35</td>
<td>0.86</td>
</tr>
<tr>
<td>Materials</td>
<td>2.69</td>
<td>1.04</td>
<td>3.20</td>
<td>1.17</td>
</tr>
<tr>
<td>Management</td>
<td>2.73</td>
<td>1.08</td>
<td>3.33</td>
<td>0.91</td>
</tr>
<tr>
<td>Satisfaction of accounting preparation</td>
<td>3.69</td>
<td>1.01</td>
<td>3.98</td>
<td>0.85</td>
</tr>
</tbody>
</table>

* p ≤ 0.05  ** p ≤ 0.01
2.4 Income

A F-test analysis was conducted comparing factors effecting accounting preparation by income. Differences in income had a statistically significant difference in personnel, materials, and management, but no observation in satisfaction of accounting preparation (p > 0.05).

Table 8: Comparison of Income and Factors Affecting Accounting Preparation

<table>
<thead>
<tr>
<th></th>
<th>S.S.</th>
<th>df</th>
<th>M.S.</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personnel</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>13.69</td>
<td>3</td>
<td>4.57</td>
<td>5.44</td>
<td>0.001**</td>
</tr>
<tr>
<td>Within Group</td>
<td>114.11</td>
<td>136</td>
<td>0.84</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>127.80</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Materials</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>16.22</td>
<td>3</td>
<td>5.41</td>
<td>4.63</td>
<td>0.004**</td>
</tr>
<tr>
<td>Within Group</td>
<td>158.70</td>
<td>136</td>
<td>1.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>174.92</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Management</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>18.57</td>
<td>3</td>
<td>6.19</td>
<td>6.24</td>
<td>0.001**</td>
</tr>
<tr>
<td>Within Group</td>
<td>134.98</td>
<td>136</td>
<td>0.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>153.55</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Satisfaction of accounting preparation</strong></td>
<td>S.S.</td>
<td>df</td>
<td>M.S.</td>
<td>F</td>
<td>p</td>
</tr>
<tr>
<td>Between Groups</td>
<td>3.19</td>
<td>3</td>
<td>1.06</td>
<td>1.18</td>
<td>0.320</td>
</tr>
<tr>
<td>Within Group</td>
<td>122.67</td>
<td>136</td>
<td>0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>125.86</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p ≤ 0.05   ** p ≤ 0.01

Scheffe’s post-hoc pair-wise comparison test showed similar results of income and personnel and income and material. Statistically significant differences were observed between respondents with the income of less than 10,000 Baht and more than 30,000 Baht, as shown in Table 9 and 10.

Table 9: Comparison of Income and Personnel by Scheffe’s Method

<table>
<thead>
<tr>
<th>Income (Baht)</th>
<th>(\bar{X})</th>
<th>(\leq 10,000)</th>
<th>10,001-30,000</th>
<th>30,001-50,000</th>
<th>(\geq 50,001)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(\leq 10,000)</td>
<td>2.58</td>
<td>-</td>
<td>0.093</td>
<td>0.008**</td>
<td>0.029*</td>
</tr>
<tr>
<td>10,001-30,000</td>
<td>3.06</td>
<td>-</td>
<td>-</td>
<td>0.442</td>
<td>0.605</td>
</tr>
<tr>
<td>30,001-50,000</td>
<td>3.43</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.000</td>
</tr>
<tr>
<td>(\geq 50,001)</td>
<td>3.41</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* p ≤ 0.05   ** p ≤ 0.01
Interestingly, a comparison of income and management factor affecting accounting preparation by Scheffe’s method showed that there were statistically significant differences between less than 10,000 Baht and more than 10,000 Baht income.

### 2.5 Business Type

Table 9 shows the t-test analysis results of a comparison of Differences in Factors Affecting Accounting Preparation by business type. Business type differences did not have a statistically significant effect on accounting preparation (p > 0.05).

<table>
<thead>
<tr>
<th>Service (n=49)</th>
<th>Retail (n=91)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel</td>
<td>3.02</td>
</tr>
<tr>
<td>Materials</td>
<td>2.87</td>
</tr>
<tr>
<td>Management</td>
<td>2.97</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>3.74</td>
</tr>
</tbody>
</table>

Discussion

The results of this study show that the gender of the entrepreneurs and the types of businesses had no statistically significant on factors affecting accounting preparation, but differences in age affected accounting preparation significantly. Personnel, material, and management were important factors that
promote the preparation of accounting in most age ranges except 51 years old and more. Personnel, material, and management factors were obstacles for entrepreneurs who were 51 years old and more in accounting preparation compared with those who were in the age range of 26-50 years old, 26-30 years old, and 26-45 years old respectively. However, there was no statistically significant difference in the satisfaction of accounting preparation for all age groups.

Furthermore, educational background did have an impact on accounting preparation. Entrepreneurs with no degree felt that personnel, material, and management factors were problems and obstacles in their preparation of accounting compared with those who held bachelor or higher degree. This finding is consistent with the study of Kositkanin, Deesukanan, and Treewichit in 2017 stated that the entrepreneurs who have no degree or a degree in an unrelated field of accounting experienced more difficulty in the knowledge of accounting preparation process, ability to prepare documents, accounting methodology, and tools used in the operation. In addition, the studies of Suwannaart (2013) and Wannwichit and Kongchan (2017) who also found that accounting knowledge and the understanding of the accounting preparation process will contribute to accounting efficiency.

Regarding income of the entrepreneurs, this study indicates that entrepreneurs who earned less than 10,000 baht had more problems with personnel and material factors of accounting preparation compared with those who gained 30,000 baht or more per month and with those who made more than 10,000 in the management factor. This study is consistent with the researches of Chetkhunthod, and Eapsirimetee (2017) and Wannalo, Leetragul, Yeunyong, & Suwan (2015) who also found that different income groups focused on factor affecting accounting preparation differently. The problems and obstacles found mainly in personnel, management, accounting practice, and budget.

Conclusions

Our findings show that personnel, material, and management are important factors affecting accounting preparation of small entrepreneurs in Muak Lek Sub-district, Muak Lek district, Saraburi province. Differences in educational background, age, and monthly income have a significant impact on factors affecting accounting preparation. Thus, the government or community should continue to train and develop knowledge for entrepreneurs so that entrepreneurs see the importance of accounting preparation and feel the need to create an account. The accounting preparation should have a format and a manual in the same direction and in accordance with accounting standards.

References


Legal Measures for Motorcycle Taxi Professional Promotion in Hatyai Municipality Zone

Sattra Keawphang*
Thanakon Komonwanit**

ABSTRACT

The objective of research is to study problems related to the motorcycle taxi profession in Hatyai municipality zone. The research is based on a qualitative research studied and analyzed from documents, interviews and non-participation observation. The key-informants are four agencies, who supervise motorcycle taxi riders, 40 motorcycle taxi riders and 40 passengers. The authors found that problems related to motorcycle taxi profession in Hatyai municipality zone are as follows: 1) Submission of applications for public motorcycle registration is too infrequent, and rules and regulations of application on public motorcycle registration documents are not clear, which causes interested person to lack opportunities to be certified as professional motorcycle taxi riders. 2) There are no travelling fee signs, which cause collecting travelling fees in excess of the rate prescribed by law. 3) Collecting travelling fees in excess of the rate prescribed by law also exists because passengers lack options, and it is difficult for authorities to inspect the fees paid. 4) Illegal motorcycle registration is employed. 5) Motorcycle taxi rider clothing is inappropriate.

Keywords: legal measures, motorcycle taxi professional promotion

Introduction

Hatyai municipality has lots of tourist places that attract Thai and foreign tourists, which causes traffic jam and a lack of parking, particularly in the center of Hatyai. Many people usually use a motorcycle taxi as a vehicle for travelling in rush hour and for those who live in an area with no public transportation, for example, in small streets.

The motorcycle taxi rider is a profession for persons working possibly as a main job upon the termination of an employment contract, working freelance, or working as part time job because a motorcycle taxi rider does not need a high education. In addition, a motorcycle taxi rider can begin with a small amount of money and use private motorcycle, which needs to be registered as a public motorcycle. Then, the motorcycle taxi profession builds careers for people in the area and make transportation convenient for people who hire motorcycle taxi riders.

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**Assistant Professor, Faculty of Law, Thaksin University, Thailand
However, the motorcycle taxi profession in Hatyai municipality zone has several problems, such as, collecting expensive travelling fees. At the present time, Hatyai does not regulate the policy for public motorcycle registration to interested people who wish to register public motorcycles. Hatyai opened such opportunities in B.E. 2557 (2014) but motorcycle taxi riders must wait until the provincial committee requests applications. This regulation means that a new interested person has no chance to be a professional motorcycle taxi rider. Hence, it is necessarily to study problems related to motorcycle taxi profession and suggest policies.

**Purpose of Study**
To examine problems related to the motorcycle taxi profession in Hatyai municipality zone.

**Research Methodology**
This research is based on a qualitative study and analysis from documents, interviews and non-participation observation as follows:

1. The study included a study of documents, concepts and theories as a basis for research. For example, economic system principle, satisfaction principle, accident protection theory, crime prevention theory, background of motorcycle taxi rider and provisions related to motorcycle taxi riders, were studied from books, textbooks, research reports, theses, using the library and library databases.

2. An informal interview was conducted with three key type of informants as follows:

   2.1 State agencies, who supervise motorcycle taxi riders, such as; Songkhla transport agency, Hatyai municipality agency, Hatyai district agency and Hatyai police station of four people.

   2.2 The study also involved interviewing registered motorcycle taxi riders and unregistered motorcycle taxi riders, including 20 motorcycle taxi riders, with 10 years of experience and motorcycle taxi riders with a maximum of two years’ experience in order to obtain maximum variation sampling.

   2.3 40 Passengers were also interviewed. To select informants with maximum variation sampling, interviewees included students, government workers, private sector employees, freelance workers, Thai tourists and foreign tourists.

3. The researchers also observed the service of motorcycle taxi riders and the behavior of passengers regarding the issues provided in the observation form. In this step, the researchers served as non-participation served as non-participation observers.

**Results and Discussion**
The research found several problems related to the motorcycle taxi profession in Hatyai:

1. **Problems Related to Public Motorcycle Registration**
   In the motorcycle taxi profession, a motorcycle for hire must be registered as a public motorcycle (Vehicle Act B.E. Section 2522 (1979) 23/1), and a person who wishes to register a public motorcycle is require to complete a Motorcycle Taxi Registration issued by the Songkhla Provincial Committee. (Section 8
of Ministerial Regulation on Provincial Committee Related to Rules on Motorcycle Taxi Registration Approval B.E. 2556 (2013) and amended by Ministerial Regulation on Provincial Committee Related to Rules on Motorcycle Taxi Registration Approval (No.2) B.E. 2560 (2017)). Problems related to this public motorcycle registration are the following:

(1.1) The period of open submission of applications for public motorcycle registrations is too short
An interested person; who wishes to register a public motorcycle, shall wait until the period in which the provincial committee requests applications. The authors found that the period of the provincial committee’s request for submission for public motorcycle registration is uncertain. This is at the discretion of the Songkhla provincial committee, which has to wait for the policy from the central government organization before opening the opportunity for submission of qualified applications. The Songkhla provincial committee has opened two such opportunities in the past eight years (B.E. 2549 (2006) and B.E. 2557 (2014)), which has created an obstacle for the motorcycle taxi profession in Hatyai. This has caused an “imperfect competition market” on motorcycle taxis in the Hatyai municipality zone because the motorcycle taxi market is not in free competition.¹

(1.2) There are no clear rules and regulations on public motorcycle registration
While provincial committees of, for example, Bangkok and Pathumthani, have clear rules and regulations on motorcycle taxi registration, Songkhla, in which Hatyai district is situated, has no clear document on rules and regulations on motorcycle taxi registration. This causes no regulations of applications on public motorcycle registration.

2. Problems related to signage regarding taxi fees
Motorcycle taxi stations, in Hatyai have no signs posting travelling fee for customers because Songkhla provincial committee does not require motorcycle taxi riders to show their fees at the motorcycle taxi station. This is different than other provinces, for example, Section 14 of Announcement of Bangkok Metropolitan Administration on Imposition of Motorcycle Taxi Station and Rules on Motorcycle Taxi Registration Approval In Bangkok Metropolitan Zone B.E. 2561 (2018) requires travelling fees signs at motorcycle taxi stations.²

3. Actual travelling fees are in excess of the rate prescribed by law
The rate of motorcycle taxis shall be subject to Ministerial Regulations on Imposition of Motorcycle Taxi Travelling Fees Rate B.E. 2559 (2016).³ This study, found that motorcycle taxi riders usually collect travelling fees in excess of the rate prescribed by law, and motorcycle taxi riders collect higher travelling fees from foreign passengers and passengers from other cities than from local passengers. This finding is consistent with Kusuwan’s (2003) work, which analyzed the demand for motorcycle transportation and the personal factors that affected the differences in the evaluation of transportation

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4. Illegal motorcycle registration is employed for transporting
In the motorcycle taxi profession, motorcycles for hire must be registered as a public motorcycles (Vehicle Act B.E. Section 2522 23/1 (1979)). But the authors found that a great number of professional motorcycle taxi riders used private motorcycles for transporting passengers.

5. Motorcycle taxi rider clothing is often inappropriate
Under Section 3 of Ministerial Regulations of Imposition on Costume, Badge, History of Riders, Driving License and Driving License of Public Vehicle, Service Vehicle, Private Vehicle and Public Motorcycle Showing B.E. 2555 (2012), motorcycle taxi riders shall wear long trousers and shoes. Findings in this study indicate that motorcycle taxi riders usually wear shorts and sandals while riding their motorcycle taxi. The result is consistence with Promman’s (1997) work, which analyzed riding etiquette, components of laws and traffic law adherence services, language use and belief of motorcycle taxi riders in Hatyai municipality zone. On the component of dress code, there was no uniformity in what the drivers wore. What uniforms they had were rather faded and smelly.6

Conclusions
The authors found problems related to relate to motorcycle taxi profession in Hatyai municipality zone are as follows:
1. Problems on submission of applications for public motorcycle registration is too infrequent causes a new interested person has no chance to be a professional motorcycle taxi rider.
2. Problems on motorcycle taxi rider’s breach of the law, such as, collect travelling fees in excess of the rate prescribed by law or employ private motorcycles for transporting passengers.

Suggestions
The authors found problems related to the motorcycle taxi profession in Hatyaimunicipality zone and to suggest policies for solving claims are as follows:
1. Public motorcycle registrations should be mandatory power. If an interested person; who wishes to register a public motorcycle, has qualification, state agencies should grant public motorcycle registrations for applicants. In addition, state agencies should always open opportunity for qualified applications to register a public motorcycle
2. State agencies should strictly prohibit motorcycle taxi rider’s breach of the law in particular, such as, collect travelling fees in excess of the rate prescribed by law, show travelling fee sign at motorcycle taxi station or employ private motorcycles for transporting passengers.

References

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Developing English Descriptive Writing Ability by Balancing the Process-Writing and Product-Writing Approaches

Wichan Noimuengpuey*
Pimyupa Praphan**

ABSTRACT

This research study is aimed at developing students’ English descriptive writing ability by balancing the process-writing and product-writing approaches. The study investigated the students’ writing performance, identified their writing achievement and measured their satisfaction towards the writing lessons. The sample of 35 students in Grade 9 studied Fundamental English in the academic year 2016 at Roi-Et Wittayalai School was selected by purposive sampling. During the 20 hours of this study, the data were gathered through pre-test, post-test, writing tasks from four lesson plans, and a questionnaire for the students to record their satisfaction. The results show that the post-test mean scores were significantly higher than those of the pre-test. The data show that the overall performance of the students was highly positive. When looking at each type of performance, namely portfolio and reflection paper, they were positive with the mean scores of 4.43 and 4.74 with a standard deviation of 0.50, and 0.44 respectively. The overall satisfaction of the students towards learning English descriptive writing by balancing the process-writing and product-writing approaches was highly positive.

Keywords: English Paragraph Writing Skills, Process-Writing Approach, Product-Writing Approach

Introduction

Writing is a complex and multi-faceted activity. It is an active process of creating sense or meaning. According to Smith (1990), writing is a powerful tool for learning as well as for communication. Good writing abilities positively affect and benefit students’ learning during their studies and beyond, especially when taking an entrance examination, completing a job application, and etc. Although few entrance examinations have the writing sections, an important part that many contain is error identification, which requires solid knowledge of grammar. This knowledge is very important in writing. That is why the focus of English instruction in Thailand is on grammar.

From our teaching experience of over 10 years, we noticed that secondary school students cannot write accurately, but most students understand some grammar points. Writing skills are still difficult for students to develop because they need preliminary knowledge before starting to write, let alone producing a quality finished product straight away. It is difficult when students wish to use appropriate lexicon, grammatical structure and style as they study English as a foreign language. Pawapatcharudom (2007) and Sudruthai (2013) reported that average Thai students are considered to have very low English proficiency, especially in English writing skills.

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** Lecturer, Department of Western Languages and Linguistics, Faculty of Humanities and Social Sciences, Mahasarakham University
This research study aims to investigate the effectiveness of writing for lower secondary level students at Roi-Et Wittayalai School in Northeastern Thailand. The experiences of the first author working in the English department at Roi-Et Wittayalai School indicate that students’ English writing skills are rather weak and need development.

There have been numerous approaches to the teaching of writing in the history of language teaching. Flower & Hayes (1981) stated that a cognitive process model of writing has three main components: 1) The task environment; 2) The writer’s long-term memory; 3) The writing processes, which consists of planning, translating and reviewing. Neeld (1986) reported that writing skills were complicated; therefore, development requires constant attention and assistance from a helper or facilitator.

Halliday (1978) emphasized functional use of language in order to convey meanings rather than focusing on linguistic forms. Many English teachers studied his theory and adopted it to use in their writing classes to enhance students’ writing abilities. Flower & Hayes (1981) expanded on that idea and proposed their writing theory to acknowledge the complexity and difficulty of writing.

1) Writing is a product which requires a focus on form, accuracy, controlled format, one-shot writing, and writing as a linear motion.

2) Writing is a process which comprises a recursive practice, multiple drafts, and cognitive process.

3) Writing is a social act which has audience, social factors and cultural factors.

4) Writing is a genre which includes controlled patterns, writing style, and rhetorical moves.

According to Halliday’s social semiotic approach to literary theory, writing that focuses on functional use of language rather than a linguistic form is more effective in communicating to readers. Inevitably, there are prone to be some grammatical errors in writing that emphasizes functional use of language. Although writing skills remain difficult to teach, it is necessary for academic purposes (Flower & Hayes, 1981; Murray, 1982; White, 1987; Cathy, 1993; Tyner, 1995, and Nunan, 1999).

Two different views on the nature of writing have emerged: the product approach and the process approach. The product approach of writing focuses on the end result of the act of composition. The teachers who use this strategy are concerned only to see that the product is readable and grammatically correct. Students get involved in imitating models of good writing, carrying out sentence expansions from cue words and developing sentences from models.

In contrast, the process approach to writing focuses on the process of how students create their compositions. In this approach, the act of writing a composition evolves through several stages. Students are introduced to inventive techniques to help them discover and become engaged in a topic. They are asked for drafts of a work and taught that prewriting, drafting, revising, editing, and publishing are essential to good writing - rather than just being expected to turn in a finished product right away. The process strategy provides an opportunity for students to think about the purpose, the genre, and the audience of their writing. It develops a more top-down and student-centered approach to the teaching of writing (Holmes, 2006).

In her book “Teaching Writing: Balancing Process and Product” Tompkins (2004) emphasized that both the process and the product are essential components in writing instruction. She explained that “the writing process in a multi-step process based on how real writers write. This process is a foundation for teaching children to write. The product is the writing the children create. Their writing can take many forms or genres, ranging from stories and poems, to letters and reports".
Gocsik (2004) stated that everyone agreed that good products depend on good processes. In addition, Nunan (1990) stated that the “school of thought” has emphasized both of the two components: process and product.

From review of the relevant studies, it is evident that little research has been conducted using both the process and product approach to developing writing skills. Therefore, it is interesting, beneficial and worthwhile to investigate the results of using these approaches in teaching paragraph writing to lower secondary level students.

Research Questions

1. Does the teaching of paragraph writing by balancing the process-writing and product-writing approaches develop students’ descriptive writing abilities?
2. Are students satisfied with the techniques of teaching paragraph writing by balancing the process-writing and product-writing approaches?

Significances of the Study

The results of this study can be used as a set of guidelines to teach students at the lower and upper secondary levels to develop their writing skills. The teaching method can be useful for the teachers, revealing how both the process and the finished product of writing can be assessed in an English course. Additionally, it may provide useful information for teachers who are engaged in improving their own writing skills.

Studies of Developing English Paragraph Writing Skills by Balancing the Process-Writing and Product-Writing Approaches

There were quite a number of studies pertaining to teaching writing mostly by either product approach or process approach in the past. Sun and Feng (2009) investigated the process approach to teaching writing; they applied different teaching models. The results revealed that the process-writing approach helped students’ write effectively. However, the researchers did not use the product-writing approach to develop the students’ English paragraph writing.

Hason and Akhan (2010) studied approaches to writing in the EFL/ESL context by balancing product and process in a writing class at the tertiary level. There were two groups of students; the first group learned through the process-writing approach and the other learned through the product-writing approach. Then, the two groups were taught together with the product-writing and process-writing approaches. It was found that the two approaches enabled students to achieve their learning outcomes.

Hashemnezhed (2012) set out to find possible differences among Iranian EFL learners’ writing ability in terms of three writing approaches of product, process, and post-process. The participants of the study were sixty EFL sophomores at Azad University. The researcher divided the sample group into three classes of twenty. All three groups were exposed to three different approaches. The first group was exposed to the product approach, the second group to the process approach and the third group exposed to the post-process approach. In order to evaluate the effectiveness of three different writing approaches, the researcher gave two identical post-tests (cause-effect and procedural) to all three groups. The findings of the study revealed that the post-process approach did not show any significant
improvement over process approach, but they both showed remarkable effectiveness when compared to the product approach.

Pasand and Haghi (2013) asked the question as to whether the use of an incomplete text in the process-product approach to writing could have a positive impact on EFL learners’ accuracy in writing when asking the learners to complete the text rather than copying it. After training a number of EFL learners using the process approach, a two-session writing class was held. In the first session students wrote using the process approach, and in the second one they were given a model text to continue in the process-product approach. The writing performance of the students in these two sessions was compared in terms of accuracy. Based on the students’ writing performance, it was concluded that completing the model text in process-product writing can have a positive influence in some aspects of their writing accuracy such as punctuation, capitalization, spelling, subject-verb agreement, tense, the use of connectors, using correct pronouns and possessives. Also, the results of the paired t-test indicated that using a model text increased students’ writing accuracy.

Sarhady (2015) investigated the effect of the product/process-oriented approach of teaching writing on university students’ performance. It was found that focusing merely on the final product of writing did not result in achievement of optimal writing based on English conventions. Linguistic inaccuracies can also have a negative effect on the overall quality of students’ writing. The study came to the conclusion that the process-oriented approach to teaching writing was more effective than the product-oriented one.

Chudaporn (2010), Kanokporn (2010), Khemanan (2013), Thuleekarn (2013) and Salisa (2013) studied the effectiveness of English writing by using the process approach. The results from these researchers revealed that the process approach had positive impact on students’ writing and students gave a good satisfaction rating when taught by the process approach. In their research, only the process approach, not the product approach, was focused on.

After reviewing research, there are only a few studies investigating the combination of using the product-writing approach and the process-writing approach towards teaching English descriptive writing for lower secondary level students. Mostly, the research focused on the study at the level of higher education level using the process approach. There have been few reports on the study of the process-writing and the product-writing approach in teaching English paragraph writing for lower secondary level students.

Consequently, the overall goal of this study was to examine the effectiveness of the lesson plans by using the combination of the process and product approach to teaching writing. The pre-test, post-test, writing assessments and a reflection paper were employed to gather data from Grade 9 students at Roi-Et Wittayalai School. This study mainly focuses on developing English paragraph writing skills by balancing the process-writing and product-writing approaches.

Methodology
Participants
The participants were 35 students in Class 3/8 at the lower secondary level. They were studying Fundamental English at Roi-Et Wittayalai School, Roi-Et province, Thailand. The students were selected by using purposive sampling method.
Instruments
In order to answer the research questions, three research instruments were used to collect the data as follows: pre-test, post-test and a questionnaire.

Lesson Plans
Four lesson plans were used when teaching in this research project. Each lesson plan was designed to cover sixty minutes of teaching. The activities in these lesson plans focused on developing English paragraph writing skills.

Table 1: Paragraph writing materials

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Paragraph Writing Material Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Appearance</td>
</tr>
<tr>
<td>2</td>
<td>Personality</td>
</tr>
<tr>
<td>3</td>
<td>Occupation and Success</td>
</tr>
<tr>
<td>4</td>
<td>Profile / Personal Data</td>
</tr>
</tbody>
</table>

Pre-test and Post-test
To measure students’ writing ability, a fifty-word writing paragraph was assigned to students.

Questionnaire
A questionnaire was used in order to assess the satisfaction of the students towards the process and product strategies used during their writing class. The questionnaire was checked by three specialists. The IOC value of every item was 1.00. The questionnaire consisted of ten criteria for students to assess and reflect on their level of satisfaction towards their learning using the process-writing and product-writing approaches. The questionnaire uses a rating scale ranging from one to five which corresponded from least to most satisfied. It was distributed during the last period of teaching.

Data Collection
During the first week of the first semester, the pre-test was undertaken by thirty-five students in Grade 9. In the subsequent weeks, the lesson plans were used to teach English paragraph writing skills by balancing the process-writing and product-writing approaches. The research was conducted in a four-week session. At the end of the research, students were asked to complete a post-test, the reflection paper, and the questionnaire.

The data were collected in the following three ways:
1) Performance Assessment
   In order to determine the performance of the students when they wrote their paragraphs through balancing the process-writing and product-writing approaches, the researcher collected data from students’ four writing assignments in the form of a portfolio, a reflection paper, a class attendance form and a participation form.
2) Achievement Assessment
In order to ascertain the achievement of the students after completing the lessons of English paragraph writing through balancing the process-writing and product-writing approaches, the students were asked to write English descriptive writing assignments and students’ English descriptive writing assignments were assessed and measured using Arithmetic Mean and Standard Deviation (S.D).

3) Satisfaction Assessment

A questionnaire was used to measure the students’ satisfaction, when both the process and product approaches were used in their writing.

Data Analysis

A comparison between pre-test and post-test scores was analyzed by using SPSS. In this research study, the pre-test scores were illustrated by percentage.

Research Results

The results of the research study are presented in Table 2 below.

Table 2: A Comparison of Pre-test and Post-test Mean Scores of Students

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of students (n=35)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>8.89</td>
<td>17.71</td>
</tr>
<tr>
<td>SD</td>
<td>1.71</td>
<td>0.62</td>
</tr>
</tbody>
</table>

To investigate whether the students improved significantly in their writing ability, the pre-test and post-test mean scores were compared. From the pre-test, the mean writing scores and standard deviation scores of students were 8.89 and 1.71 respectively from 20 points. The post-test mean scores and standard deviation scores were 17.71 and 0.62 respectively from 20 points. It was noticed that the standard deviation increased. In the same way, the post-test mean scores of students were significantly higher than the pre-test mean scores. This means that students improved their English descriptive writing ability by balancing the process-writing and product-writing approaches.

However, students’ English descriptive writing ability from the pre-test showed that there were several writing errors including:

- below target number of fifty words (35 students from 35)
- spellings (33 students from 35)
- subject-verb agreement (30 students from 35)
- possessive pronouns (29 students from 35)
- tenses (28 students from 35)
- articles (20 students from 35)
- singular/plural nouns (18 students from 35)

From the post-test, students’ English descriptive writing ability showed the following instance of errors:

- below target number of fifty words (0 students from 35)
In brief, the post-test mean scores and standard deviation of students were significantly higher than the pre-test mean scores and standard deviation. This means that students improved their writing ability.

Table 3: Performance Assessment
This table shows how students’ skills in writing developed by using portfolio, reflection paper, class attendance and participation. (RQ1)

<table>
<thead>
<tr>
<th>n=35</th>
<th>Portfolio</th>
<th>Reflection paper</th>
<th>Class attendance</th>
<th>Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>4.43</td>
<td>4.74</td>
<td>5.00</td>
<td>5.00</td>
</tr>
<tr>
<td>SD</td>
<td>0.50</td>
<td>0.44</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

In order to find the level of performance that students attained through the learning from the lesson plans when process-writing and product-writing approaches were used, portfolio, reflection paper, and class attendance participation were observed, scored and analyzed. The data in Table 3 indicated that the overall performance of the students was highly positive. When looking at each type of performance, all of them namely the portfolio, reflection paper, class attendance and participation were positive with mean scores of 4.4, 4.74, 5.00 and 5.00 with a standard deviation of 0.50, 0.44, 0.00 and 0.00 respectively. In particular, the mean score of the class attendance and participation achieved a maximum score of 5.00 which means that students attended every class, came to class on time, participated enthusiastically in every activity, willingly provided ideas for the work and assisted others. However, a few students could not spell some words correctly such as the words ‘celebrity’ and ‘profession’.

Table 4: Achievement Assessment
This table shows how students’ English descriptive writing ability was enhanced.

<table>
<thead>
<tr>
<th>N=35</th>
<th>Lesson Plans</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Mean</td>
<td>10.91</td>
</tr>
<tr>
<td>SD</td>
<td>0.89</td>
</tr>
</tbody>
</table>

The data in Table 4 indicated that students’ English descriptive writing abilities were gradually developed when looking at the mean scores from lesson plan 1 to lesson plan 4 at 10.91, 12.40, 14.34 and 17.17 respectively with standard deviation of 0.89, 0.95, 0.76 and 0.89 respectively. However, the
research showed that in lesson plan 1, 2, 3 and 4, there were those who could not write more than 50 words - 33, 35, 35 and 35 students respectively. With regards to spelling errors, there were 33 students who could not spell some words correctly in lesson plan 2, 15 students in lesson plan 3 and 7 students in lesson plan 4.

When using tenses, some students used an incorrect form such as:

- “He was tall” instead of “He is tall”
- “She had long hair.” should be replaced by “She has long hair.”
- “I am study in Roi-Et Wittayalai School” rather than “I am studying in Roi-Et Wittayalai School”

When using tenses, it was found that 28, 15, 5 and 3 students made mistakes from lesson plan 1, 2, 3 and 4 respectively.

Subject-verb agreement errors occurred with 20, 12, 3 and 2 students from lesson plan 1, 2, 3 and 4 respectively.

There were 14, 8, 1 and 1 student from lesson plan 1, 2, 3 and 4 respectively who used possessive pronouns incorrectly.

Also, from lesson plan 1, 2, 3 and 4 the number of students that used singular and plural nouns incorrectly was 12, 6, 1 and 1 respectively.

In order to find the level of satisfaction students had towards their learning of English descriptive writing ability by balancing the process-writing and product-writing approaches, students answered a questionnaire and then the data were analyzed.

This finding revealed the students’ satisfaction towards writing activities when both the process-writing and product-writing approaches were used. The results are shown in Table 5.

Table 5: Satisfaction Assessment

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>SD</th>
<th>Satisfaction Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. You have a chance to think before writing by discussing with classmates.</td>
<td>4.86</td>
<td>0.35</td>
<td>very satisfied</td>
</tr>
<tr>
<td>2. You make the first draft from the handouts provided.</td>
<td>5.00</td>
<td>0.00</td>
<td>very satisfied</td>
</tr>
<tr>
<td>3. You give some comments to your writing, read some suggestions and comments among your peers, teachers.</td>
<td>5.00</td>
<td>0.00</td>
<td>very satisfied</td>
</tr>
<tr>
<td>4. You develop and improve your second draft and final draft from peers’ and teachers’ suggestions.</td>
<td>5.00</td>
<td>0.00</td>
<td>very satisfied</td>
</tr>
</tbody>
</table>
5. You learn what your mistakes are. & 4.97 & 0.17 & very satisfied  
6. You learn your strength about writing. & 4.94 & 0.23 & very satisfied  
7. You have ideas to create your work based on content, organization, vocabulary, mechanics and language use. & 4.97 & 0.17 & very satisfied  
8. Besides learning about organization in writing, you also learned new vocabulary. You have gained language skills, and learn about language use and mechanics. & 4.91 & 0.28 & very satisfied  
9. You can give some comments towards your work. You can choose the best one from your work and you can give reasons why you like it the most. & 5.00 & 0.00 & very satisfied  
10. You feel that developing English descriptive writing by these lessons are good and you like it. & 5.00 & 0.00 & very satisfied  

From Table 5, the overall satisfaction of the students towards learning English descriptive writing by balancing the process-writing and product-writing approaches was highly positive. When looking at each item, the students’ satisfaction was rated very highly.

**Discussions**

Overall, the findings from this study demonstrated the students’ development of their English writing skills when the process-writing and product-writing approaches were used. The students’ performance and achievement in developing their English describing writing ability were significantly high and positive. Students were very satisfied with the teaching of English descriptive writing by balancing the process-writing and product-writing approaches. They learned to use model texts and write more effectively using a writing model. They generated and broadened ideas as a starting point while working on organization of their ideas in the drafts. Students’ writing assignments were incrementally improved by using a number of drafts to develop writing ability. They could give, take and share ideas with peers and teachers while reducing mistakes and weaknesses.
Students’ descriptive writing ability was improved through the use of balancing the process-writing and product-writing approaches. The reasons for improvement are:

• They learned to use text and they could write more from model writing.
• They generated and broadened ideas as starting point with a scope of idea organization.
• Students’ writing was more than one draft to develop writing ability. They had many chanced to revise their English descriptive writing assessments by learning from peers’ and teachers’ comments.
• Students could give, take and share some ideas with peers and teachers. It means that they had chances to reduce mistakes and weakness of their English descriptive writing draft to a final draft as a product of their writing ability.
• Students learned how to be creative by emphasizing end product. They learned how to balance both writing-process and writing-product approaches to write their assignments. Before they could see what their end product was, they learned how to create, adapt and develop their writing draft from draft 1, draft 2 to the final draft.

In this research, there are some limitations of the study. They are as the following:

• The big gap in students' English background caused difficulty in operating the lessons. Some lessons used longer time than expected as the teacher/researcher had to explain more, and take more time in repeating the instructions or contents to be delivered. We believe that this is not uncommon in the Thai classroom context.
• The test room was affected by the noise and distractions from other classes on the day the data were collected. This might have affected some students’ performance.

Suggestions for Further Research

1. In this study, it had been found that some students’ language level and range of vocabulary were too low; therefore, they could not convey their good content to the readers effectively. So, it is necessary to allow them to use a dictionary in all of the lessons and during the post-test. The use of mobile phone to surf the internet for some vocabulary also helps.
2. In the test administration, a quiet place to avoid distractions should be a priority.
3. This method of teaching by balancing the process-writing and product-writing approaches can be applied to teach writing skills of other genres and at other levels, and research in this area is worth pursuing.

Conclusion

This research has contributed to the teaching of writing to Thai lower secondary students and beyond. It was an essential process to explore problems and improve the teaching procedures. The teaching of English descriptive writing skills by balancing the process-writing and product-writing approaches yielded improved results in the post-test showing that the students’ learning consequently increased. The students also showed satisfaction towards learning by the combination of the two approaches.
Bio Data

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References


Analyzing EFL Facilitators’ Interactional Features Used in an Out-of-Class Activity of a University in the Northeast of Thailand

Chainarong Thongboonchuen*
Pimyupa Praphan**

ABSTRACT

This study is intended to identify interactional features used by two English as a foreign language (EFL) facilitators in an out-of-class conversation activity for university students in northeastern Thailand. Only few research studies have been conducted to analyze the role of facilitators in extra-curricular activities. In order to achieve such aims, two facilitators, one native and one non-native English speakers who organized the activity, were purposively selected as participants of the study. The activity was audio-recorded for a total duration of 10 hours and was transcribed following the conversation analytic methodology. The analysis of the data was done based on the SETT (Self-Evaluation of Teacher Talk) framework developed by Walsh 2006, 2011. (Fourteen interactional features were identified in the two facilitators’ speech with extended teacher turn and teacher echo occurring less frequently than other features, unlike in traditional classroom settings. The findings suggest that it is essential that English teachers learn about the framework to observe their own language use in classroom so that the quality of learning is enhanced.

Keyword: Interactional features, out-of-class activity, self-evaluation of teacher talk

Introduction

Classroom talk is known to be one of the most important aspects in the field of English language teaching that is worth exploring as it is a place in which students and teachers have a chance to interact with each other. During their interactions, both students and teachers co-construct a classroom discourse specific for that context and it contributes to the learning of both parties as ‘learning arises not through interaction, but in interaction’ (Ellis, 2000).

This research was grounded on findings in the literature that even though the main objective of teaching English in Thailand is for students to acquire communicative competence (Noom-ura, 2013), most Thai students are not capable of communicating in English. There are many causes to this problem: poorly-trained teachers, overly large class size with learners of mixed abilities (Dhanasobhon, 2006). (However, one underlying factor of this problem could be from the fact that Thai students are not provided adequate opportunities to use English in classroom as English language teaching in Thailand is mostly teacher-fronted emphasizing grammar drills instead of communicative competence. To excel in English, these learners cannot only rely on classroom instruction. They may resort to out-of-class activities.

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in which they are given more opportunities to acquire communicative competence of the target language. In this study, the data were collected from an out-of-class conversation activity conducted in a public university in northeastern Thailand. It is hoped that by looking at the language used in the activity, teachers or facilitators will be aware of their use of language which can affect students’ learning.

Research question
1. What are the types of interactional features used in an out-of-class activity named Conversation Table by EFL facilitators?

Review of Literature
Out-of-class activity
Being in a circumstance where using English in real-life situations are rare to encounter, learners may take part in out-of-class activities as opportunities to learn and practice the language. This is where learners engage themselves into a language learning environment as engaging oneself in an out-of-class learning helps with retention of items as well as acquisition for new ones. Gairns and Redman, 1986. (Out-of-class learning, according to Benson 2001, is defined as any kind of learning taking place outside the classroom and can be divided into three categories: self-instruction, naturalistic learning, and self-directed naturalistic learning. Self-instruction refers to a learner’s effort to make use of existing resources to achieve one’s own language goal. An example of such a learning type is a learner watching a movie spoken in the target language while having a specific goal in mind. The learner might pause the movie from time to time to imitate the accent or the language used in the movie right at that moment. Naturalistic learning, on the other hand, is described as being involved in real-life situations to be able to function in such circumstances. For instance, while watching a movie in the target language, the learner’s primary aim is to make sense of situations in the movie rather than to look for a language point to practice. The last type of learning, self-directed naturalistic learning, has combined characteristics of the first two types. The learner utilizes naturally occurring environment and resources while fulfilling pedagogical goals of the activity. An out-of-class activity which can be an example of this type of learning is when the learner watches a movie instead of paying attention to specific language learning goals while watching, the learner notices potential language learning points achieved while enjoying the experience of watching the movie. This last type of learning tends to occur in advanced learners.

Most research studies dealing with out-of-class learning primarily focus on the learners’ perceptions. Gao 2008 (analyzed participants in a conversation activity’s comments on an online forum and found that the positive comments resulted from the activity’s leaders and friendliness of the activity. Hyland 2004 (investigated learners in Hong Kong through questionnaires, interviews, and journal entries. The results revealed that the learner found it awkward to speak English with their peers who they normally communicate with in Cantonese, thus activities they did to practice English were mostly receptive ones related to listening and reading skills.

Another common theme found in the literature of out-of-class learning is raising awareness. As found in Guo 2011 (who encouraged her students to take notes of written English found in their daily life in Taiwan then brought the notes to have discussions with their classmates in order to make students realize that with more effort to pay attention to the surrounding, students are, all the time, surrounded by English. The merits of out-of-class activities have been well attested in previous research, but few studies have
investigated the roles of the facilitators in these activities. The interactions between the facilitators and learners are worthy of research endeavors, and one of the most suitable frameworks to be used in analyzing those interactions is self-evaluation of teacher talk (SETT).

**Self-Evaluation of Teacher Talk**

Self-Evaluation of Teacher Talk (SETT) is a framework proposed by Walsh (2006) to help teachers understand the interaction between themselves and their students of their own class. This descriptive protocol enables teachers to evaluate their own teaching, monitoring their own language use in class. Teacher talk (to see if their teacher talk helps or interrupts learners to achieve a particular pedagogical goal of each lesson). SETT is identified by four contexts which are categorized by turn-taking patterns in classroom called “modes”. The four modes are as follows: managerial mode, material mode, classroom context mode, and skill and system mode. Each mode has its specific pedagogical goals and different interactional features. All 14 interactional features and their descriptions are exemplified in the table below.

<table>
<thead>
<tr>
<th>Interactional feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Scaffolding</td>
<td>(1) Reformulation (rephrasing a learner’s contribution).</td>
</tr>
<tr>
<td></td>
<td>(2) Extension (extending a learner’s contribution).</td>
</tr>
<tr>
<td></td>
<td>(3) Modelling (correcting a learner’s contribution).</td>
</tr>
<tr>
<td>B. Direct repair</td>
<td>Correcting an error quickly and directly.</td>
</tr>
<tr>
<td>C. Content feedback</td>
<td>Giving feedback to the message rather than the words used.</td>
</tr>
<tr>
<td>D. Extended wait-time</td>
<td>Allowing sufficient time (several seconds) for students to respond or formulate a response.</td>
</tr>
<tr>
<td>E. Referential questions</td>
<td>Genuine questions to which the teacher does not know the answer.</td>
</tr>
<tr>
<td>F. Seeking clarification</td>
<td>(1) Teacher asks a student to clarify something the student has said.</td>
</tr>
<tr>
<td></td>
<td>(2) Student asks teacher to clarify something the teacher has said.</td>
</tr>
<tr>
<td>G. Confirmation checks</td>
<td>Making sure that the teacher has correctly understood the learner’s contribution.</td>
</tr>
<tr>
<td>H. Extended learner turn</td>
<td>Learner turn of more than one clause.</td>
</tr>
<tr>
<td>I. Teacher echo</td>
<td>(1) Teacher repeats a previous utterance.</td>
</tr>
<tr>
<td></td>
<td>(2) Teacher repeats a learner’s contribution.</td>
</tr>
<tr>
<td>J. Teacher interruptions</td>
<td>Interrupting a learner’s contribution.</td>
</tr>
<tr>
<td>K. Extended teacher turn</td>
<td>Teacher turn of more than one clause.</td>
</tr>
<tr>
<td>L. Turn completion</td>
<td>Completing a learner’s contribution for the learner.</td>
</tr>
<tr>
<td>M. Display questions</td>
<td>Asking questions to which the teacher knows the answer.</td>
</tr>
<tr>
<td>N. Form-focused feedback</td>
<td>Giving feedback on the words used, not the message.</td>
</tr>
</tbody>
</table>

There are several studies utilizing SETT as the framework to explore different modes in their classroom. For example, Lucero and Rouse (2017) explored a teacher education program at a university and found that its transactional episodes of the class led to imbalanced interaction as both teacher and students came to class with pre-planned conversational agenda which might not correspond to each other, thus making patterns of interaction in the class unnatural. A study by Ghafarpour (2016) also investigated modes in classroom and revealed that mode application is context-based, meaning when one mode is dominant, it leaves too little time for the others. Suryati (2015) adopted this framework to observe a class in East Java and found that much of interaction in the classroom revolved around material mode as well as skill and system mode. Furthermore, the most frequent strategies the teacher used in class include the Initiation-
Response-Feedback IRF (pattern, display questions, teacher echo, and extended learner turns, while some other strategies, one of which being students’ extended turns did not occur much. Another study worth mentioning is by Korkut and Ertaş 2017 (in which they explored the material mode in the SETT framework and the role of mother tongue in the context of Turkey). The study revealed that even though each interactional feature within the material mode are present, there are also some cultural perspectives that need to be taken into consideration for each local practice. However, the site of the present research does not fully function as a classroom since it does not have specific goals to achieve for each meeting. Hence, modes will not be explored in this study. Instead, interactional features are the main focus.

Research Methodology

Context and participants

The data were drawn from an out-of-class conversation activity named “Conversation Table” (CT) organized at an education unit inside a government-funded university in northeastern Thailand. This activity has been operated since 2013 to be an alternative platform for students and other interested individuals to practice English speaking skills in an informal setting through their own self-initiated topic. Attendees can propose their preferred topics by writing on a piece of paper given at the beginning of the activity. The topics were then put in a box and each would be picked up one by one. Once done with one topic, it went on to the other until the end of the activity which lasted one hour and a half. The convenience sampling was employed to select two university lecturers who organized the activities as the main research participants. The non-native English lecturer, Somchai pseudonym (is an EFL lecturer with over 10 years of experience whereas the native English speaker, John pseudonym teaches International Relations with over 10 years of experience teaching in northeastern Thailand). Despite being university lecturers, their roles for CT were not to explicitly teach English. Rather, they facilitated the activity by maintaining the flow of conversations. On the other hand, people who joined the activity (‘attendee”) were mostly students from various fields of study. Since CT was not a required activity for students to attend, numbers of attendees varied each meeting, usually ranging between 10-15 people.

Data collection and data analysis

This study obtained data from audio and video recordings of naturally occurring conversations in an out-of-class conversation activity named Conversation Table (CT) for a total duration of 10 hours. The recordings were then transcribed following the transcription system by Walsh 2011. (The transcriptions were analyzed by the SETT framework. The first step of the analysis was familiarizing with the data by reading and rereading, followed by identifying the emerging interactional features, and the last step was analyzing the identified interactional features.
Results

After analyzing the data, it was found that the two facilitators have used all 14 interactional features outlined in the SETT framework. The non-native English speaker is referred to as F1 while the native English speaker is referred to as F2. The results indicated that in the two facilitators’ speech, extended teacher turn and teacher echo occurred less frequently than other features, unlike in traditional classroom settings. Some examples of the identified interactional features are shown below.

a (Scaffolding : Reformulation)

Extract 1:

1. A1: I sometimes watch about the prime minister Prayuth Chan-o-Cha=
2. AA: )=laughter(
3. A1: he said about the policy on Friday err every Friday about the policy that not allow people sit in the back seat of the car actually er we have this rule for many years but it will come back to use this year because it’s dangerous for people to sit at back seat of the car
4. F2: I think you mean in the back of the pickup truck?
5. AA: yes
6. F2: We don’t say the back seat of the car I was imagining that I cannot use my limousine and my driver=
7. AA: )=laughter(

While discussing the topic of a government policy, the attendee was trying to add details to his explanation. Noticing the wrong expression, the facilitator then reformulated the attendee’s previous utterance turn 3 (from “the back seat of the car” to “in the back of the pickup truck” as illustrated in turn 4.

b (Direct repair)

Extract 2:

8. F1: why you do think a lot of people want to go to work in Bangkok so much?
9. A1: there are many companies there a lot of jobs to do I think
10. A2: but I don’t want to work in Bangkok it’s traffic jam
11. A3: I think about สามส่วนสี่ว่าไงอ่ะ how do you say three-fourths? (2) [drawing the fraction ¾ in the air [three-four? =
12. F1: =it’s three-fourths
13. A3: yeah three-fourths of people in Thailand live in Bangkok .. too many people

During the topic of why people want to go to work in Bangkok in the above extract, the attendee was trying to use a fraction to express quantity. At first, she asked her fellow attendee in her native language of Thai about how to say that in English while air drawing the number before hesitantly came up with “three-four? ” in turn 11. The facilitator then directly corrected her response in turn 12. Consequently, the
attendee made use of the correct form in the following turn to continue her contribution in the conversation. According to Walsh (2006), most learners prefer this ‘direct repair’ feature.

c (Extended learner turn)

Extract 3:
14 A1: the topic is what do you prefer writing with? a pen or a pencil umm for me I like to write with a pencil because it is easy to erase
15 F1: what about others?
16 A2: I like pen because I write with my left hand when I use pencil my hand is going to be black [pointing at the palm of his left hand] because it touch the black color in the pencil
17 F1: what do you call that black thing in the pencil lead? anybody knows?
18 A1: wait I just learned about it err I forgot the name wait (5) (not carbon what is it? ... graphite
19 F1: yes graphite

From the above extract, the facilitator was asking if anybody knew the name of the black substance in pencil. To respond to the question asked, the attendee was trying to recall the name of the substance as shown in turn 18. Instead of completing the answer for the attendee, the facilitator extended the attendee’s turn by allowing him to pause for several seconds to finally come up with the answer because the facilitator was confident in the student’s prior knowledge. Such action encouraged the attendee to retrieve the needed term from their language repertoire.

d (Referential questions)

Extract 4:
20 F2: what are your opinions on a student uniform? do you think university students should be allowed to wear whatever they want to class?
21 A1: I don’t think so what if someone like Alex wears the same jeans for a month and don’t wash it at all?
22 A2: yes, that’s true
23 AA: laughter
24 A2: I would be )2?(ngued if he really did that
25 F1: what is ngued? I never heard of it
26 A2: it means like )2? (speechless because we can’t believe someone would really do that

Referential questions refer to questions to which the teacher genuinely does not know the answer. In turn 24, the attendee was using the word ‘ngued’ which is a northeastern Thai dialect to express her thought. In the following turn, the facilitator, who comes from the north of Thailand and does not speak the dialect, genuinely asked the attendee what the word meant without an intention of testing any kind of knowledge. After pausing for two seconds, the attendee explained the concept of her choice of word used earlier in English as seen in turn 26.
e (Seeking clarification)

Extract 5:
27  F2:  can you read what’s the topic you got?
28  A1:  what are you gonna have for dinner?
29  F2:  here comes the most controversial topic=
30  AA:  )=laughter(
31  F2:  =because it makes everybody hungry and want to go eat now you all are
   thinking about food and you don’t want to talk anymore what do you think
   you’ll have for dinner?
32  A1:  I still have no idea it’s tried to think about what to eat every day
   maybe }2 (kai jeaw
33  F1:  what food is that?
34  A1:  kai jeaw
35  F1:  I don’t know it can you tell me more about it? what it looks like or
   tastes like
36  A1:  hmm }2 (it’s egg ... fried egg and you eat it with rice
37  F2:  I see it’s Thai omelet on rice
38  A1:  yes yes

During the topic of food, the attendee answered the question in Thai by saying “kai jeaw” in turn 32. Before stating the answer, there was a two-second pause, signifying that she could not think of the right word to say in English; therefore, her L1 Thai was used. The facilitator, who is Thai, knew what food that was but still would like the attendee to explain it in English. Having that in mind, he intentionally asked her to clarify her answer, and then she gave her clarification in turn 36. The facilitator finally revealed to the attendee what the food is called in turn 37.

f (Confirmation checks)

Extract 6:
39  A:  what’s your current favorite TV show? umm my favorite TV show right now
   is Rupaul’s Drag Race
40  F1:  what is it about?
41  A:  it’s a competition between drag ... drag queen it’s a competition umm )1 (in Thailand it’s like Miss Tiffany but Miss Tiffany they look for the
   most beautiful and most intelligent ladyboy or transgender but in this
   show they look for )4 (er
42  F1:  the scariest?
43  A:  NO) laughter( 
44  F1 :  then can you explain?
45  A:  er drag queen is not like ladyboy ladyboy want to live like a woman but
drag queen they are like dress as a woman to perform dance lip-sync
F1: oh you mean ladyboys live as women but drag queens only dress up as a woman for performances like in cabaret shows?
A: yes

Confirmation check refers to when a teacher makes sure he or she correctly understands the student’s answer. In extract 6 in turn 44, the facilitator was confused about a concept of being a lady boy (and a drag queen). Illustrated in turn 45, the attendee explained the differences between the two concepts before the facilitator finally asked for a confirmation of his understanding in the next turn. In the last turn 46, the attendee said “yes” as a confirmation.

Extended learner turn
Extract 7:

A1: right now I love the show called Savage Travel does anybody watch this show?
A2: I watch it it’s very fun what episode you like the most?
A1: I just watched the one that he went to Namibia
A2: was it the one we watched together?
A1: yeah
A1: he went there alone and recorded the whole show by himself he’s so cool
A3: what was the interesting thing about Namibia?
A1: oh I learned that the name of the country came from the desert called Namib then it became Namibia
F1: uh huh
A2: and Germany took over the country they took all the diamonds
A1: the part of the country where they took diamonds used to be very rich you know they had hospitals market and everything but when they don’t have diamonds anymore people just left that area and it became very poor again
F1: that’s sad

In the above extract, two attendees who shared the same interest in the topic of TV show dominated most of the conversation. Believing in their ability to carry conversations, the facilitator intentionally let them express their thoughts. Of the whole conversation, the facilitator made only two contributions in turns 55 and 58, signaling his acknowledging of what was going on in the conversation.

Teacher interruption
Extract 8:

A5: when I was in America for the work and travel my friends and I always ate guacamole it was weird= at first because it tastes sour and=
F2: =here is a picture of guacamole [shows a picture to participants from his phone and participants pass the phone over around the table[ please go on sorry
A5: where I left off hmm :) 4 (oh it tastes sour and a bit weird but at first it became one of my favorite snacks and now I miss eating it

As the attendee was talking about a kind of food that other fellow attendees were not familiar with, the facilitator interrupted the attendee’s contribution by showing a picture of the food mentioned on his phone. Despite a good intention, such action interrupted the attendee’s thought as seen in turn 61 that she forgot where she was in the conversation. Teachers should be aware of this type of action as it may have a negative effect on students.

i (Form-focused feedback)
Extract 9:
62 A7: I was very exciting when I traveled on plane for the first time so I go to Korea with my school.
63 F2: you were EXCITED when you flew for the first time
64 A7: oh yes I was very excited

In extract 9, the facilitator gave feedback on the attendee’s contribution by emphasizing the word “EXCITED”, so the attendee knew the correct form of the word. As a result, the attendee acknowledged the feedback by saying the correct form of the word in turn 64.

Discussion
The findings offer answers to the research question that all 14 interactional features in the SETT framework (Walsh, 2011) were present during the activity. It can be said that even though the Conversation Table activity, which was the source of data in this study, does not operate as a traditional language classroom, it does offer instructional values contributing to the learning of attendees as out-of-class activities contribute greatly to language learning in terms of acquiring new knowledge and retaining old one (Gairns and Redman, 1986).

However, some interactional features such as extended teacher turn, which is described as a teacher dominating most turns in conversation to intentionally teach a specific linguistic feature, did not occur as frequently as other features. The reason for the happening was because the activity’s objective was not to explicitly teach the target language as practiced in most Thai classrooms. Rather, attendees learned from naturally occurring conversations with assistance from both facilitators as well as other attendees whose English proficiency is higher than theirs.

The interactional features in the SETT framework made the two facilitators aware that their language used in the activity could impact attendees’ learning positively or negatively. Hence, it is essential that English teachers learn about the framework to observe their own language use in classroom so that the quality of learning is enhanced.

Limitation of the study
Even though the objective of the research was achieved, there was one inevitable limitation. That is, data of the research was drawn from an unrequired out-of-class activity, making the numbers of attendees...
vary each meeting. Therefore, an emphasis could not be put on the attendees. If the research had been conducted to study a specific group of attendees, there could have been other interesting findings.

Conclusions

It is advantageous to analyze teacher talk to see interactions between teachers and students (experts and novices, in this case) as it can reveal the nature of interactions in a language learning setting. Learners of English may engage themselves in an out-of-class activity to find opportunities to learn and practice the language when classroom instruction is not sufficient. Teachers who have the ability to do self-evaluation can enhance learning opportunity both in and out of class.

Suggestions

Further research of this nature may be conducted to investigate learners’ improvement in speaking skill through interactions that they have with teachers and peers. Furthermore, to study learners’ improvement, there should be a fixed set of participants and the framework for analysis should consider the learners’ strategies in communication.

References


Appendix 1

Transcription System

The transcription system is adapted from Walsh (2011) as follows:

F: -facilitator
A: -attendee
AA: -several attendees at the same time
= -turn continues or one turn follows another without a pause
EXCITED -special emphasis (in all capital letters)
... -pause of one second or less marked by three periods
(4) -silence; length given in seconds
[F shows pictures on his phone] -editor’s comments (in square brackets in bold type)
(4) -attendee’s response in Thai (in italic type)
(how do you say ..?) -a translation of the attendee’s response from Thai (in parentheses in italic type)
An investigation of English language learning motivation between English-majored students and non-English majored students at Rajamangala University of Technology Isan, Surin Campus

Suparat Walakanon*

ABSTRACT
The purpose of the present study was threefold, firstly, to examine types of motivation students had in learning English language; secondly, to investigate whether there were any differences in language learning motivation between students English-majored students and accounting students; and finally, to investigate the relationship between students’ learning achievement and their motivation in learning English. The participants of the present study consisted of 40 students majoring in English and 40 students majoring in accounting, all studying in their fourth year, at Rajamangla University of Technology Isan, Surin Campus. A questionnaire adapted from Gardner’s (1985) Attitude/Motivation Test Battery (AMTB) was administered to the participants. The results of the study indicated that English-majored and accounting students had a high level of overall language learning motivation with a higher level of extrinsic motivation than intrinsic motivation. Moreover, it was found that both groups of the participants did not differ in terms of types of motivation. Finally, no significant correlation between students’ learning achievement and level of language learning motivation was observed.

Keywords: language learning, extrinsic motivation, intrinsic motivation

Introduction
Motivation in learning a second or foreign language has received research attention over the past two decades (Dornyei, 2001; Sakiroğlu & Dikilitas, 2012), especially in English as a Foreign Language (EFL) settings (Takahashi, 2013). Dornyei and Kormos (2000) postulate that motivation is an influential factor for the success or failure in language learning. It is also a predictor of learning achievement and is one of the determining factors that has an impact on students’ language performance and achievement in classroom (Prapphal, 2001). In the same vein, research studies in language learning motivation have indicated that motivation plays a great role in the success and failure in learning (Gardner, 1985; Dornyei & Otto, 1998; Brown, 2000; Spolsky, 2000; Kitjaroonchai & Kitjaroonchai, 2012).

Similar to most science and technology universities in Thailand, Rajamangala University of Technology Isan, Surin Campus (RMUTI Surin) offers English courses as compulsory and elective subjects to both English-majored students (students in English for International Communication [EIC] Program) and non-English majored students, whose fields of study are not English, for example, accounting, management, hotel and tourism, and students in the fields of science and technology such as fisheries, engineering, and agriculture. Students in all majors are required to complete a minimum of twelve credits

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(four subjects) of compulsory English courses and nine credits of language subjects such as Thai or Chinese to complete their study. In other words, every student must take at least four English subjects and another three language subjects, totally seven language subjects, in their curriculum.

Given that language learning motivation is an essential factor influencing students’ language achievements, it is noteworthy to examine level of language learning motivation and types of motivation of English-majored and non-English majored students who were studying in their third or fourth year in the second semester because the researcher was certain that they had already taken at least four English courses and presumably had some extent of language learning motivation.

It is hopeful that the findings of the study would provide more profound understanding of how learning motivation and their types come into play with language performance of the students. Moreover, it is hoped that the survey could help language teachers find ways to stimulate students’ motivation to learn the language both in classroom and out of classroom.

Literature Review

Motivation has been defined in various ways by different scholars and researchers. For example, Gardner (1985) defines motivation as the extent of effort the individual endeavors in learning the target language due to his/her desire and satisfaction in doing so. In this view, students with high language proficiency but with little or insufficient motivation tend to be unable to achieve their long-term goals and success. Likewise, Dornyei and Otto (1998) view motivation as “the dynamically changing cumulative arousal or internal drive in a person that initiates, directs, coordinates, amplifies, terminates, and evaluates the cognitive and motor processes whereby initials wishes and desires are selected, prioritized, operationalized, and successfully or unsuccessfully acted out” (p. 65). Similarly, Dornyei and Ushioda (2011) postulate that motivation is “the direction and magnitude of human behaviour” which involves the choice of a particular action, the persistence with it, and the effort expended on it.

According to Gardner and Lambert (1972), prominent scholars in the field of motivation study, classify motivation in second language learning into two types: integrative and instrumental motivation.

Integrative motivation refers to a positive attitude towards the community who speak the target language, and a desire to be part of that target language community and culture (Gardner, 1979). Students with integrative motivation learn the language because they have a strong will to socialize with people in the target language group and wish to be members of the group (Saville-Troike, 2006). Instrumental motivation, on the other hand, is a language motivation in which language is learned as a tool or instrument to achieve a goal such as getting good school grades, having a good job, or being accepted in the society. Students with instrumental motivation learn a foreign language because of some clearly perceived utility it might have for the learner (Gardner, et al. 1983). Instrumentally motivated learners tend to be enthusiastic in objective benefits of the language rather than its value. Their efforts in language learning are aimed at getting rewards rather than realizing their true interest in the language.

Related Studies

There have been a large number of studies related to language learning motivation in EFL settings. The first study is a study by Wimolmas (2013) who explored the dominant motivation and problems in their English language learning of undergraduate students at Sirindhorn International Institute of Technology (SIIT), Thammasat University, Rangsit Campus. The data of the survey was collected through a questionnaire
adapted from Gardner’s (1985) Attitudes and Motivation Test Battery with twenty questions on learning motivation. The results showed that the students were slightly more instrumentally motivated to learn English, while writing was reported to be the most prominent problem the students had in learning English. Hence, it could be inferred from this study that instrumental motivation such as learning English in order to be successful in their careers and learning English only for classroom assignments and exams was a significant factor among this group of students learning English.

Similarly, Chairat (2015) conducted a study to identify attitudes and motivation of non-English major students towards learning English as a foreign language of 92 first-year undergraduate students majoring in Public Health within the Faculty of Health and Sports Science at Thaksin University, Phatthalung Campus. The instrument was a 5-point Likert Scale questionnaire adapted from Gardner’s (1985) Attitudes and Motivation Test Battery. The aim of the questionnaire was to investigate four characteristics regarding students’ learning motivation namely, level of student’s interest in learning English, their desire to learn English, their attitudes towards learning English, and their motivation towards learning the language. The findings revealed that non-English majored students was high motivation towards learning English language because of some integrative reasons.

Another similar study was conducted by Choosri and Inthraksa (2011), who investigated factors affecting students’ language learning motivation and relationship between students’ learning achievement and their learning motivation. The participants were 140 second-year vocational certificate students at Hatyai Technical College. The study revealed that instrumental motivation played a dominant role in students’ choice in learning English. Moreover, it was found that there was a significant positive relationship between motivation and students’ language learning achievement.

Nguyen (2015) carried out a survey to examine ways to assist non-English major students of education to be engaged with learning English. The participants were 60 non-English majors in Hanoi Pedagogical University 2 (HPU2) and 60 other students in Hanoi University of Education (HUE). The result indicated that the major reasons of non-English students in learning English were to have wider career opportunities and to improve their international communication skills.

Research Methodology

1. Participants

The participants of the present study were a group of 40 English-majored students and a group of 40 accounting students, who had already taken four compulsory English courses. All of them were in their fourth year in the second semester of academic year 2018.

2. Research instrument

The instrument used for the data collection of the present study was a motivation survey questionnaire adapted from Gardner’s (1985) Attitude Motivation Test Battery (AMBT), consisted twenty 5-point Likert’s scale items (on a scale of 1-5, ranging from strongly disagree =1 to strongly agree = 5) and an open-ended question. The questions were carefully selected from those in Gardner’s AMBT survey and adapted to fit the participants’ context. Of the twenty items of the questionnaire, ten asked about intrinsic motivation and the other ten investigated extrinsic motivation. In order to ensure that the students understand all the questions accurately, the questionnaire was translated in Thai.
3. Data Collection

The questionnaires were distributed to both groups of the students upon permission of their teachers during their normal class time. Then, the participants were explained clearly about the survey and how to administer the questionnaire. The questionnaires were collected upon completion.

4. Data Analysis

The data were analyzed using descriptive statistics such as frequency, mean values, standard deviation. Moreover, an independent-sample t-test was administered to investigate the differences in the mean scores of the two groups of participants. Furthermore, a correlational analysis was employed to investigate the relationship between students’ learning achievement and language learning motivation.

The values of mean scores for level of motivation were interpreted using the criteria shown in Table 1.

<table>
<thead>
<tr>
<th>Mean Range</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.68 – 5.00</td>
<td>High degree of Motivation</td>
</tr>
<tr>
<td>2.34 – 3.67</td>
<td>Moderate degree of Motivation</td>
</tr>
<tr>
<td>1.00 – 2.33</td>
<td>Low degree of Motivation</td>
</tr>
</tbody>
</table>

Results

This section discusses the major findings of the present study which includes students’ general information (gender, age, and GPAs), their levels of motivation (overall, by type, and by majors), and the relation between their academic achievements and language learning motivation.

- Students’ general information

As shown in Table 2, the majority of the participants were female students (87.50 %), aged between 22 -25 years old (81.25%), with grade point averages (GPA) chiefly ranging from 2.50 to 3.49, considered as being moderate to high achievers.
Table 2: Students’ general information

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>10</td>
<td>12.50</td>
</tr>
<tr>
<td>Female</td>
<td>70</td>
<td>87.50</td>
</tr>
<tr>
<td>2. Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-21 years old</td>
<td>15</td>
<td>18.75</td>
</tr>
<tr>
<td>22-25 years old</td>
<td>65</td>
<td>81.25</td>
</tr>
<tr>
<td>3. GPA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.00 - 1.99</td>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td>2.00 - 2.49</td>
<td>12</td>
<td>15.0</td>
</tr>
<tr>
<td>2.50 - 2.99</td>
<td>30</td>
<td>37.5</td>
</tr>
<tr>
<td>3.00 - 3.49</td>
<td>27</td>
<td>33.8</td>
</tr>
<tr>
<td>3.50 - 4.00</td>
<td>10</td>
<td>12.5</td>
</tr>
</tbody>
</table>

- Students’ level of motivation in language learning
  This part presents a discussion of overall level of motivation by type, and by students’ major. As shown in Table 3, the participants have high levels of both integrative and instrumental motivation in language learning with an average of 4.12 and 4.25, respectively. A paired-sample t-test analysis suggests that the students have significant higher level of instrumental motivation than integrative motivation in learning language.

Table 3: Students’ overall level of motivation

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Level of Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrative Motivation</td>
<td>80</td>
<td>4.12</td>
<td>.38</td>
<td>High</td>
</tr>
<tr>
<td>Instrumental Motivation</td>
<td>80</td>
<td>4.25</td>
<td>.41</td>
<td>High</td>
</tr>
</tbody>
</table>

Table 4 suggests that the level of language learning motivation, both extrinsic and intrinsic, of both groups of English-majored and accounting students are high. However, no significant differences in levels of integrative and instrumental motivation between the two groups are observed. In other words, the English majored-students and accounting students have a similar level of both extrinsic and intrinsic motivation in learning English.
Table 4: Students’ level of motivation by students’ majors

<table>
<thead>
<tr>
<th>Type of Motivation</th>
<th>Major</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Level of Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>English</td>
<td>40</td>
<td>4.11</td>
<td>.38</td>
<td>High</td>
</tr>
<tr>
<td>Intrinsic</td>
<td>Accounting</td>
<td>40</td>
<td>4.12</td>
<td>.37</td>
<td>High</td>
</tr>
<tr>
<td>Extrinsic</td>
<td>English</td>
<td>40</td>
<td>4.28</td>
<td>.44</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Accounting</td>
<td>40</td>
<td>4.22</td>
<td>.37</td>
<td>High</td>
</tr>
</tbody>
</table>

- Relation between students’ learning achievement and motivation
  
To investigate whether students’ learning achievement or grade point averages (GPA) has any relation with their language learning motivation, a correlational analysis was performed; the results are shown in Table 5. As it can be seen, there is no significant relationship between students’ GPAs and their levels of motivation. On the other hand, there is a strong relationship ($r = .648$) between the two types of motivation: extrinsic and intrinsic motivation. These findings demonstrate that students’ learning achievements do not reflect their levels of motivation in learning English, while types of motivation are positively interrelated. This means that one type of motivation has a direct effect on the other type of motivation.

Table 5: Correlation between students’ learning achievement and motivation

<table>
<thead>
<tr>
<th>Correlation</th>
<th>GPA</th>
<th>Extrinsic Motivation</th>
<th>Intrinsic Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>.186</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.186</td>
<td>.098</td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Extrinsic Motivation</td>
<td>Pearson Correlation</td>
<td>.186</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.098</td>
<td>.098</td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Intrinsic Motivation</td>
<td>Pearson Correlation</td>
<td>.168</td>
<td>.648**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.137</td>
<td>.137</td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>80</td>
<td>80</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).
Table 6: Highest scored items

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean</th>
<th>S.D</th>
<th>Type of Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q.3 I am interested in reading only English textbooks for my university study, but not other English texts e.g newspapers, magazines.</td>
<td>4.49</td>
<td>0.60</td>
<td>Extrinsic</td>
</tr>
<tr>
<td>Q.4 I am more interested in earning a university degree and a good job than learning English language itself.</td>
<td>4.45</td>
<td>0.61</td>
<td>Extrinsic</td>
</tr>
<tr>
<td>Q.5 Studying English enables me to understand English books, movies, pop music etc.</td>
<td>4.42</td>
<td>0.65</td>
<td>Intrinsic</td>
</tr>
<tr>
<td>Q.17 Studying English enables me to transfer my knowledge to other people e.g giving directions to tourists.</td>
<td>4.37</td>
<td>0.68</td>
<td>Intrinsic</td>
</tr>
<tr>
<td>Q.9 Being proficient in English can lead to more success and achievements in life.</td>
<td>4.34</td>
<td>0.66</td>
<td>Extrinsic</td>
</tr>
</tbody>
</table>

Table 6 illustrates the items that receive the highest mean score comprising three items from extrinsic motivation and two from intrinsic motivation. This can be interpreted that although the students reported being more extrinsically motivated in learning English, they show a stance of having intrinsic motivation in language learning. They think that learning English is essential in helping them understand English textbooks ($\bar{x} = 4.49$), which were very helpful in their study. They also perceive that learning English can help them get a good job ($\bar{x} = 4.45$), and enjoy entertainment media such as songs and movies in English ($\bar{x} = 4.42$). Furthermore, the students view learning English as a tool that enables them to communicate and give explanations to foreigners effectively ($\bar{x} = 4.37$). Finally, they view that learning English would bring success to their lives ($\bar{x} = 4.34$).

Discussion

Based on the major findings of the present study, both the English-majored students and accounting students at RMUTI Surin had a high level of instrumental and integrative motivation in learning English. However, they reported being more instrumentally motivated to learn the language. These results are congruent with the study of Wimolmas (2014), whose survey indicated that had strong extrinsic motivation to learn English. Likewise, these findings were in line with the work of Chairat (2015) who investigated the attitudes and motivation of non-English major students towards learning English as a Foreign Language at Thaksin University, Phatthalung Campus. The study found that the students had high level of both extrinsic and intrinsic motivation and positive attitudes in learning English. Regarding the results of the present study, it can be implied that the students were aware of the importance of English to their study, future career, and daily life. English is not only necessary for them in classroom but also other activities outside classroom such as social networking where they have opportunities to meet people from other parts of the world and communicate with them through English.
Moreover, the study also found that the students’ integrative and instrumental motivation in language learning had positive correction with each other. This could mean that if students have higher instrumental motivation in learning, they tend to be more integratively motivated in studying the language too. This supports the study by Sharrock (2013) and Changlek and Palanukulwong (2015) who investigated the relationship between learning motivation and various language achievements. They obtained similar findings which suggested that learners’ intrinsic motivation had positive effects on extrinsic motivation, and vice versa. In the present study, however, no relationship between students’ learning achievements and learning motivation was observed. These outcomes were partially similar to the study of Choosri and Intharaksa (2011), which showed that students’ learning achievement was positively related to their intrinsic motivation, but not to their extrinsic motivation in learning English. The findings are contrastive to the previous studies of Kitticharoonchai and Kitticharoonchai (2012), Dornyei (2001), Kyriacou and Zhu (2008), and Wang (2008), who discovered that learning achievement contributed a positive relation with extrinsic and intrinsic language learning motivation. The findings of this study can be assumed that students’ learning grades do not have significant impact on their motivation to learn English. Students with low GPAs may have higher level of motivation than those with high GPAs, and the other way round. This can be interpreted as a positive sign in that every student can be motivated to learn English whether they are high achievers or marginal learners.

Conclusion

In summary, this study aimed to investigate types of motivation that English-majored and non-English majored students at RMUTI Surin Campus had in learning English, and the relation between students’ learning achievement and language learning motivation. The findings revealed that both English-majored and non-English majored students had high level of extrinsic and intrinsic motivation in learning English. A further analysis showed that they had higher extrinsic motivation than intrinsic motivation to learn English. Moreover, both groups of students had a similar level of motivation to learn English. Furthermore, A correlational analysis suggested that students’ learning achievements were not related to their learning motivation, while a strong positive correlation between extrinsic and intrinsic motivation were observed. Finally, the primary reasons to learn English of the students was they believed that the abilities to read English was necessary for their study in the university and that English was essential in widening their opportunities to good jobs or careers.

This study has shown that students were aware of the importance of English language abilities, in spite of their primary aims on extrinsic factors such as having high learning grades and getting a good job. In terms of language instruction, it is important that lecturers maintain students’ learning motivation, both extrinsic type or intrinsic type, to be high as they have a strong relation to each other. This means that an increase in one type of language learning motivation contributes to an increase in the other. Similarly, a decrease in either type of motivation may cause negative effects on the other. Therefore, keeping track on students’ motivation occasionally throughout the course is recommended.
References


Songs and Society: A Study of Social Critics in Iwan Fals’ Protest Songs

Rizki Theodorus Johan*

ABSTRACT

Music has become a political tool to convey one’s political purpose. There is a long and significant history and connection between music and politics, particularly political expression in music. In this article, I am going to analyze how songs are used as social critics, by analyzing Iwan Fals’ protest songs to see how through his songs, especially his lyrics, Iwan Fals has conveyed his ideas and critics. In doing my study, firstly I will choose six of Iwan Fals’ songs from the 70’s and 80’s era, they are Demokrasi Nasi, Anak Cendana (Pola Hidup Sederhana), Bongkar, Omar Bakrie, Wakil Rakyat, and Galang Rambu Anarki, to be analyzed using Dard Neuman, Theodor W. Ardono, R. Serge Denisoff’s ideas to obtain the meanings and purpose or ideology of Iwan Fals’ songs. Besides that, I will also collect some historical data regarding the condition at the time the songs were released. Most of Iwan Fals songs tell about the condition in Indonesia during the New Regime Era. Fals’ songs lyrics show the injustice and anxiety of the society in the time of New Regime era. Iwan Fals’ songs can be deemed to convey a social critic against the New Regime era. From the way of he convey his critics, his songs can be seen as rhetorical and magnetic protest songs. Through ideology of his songs, his songs can be considered as an agent of change, an explicit commentary on power, and the mirror of political, cultural, and historical change in Indonesia.

Keywords: Music and Politics, Protest Songs, Iwan Fals, the New Regime.

Introduction

Music, as a part of arts and culture, has become an important instrument that is used to convey one’s ideas, hopes, critiques, and etc. Music has opened a great opportunity for everybody to open and express their emotion, even use music as a political tool. There is a long and significant history and connection between music and politics, particularly political expression in music. Political songs can consist of protest songs, campaign songs, and songs with social comment, songs of the Labor movement and traditional patriotic songs. Political songs can come from different kinds of music genre such as Classical, Popular, Jazz, Spiritual, Rock, Traditional, and etc. It is a common believe that politics and songs cannot be separate from each other, as stated by James Connolly, "No political movement is complete without its popular poetical expression. If such a movement has caught hold of the imagination of the people, they will seek a vent in song for the aspirations, the fears and the hopes, the loves and the hatreds engendered by their struggles."

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As a part of political songs, protest songs are associated with social movement, such as civil rights movement, the anti-war movement, the labor movement, the feminist movement, environmentalism, and etc. Protest song’s content can be directly or indirectly criticized something and gather people to do a movement. It can discuss opposition to injustice or asking people join people hand in hand to save environment. There are also some of the protest songs are using abstract concept which demands its listener to connect the words and the underlying meaning, or with the historical, cultural, and political background of the songs, to understand the purpose or ideology of the songs.

In Indonesia, there some musicians whose songs can be considered as protest songs, such as Koes Plus, Harry Roesli, and Iwan Fals. In this paper, I chose Iwan Fals and his songs; Fals can be considered one of the best Indonesian protest singers. I am going to analyze how songs are used as social critiques. By analyzing Iwan Fals’ songs this paper is aimed at seeing how through his songs, especially his lyrics, Iwan Fals has conveyed his ideas and critiques.

In doing my study, firstly I will select six songs from Iwan Fals’s albums from the 70’s and 80’s era. They are Demokrasi Nasi, Anak Cendana (Pola Hudup Sederhana), Bongkar, Omar Bakrie, Wakil Rakyat, and Galang Rambu Anarki, to be analyzed using Dard Neuman, Theodor W. Ardon, R. Serge Denisoff’s ideas to obtain the meanings and purpose or ideology of Iwan Fals’ songs. Besides that, I will also collect some historical data regarding the condition at the time the songs were released. This will help me find better understanding about the ideology behind his songs. Through this study, I will show how through his songs, Fals captures the depressing and unjust reality that happened during the New Regime Era (er ORBA). Most of his songs are using simple words (lyrics), which some of them are telling a comparison between the life of a person from a lower class and person from high class society in Indonesia, to criticize the condition in Indonesia during that period.

Iwan Fals and his songs

Iwan Fals was born in Jakarta on the 3rd September 1961. In 1981, he signed up a contract with the Musica Studio. Since then, he has produced more than 30 albums. Some people consider him as Indonesian Bob Dylan because he is known for his daring critics which he conveys through his songs. His songs, which can be considered as protest songs, tell about injustices in Indonesia and critics against Soeharto and the New Regime era.

On April 1984, Iwan Fals was caught and interrogated by the police after he sang his songs which are considered criticizing the government and Soeharto, the leader of the New Order era. For the authority or the government, his songs were considered to destabilize the condition, but for the common people his songs represents the Indonesian people living condition at that time and also voice their anxiety, fear, complaint, distress, suffering, and concern. He “has always been the voice of Indonesian’s grassroots movement since the New Order era.” He is always remembered as the voice of the powerless. Some of his famous songs are Bento, Omar Bakrie, Pola Sederhana, Wakil Rakyat, Mbak Tini, Demokrasi Nasi and Sarjana. His songs were considered dangerous by the government because it is believed can destabilize the politic conditions in Indonesia at that time. One of his songs entitled Wakil Rakyat (People Representatives) was banned and cannot be played in the radio or performed in television. In 2002, Time Magazine honored him a title as Asian’s Greatest Living Heroes, for his contribution in voicing the people’s rights.
According to Dard Neuman in his paper entitled *Music, Politics, and Protest*, he believes that music is intersecting with politics. Neuman believes that there is a strong and significant relationship between music, politics and protest. He describes their intersection into four domains; (1) music as an agent of change, (2) music as an implicit or explicit commentary on power, (3) music and the politics of spirituality, and (4) music as a mirror of historical, political and cultural change.

As an agent of change, Neuman explains that music is used as a tool to propagate and generate a mass movement. He gives example the used of music in three movements in the late 19th century and early 20th in America. Music replaces the use of pamphlet, which is considered less effective compare to Music. It is believed that song can be memorized, repeated and disseminated. More over as stated by Joe Hill and quoted by Neuman “The power of song will exalt the spirit of rebellion.”

As an implicit or explicit commentary on power, Neuman clarifies that songs can be used as a statement to comment on power or authority. Lawrence Levine, as quoted by Neuman, introduces a technique called “techniques of indirection”. By using the technique, songs can be perceived of having two different functions, on one hand it can be used to communicate or show conformity to dominant society, while on the other hand it is used to communicate defiance to one another, or in the other words songs provide means for double-talk and subversion. Here music is seen as an ideal vehicle of resistance.

In connection between music and the politics of spirituality, Neuman states that music facilitates the path to the divine. Here Music is used as a device to bridge people and God or the divine, no matter where they come from, slave or aristocrat. It is believed that music both propagates and uplifts people on the margins of society. As a mirror of historical, political and cultural change, music is believed to move through different historical eras, political and cultural change. Music becomes a sign of one’s political, historical and cultural changing, such as the birth of Jazz and soul music which signifies certain movement and change in the American society.

While R. Serge Denisoff in his book entitled *Sing a Song of Social Significance*, discusses about protest songs. He divides protest songs based on their function, persuasion or propaganda. He subdivided protest songs as either “magnetic” or “rhetorical”. “Magnetic” protest songs had a clear political function a goal to attract people to act actively and join the movement. Besides that, promoting group solidarity and commitment by identifying problems and prescribing clear solution, for example join a union or go on strike. While “Rhetorical” protest songs are described by individual resentment and designed to change political opinion by offering a straightforward political message.

Theodor W. Ardono, who was one of the most important philosopher and social critics in Germany after WW II, had different opinion about music. He saw music especially popular song as a tool that is used by capitalism to manipulate people. He argued that capitalism fed people with the product of a ‘culture industry’-to opposite of ‘true’ art- to keep them passively satisfied and politically apathetic (www.theory.org.uk), according to Ardono, popular media and music products are characterized by standardization (they are basically formulaic and similar) and pseudo-individualization (incidental differences make them seems distinctive, but they are not). Product of the Culture industry may be emotional or apparently moving, but Adorno sees this as cathartic—we might seek some comfort in a sad film or song, have a bit of cry, and then feel restored again. Popular culture made people docile and content, no matter how terrible their economic circumstances.

Analysis of the Songs
The first song that I will analyse is *Demokrasi Nasi* (Rice Democracy). This song is released on the year of 1978.

Ada lagi sebuah perkara
Tentang nyawa manusia
Kisah ini memang sudah lama
Tapi benar terjadi
Anak seorang menteri
Membuat onar lagi
Menembak mati
Kok nigak ada sangsi
Tentu tak sesuai dengan undang-undang
Di negeri ini yang katanya demokrasi
Lain lagi dengan orang biasa
Bila mereka curiga
Langsung masuk penjara
Tanpa bukti nyata.
Menapai?
Menapai?

Undang-undang tampaknya sakit perut
Tuan tolong panggilkan dokter ahli
Untuk Indonesia yang sisa hidupnya
Mungkin terkena wabah kolera

Undang-undang tampaknya sedang sakit
Tuan tolong panggilkan dokter ahli
Untuk Indonesia
Mungkin terkena wabah salesma

It is clearly seen that through this song Fals wants to criticize democracy that is being applied in Indonesia. Fals shows us an irony that Indonesia as a democracy country, which supports equality in law, but on its application the law is being cheated and manipulated by its own officials whom I assume are the police officers and the official of the justice department, who have lost their integrity. Fals questions the Indonesian justice system, why punishment only being applied on the common people and the law is in the favor of someone who has position and wealth. In the last two stanzas of the song he even states that the law badly needs a help from a specialist to be cured because of its acute and spreading disease.

Through this song, I believe Iwan Fals wants to invite Indonesian people to examine the real condition of their country especially in the term of Justice. The law cannot punish someone because of his or her connection with the government or the one who holds the power, but it is used to practice one’s power against others who are weaker and do not hold any power. I can see that Fals use his songs as a
media of changing Indonesian people’s perception in seeing their condition. He uses rhetorical way to show his resentment on the condition.

Another Fals’ songs which conveys the same critics to the government is Surat Buat Wakil Rakyat (A Letter for People Representatives), this song was released in 1987.

Fals uses this song to criticize people representatives at the DPR (Indonesian Legislative Assembly). Firstly, he tries to emphasize that people representatives are the chosen one and no questions that they are the Indonesian intellectuals that have the quality and ability to represent the Indonesian people in the DPR. But next Fals seems to emphasize that people representatives are not closed friends or family. This statement actually questions the reason of they are being chosen. It is also a direct critic to the political parties which at that time chose their representatives that are going to seat in the DPR based on friendship and family relationship, so it is clear that their decision is mostly based on the importance of the party or group of people, not the importance of Indonesian people.
The next interesting line is when Fals says that how Indonesian people entrust their and the country’s future in the hand of the people representatives. The people ask that their representatives to be brave and speak up the truth, because it is their job as the people representatives to voice Indonesian people’s importance, not simply be quite or agree with things which will bring disadvantages to the Indonesian people. In the last stanza which is repeated four times, Fals wants to put emphasis on how the people representatives should act. They should know and care about the people that they represent. Do not fall asleep during the session which discuss about the people’s welfare or only know to say yes without thinking the people that they represent. Like the first song being discussed, I see that Fals rhetorically tries to open the Indonesian People’s minds to the condition, by criticizing the people representatives in the DPR. He does not ask his listener to act something but he wants to show the reality and change the listeners’ point of view.

In the next song, Anak Cendana (Pola Hidup Sederhana) (Cendana’s Child (Pattern of Living Modesty)), Fals shows his critic against the leader of New Regime, Soeharto and his family, especially his children. He directly points out the hypocrisy of the New Regime leader how asks the people to live in modesty, while the Soeharto’s family has dominated all the natural resources in Indonesia and live in prosperity and tens to show off their wealth. Again, Fals wants to open Indonesian people’s minds about the injustice which is done by the government, in this case is the president and his family.

Angrek-angrek subur
Dalam taman yang berpañar peluru
Cengkeh, kopi, dan teh
Serta banyak pabrik di pelosok
negeri ini kau punya
Tak kan habis harta tuan tuk tujuh turunan
Your wealth

Pola sederhana itu yang kau minta
Bagi kami hidup berdagang
Bagi kami hidup bertani
Bagi pegawai negeri
Bagi kami gelandang keki
Bagi kami pelacur kelas tinggi
Serta bagi kami yang ABRI
Pola sederhana kan kami lakukan
Asal tuan sudah melakukan
Asal tuan sudah melakukan

The next two songs, Umar Bakri (1981) and Galang Rambu Anarki (1982) discuss about the Indonesian people’s condition under the New Regime era. How they are suffered from the government policy.

Umar Bakri, Umar Bakri, pegawai negeri
Umar Bakri, Umar Bakri, a government official
Umar Bakri, Umar Bakri, 40 tahun mengabdi
Umar Bakri, Umar Bakri, 40 years serving
In this song, Fals shows the listener that it will be extremely difficult to have at least a comfortable or even rich life if you chose to be a devout and honest person in Indonesia. Fals uses an example of Umar Bakri, a devout and honest teacher who has worked for 40 years. Despite of his hard work of teaching and producing intellectuals in the country, the government does not give any appreciation to him. Even his salary as a teacher is being castrated. This song is not only a story of Umar Bakri, but it is symbol of injustice in Indonesia that experienced by other Indonesians. In other words, Fals believes that in Indonesia, honesty will not bring you anywhere, it only brings bitterness. The next song which convey similar message is Galang Rambu Anarki, this song is released in 1982.

This song says about how the government policy to drawn the subsidy has affected the prices of other goods. The prices are soaring high and it makes the people cannot buy their primary needs, such as milk for the babies. Fals criticizes the unwise government’s policy. Here Fals uses his own experience to capture others’ anxiety and distress about the uncertain condition. One interesting fact is how Fals ends the song that he tells his son to grow up fast and gives his approval to him to fight the injustice. From the two songs, it can be seen that Fals captures the condition surround him. He tells the listener of what happen in the country because of the government’s policy which only brings disadvantages to the people. He voices
the condition and the future of hundreds or thousands of others Umar Bakri and Galang Rambu Anarki in this country. In Galang Rambu Anarki, Fals starts to ask its listener to act. It is seen from the way he asks and blesses his son to take an action, which I assume an active act, against the injustice.

The last song is Bongkar, which is released in 1987. This song is considered as one of the best 150 Indonesian songs according to Rolling Stone Indonesia magazine.

Kalo cinta sudah dibuang if love has been thrown away
Jangan harap keadilan akan datang don’t hope justice will come
Kesedihan hanya tontoton sadness is merely a show
Bagi mereka yang diperbudak jabatan for those who are enslaved by their position
O, o, ya o....ya o.... ya bongkar O, o, yes o....yes o....yes destroy
O, o, ya o....ya o.... ya bongkar O, o, yes o....yes o....yes destroy

Sabar, sabar, sabar dan tunggu patient, patient, patient and wait
Itu jawaban yang kami terima that’s the answer we get
Ternyata kita harus ke jalan apparently we have to march on the street
Robohkan setan yang berdiri bring down the evil who stands with his legs open wide
mengangkang

In this song, Fals believes that it is useless to hope for someone who is enslaved by one’s position and does not have heart, to change. He or she sees justice is only a dream and people’s suffering is only a show. Fals’s interesting ideas can be found when Fals uses the word “destroy” and ask the people to “march on the street” and “bring down the evil…” Through this song, I believe that Fals invites his listener to do a real action or being active agent to change their condition.

Conclusion

Through the study above, it can be perceived that Iwan Fals’ songs can be considered as protest songs. Fals tries to criticize the injustice with are done or caused by the Government or the authority. Based on Denisoff’s ideas it can be seen that some of his songs can be categorized as “rhetorical” protest songs. At the beginning, Fals rhetorically tries to change Indonesian people’s perception about their condition and injustice that they have to suffer because of the government. Later on, “Bongkar”, it seems that he is tired of hoping that the authority will realize their wrong doings and do something to fix it. At the end, he asks his listener to do something and be an active agent against the government. Here it can be said that Fals’s song also can be considered as “magnetic” protest songs.

By means of Neuman’s ideas, His songs can be considered as an agent of change, whereas it can be found that from his songs, Indonesian people change their perspective about their condition and the government. His songs are also giving a lot of comments about the injustice caused by the government, in this case as someone who holds the power. Indonesian people realized that they have suffered a lot because of the government. Fals’ songs are also deemed to mark and signify the Indonesian’s grassroots movement since the New Order era. Indonesian people cannot separate their memories of the New Regime era with the Iwan Fals’ protest songs.
In connection with Ardono’s ideas, Fals’s songs cannot be considered as a capitalism cultural product. His songs have a purpose to open people’s minds about their condition. His songs are different from his contemporaries’ song writers and singers such as A. Riyanto and Rinto Harahap who at that time were popular with their love songs. Love seems becomes standardization for many song writers and singers at that time. His songs which convey social critics can be considered as deviant to the trend at that time.

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Students’ perception on the role of the teacher in Project-Based Learning: a case study in Vietnam

Le Tan Cuong

ABSTRACT

Project-Based Learning (PBL) has for long been an effective approach in education. It is widely incorporated in various educational contexts. While great emphasis has been put on its positive influences on learning, teachers and students’ perspectives, and challenges in implementing, interest in how the teacher’s role in such an approach is perceived by students remains generally limited. The current study, therefore, is an effort to fill the gap by placing its focus on students’ perception on the role of the teacher in Project-Based Learning in a Vietnamese context. Participants in the study are 174 freshmen coming from 4 separated classes in the same course named Presentation skills in two different school years in Faculty of English Linguistics and Literature, University of Social Sciences and Humanities - Vietnam National University, HCMC. Data is systematically collected from a web-based questionnaire and students’ end-of-course reports in 2018 and early 2019. The results of the study show that the majority of the students highly appreciate the teacher’s orientation, mentoring and ongoing support in PBL. Suggestions from the participants in the study are also noted as good references for the teacher’s upcoming teaching strategies. The study contributes to the current understanding of PBL in education and provides solid support for further exploitation of other aspects of the approach in Asian contexts.

Keywords: Project-Based Learning, Students’ perception, Presentation skills

Introduction

Project-Based Learning (PBL) has been common in education for a long time and obtained its prominent contribution to the field. Thomas (2000) claims that PBL is effective in diverse contexts. The approach has also been part of a great number of teaching strategies in Vietnamese context. Most research come to an agreement that PBL not only positively influences students’ academic performance but also help them enhance 21st century skills. However, recent research seems to have prioritized positive influences on learning, teachers and students’ perspectives, and challenges in implementing it rather than students’ opinions of how students reflect on the role of the teacher in such an approach. The current study, therefore, aims to fill the gap by exploring students’ perception on the role of the teacher in Project-Based Learning in a Vietnamese context which is at Faculty of English Linguistics and Literature - University of Social Sciences and Humanities, Vietnam National University, HCMC (EF-USSH, VNU HCM). The paper firstly reviews the implementation in PBL in some countries in general and in Vietnam in particular. Then, the author reports on how PBL is deployed in the course.
of Presentation skills in EF-USSH, VNU HCM. Discussions on the effectiveness of PBL and the role of the teacher in PBL in the investigated context come as the next part of the paper. Recommendations are put forward in the last part of the paper as an effort to provide faculty deans and teachers with ideas on how to effectively apply and better PBL in their teaching contexts. Using data from a web-based questionnaire and students’ end-of-course reports in two school years of 2018 and 2019, the study confirms the feasibility and efficiency of PBL in a Vietnamese context. Also, the study highlights students’ positive perception on the role of the teacher in orienting, mentoring and supporting in PBL in the investigated context. The study hopefully adds to understanding PBL and its practice of applying the approach in education, especially in Asian contexts.

Literature review

a. Project-Based Learning and its influences in education

Project-Based Learning (PBL) is known as a learning method based on constructivism (Hmelo-Silver, 2004). The approach has its root back to John Dewy’s work which appeared more than a hundred year ago (Krajick & Blumenfeld, 2006). There are a number of definitions of PBL. Holm (2011) defines PBL as student-centred instruction that occurs over an extended time period, during which students select, plan, investigate and produce a product, presentation or performance answering a real-world question or responding to an authentic challenge. Felipe et al. (2016) shares the belief that PBL is a well-suited approach actively engaging students with real-world problems and challenges in order to acquire deeper understand. In addition, Garcia (2016) states that Project-based learning is a response to students’ lack of contextualization and oversimplification and excessive abstraction of learning in schools. Amamou & Cheniti-Belcadhi (2018) show their agreement to Garcia’s statement in their recent work that PBL allows learners to be involved in the analysis of a given project and the search for possible contextualized learning. They consider the approach as a way to fully engage students in the construction of their knowledge by interacting with their peers and their environment. Clearly, PBL is not merely a supplementary activity to boost students’ learning, but also a fundamental part of the curriculum and it involves the development of skills (Bell, 2010). The above definitions seem different to some extent, but most of them clearly come to an agreement that PBL provides students with better chances to get involved in real-life situations and actively apply what they learn from school.

Since it was first introduced in the field of education, PBL has proven its importance in various aspects of students’ learning process. Firstly, PBL helps students develop necessary learning skills. According to Tally (2015), PBL helps students develop a variety of valuable 21st century competencies and the teachers in PBL are able to set students up for success by helping them build a solid foundation for these skills through the use of scaffolds. Musa et al., (2011) in a study conclude that Project -Based Learning has successfully exposed students to various skills such as team-working, managing conflicts, decision making, and communication skills. Similarly, Essien (2018) reports that PBL improves students’ critical thinking ability, independent study skill, personal and social responsibility, and strong communication skills. For Simpson (2011), PBL enhances students’ learning skills (teamwork, higher-order thinking and presentation skills) together with self-confidence. On the other hand, Pinzon (2014) states that Project Based Learning contributes to enhance not only students’ motivation to learn English, but also it promotes individual and
social values to improve the coexistence. Secondly, PBL is the foundation for students’ language development. Essien (2018) considers Project-Based Learning as an effective teaching methodology to enhance students' language ability and provide them the opportunity to learn with the same approach they will use in their future careers. PBL can also help encourage learners to use language skills and support learners’ confidence in using English because the students use these skills to acquire, analyze, and synthesize information as they worked on their project (Poonpon, 2017). Besides, Wahyudin (2016) in the recent study carried out in one of higher education institutions in Bandar Lampung, Indonesia reports that there is a notable positive effect obtained from the use of PBL during the learning process and recommends that practitioners apply PBL as an alternative way to teach ESP class, especially at the undergraduate level because PBL contributes to the increase of students’ L2 oral performance, especially in terms of comprehension and fluency. Miller et al., (2012) reports that students in their study improve general English language skills by completing the project with good results as followed: oral skills, including presentation skills (73%) and pronunciation (67%), in grammar (43%), reading (44%), writing (44%) and listening skills (51%). Marwan (2015) reveals that students could experience a more interesting and meaningful learning in a PBL English class and were also becoming highly motivated to use English more intensively while exposed to this teaching approach. Habók & Nagy (2016) the benefits of PBL were observed in the development of cognitive and metacognitive strategies and the increase of motivation, which resulted in an increase in English proficiency. Thirdly, PBL provides students with the chances to apply theory into practice and explore the outside world. Kean et al., (2014) agrees to this perspective that the dynamic approach provides an all-round enriching education where students are inspired to explore, investigate, consider alternatives, understand their world and apply what they learn to real-life experiences. Students, therefore, thrive on the greater flexibility of project learning.

In such an effective approach, the teacher is the determinant of success. As the focus of PBL is student-centered, the teacher’s role is no longer as dominant as it was, but the role of a guide, adviser, motivator, facilitator and evaluator (Jalinus, et al., 2017). In a case study aimed at exploring students’ and teachers’ perceptions of a project-led education course carried out in a Portuguese university, the findings reveal that a clear recognition of the benefits of the approach to both the teaching staff as well as the students (Lima et al., 2007).

As PBL has been widely acknowledged as an effective approach to enhance students’ learning skills, foreign language and application of theory into practice, research on PBL in a Vietnamese is very promising.

a. Project-Based Learning in Vietnam

There have been a considerable number of research in Vietnam investigating the effectiveness of PBL. Van Lam (2011) insists that PBL is a beneficial approach to be applied at university in Vietnam and should be widely applied at university where students need to enhance necessary authentic knowledge and skills for their life and work. After that, Diem (2012) adds to the literature of PBL in the country in her study among second-year students of English working in groups as news editors to produce news and comes up with the conclusion that changes were found not only language competence and attitude, but also in some important soft skills. Ngo (2014) reports the reality in Vietnam that unlike English as a second language context, the English in this country is learned as a foreign language so most Vietnamese learners have few opportunities to use English in their daily life. Therefore, he strongly believes PBL is very suitable for this area subject for that English is used as a work means. Felipe, et al. (2016) in a study at RMIT Vietnam conclude that students do benefit from project-oriented courses and activities, and suggest that Vietnamese
students are able to integrate its principles effectively in learning. Together with this, Na (2017) in an investigation among 30 students and 3 instructors in an English for Business course in Vietnam reveals positive effects on language, soft skills, and professional development. The current evidence provides a brief glance on the possibility of applying PBL in Vietnamese context.

**Purpose of study**

The purpose of this study is to investigate students’ perception on the role of the teacher in Project-Based Learning in a Vietnamese context. Using the data collected a web-based questionnaire and students’ end-of-course reports in 2018 and 2019, the author seeks answers for the two following questions:

- In what ways does Project-Based Learning help enhance students’ performance in a course of presentation skills in a Vietnamese context?
- How do students in the course think of the role of the teacher in Project-Based Learning?

**Research methodology**

**a. Population and sampling**

The research setting in the study is at Faculty of English Linguistics and Literature- University of Social Sciences and Humanities, Vietnam National University, HCMC. At a national-level, the university has more than 16,000 students of 27 majors. Faculty of English Linguistics and Literature which is training more than 3000 students is the biggest unit in the entire university. The participants in the study are 174 English-major students from 4 different classes. The number includes 89 students in two classes in 2018 and 90 students in two ones in 2019. They all take part in the same course entitled Presentation skills which is in 2nd semester in their curriculum. The course is designed to prepare students for success in typical public speaking situations and provide them with practical skills of public speaking, fundamental principles of organization, research and delivery that are needed for effective speeches. After the course, students are expected to master techniques in effectively preparing, organizing, and delivering different types of speeches in both academic and other settings, techniques of oral presentation and persuasion, the use of visual aids (pictures, charts, graphs, power point) to enhance speaker presentations and cultural conventions and the use of verbal and non-verbal messages in public speeches.
b. Procedure of the course and students’ projects

In the 12-week course of Presentation skills in the study, students are expected to go through the procedure in Table 1.

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<tr>
<th>Week</th>
<th>Module</th>
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<td>Course introduction and project guidelines</td>
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<td>Planning your presentation</td>
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<td>3</td>
<td>Organizing and outlining</td>
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<td>4</td>
<td>Using language, projecting your voice and body language</td>
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<td>5</td>
<td>Using visual aids</td>
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<td>6</td>
<td>Creating PowerPoint slides and script writing</td>
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<td></td>
<td>Mid-term presentation (Individual)</td>
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<td>7</td>
<td>Managing the environment</td>
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<td>8</td>
<td>Consultation</td>
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<td>9</td>
<td>Trouble shooting</td>
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<td>Group presentation (Project based)</td>
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<td>Q &amp; A handling</td>
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<td>Final presentations (Individual)</td>
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</table>

Table 1. Procedure of the course and students’ projects

This is a three credits course and students are required to have completed all the four skills courses. The three main materials used in the course are as follows:


In term of the project, students take over a 4-week mission from week 4-7 in the course procedure. Products of the projects are a 10-minute group presentation, a project report and clips of the interviews. Details could be found below:

Project description

- Work in groups of 3-5 students
- Choose a favorite topic relevant to the course of Presentation skills
- Design a questionnaire of no more than 10 questions related to one topic which will be the one students make a 10-minute group presentation
c. Instrumentation
A web-based questionnaire and students’ end-of-course reports are the sources for data used in the study. The questionnaire which is sent to the students via google form in their last week of the course includes 25 questions investigating students’ self evaluation before and after the course, which quantitatively provide the author with valuable evidence of how students make progress after taking part in PBL in the course. On the other hand, students’ end-of-course helps indicate students’ achievement in a quantitative way. The reports are available one week after the course. The two sources of data are to some extent generalize students’ improvement thanks to the application of PBL in the course.

d. Data collection and analysis
Based on data collected using the questionnaire and students’ end-of-course reports, PBL is found to make great influences on students’ performance during the course of Presentation skills in Vietnamese context. Before the course of Presentation skills with PBL, only 32.8% students (in 2018) and 31.9 % (in 2019) have motivation in learning while the numbers in the same aspect exceeds 82.7% (in 2019) and 87.5 % (in 2019). Also, students’ confidenceshow a considerable jump from 32.7% to 65.4% in 2018 and 30.6% to 66.7% in 2019.

How would you rate your confidence in making a public speech after taking the course?

Table 2. Students’ confidence in the course in 2019
Besides, great improvement is noted from 36.4% to 83.7% in 2018 and 37.6% to 83.3% in 2019 in students’ team-working skills. Next, presentation skills improve impressively from 20% to 78.2% in 2018, and 22.2% to 73.6% in 2019. This perfectly meets the outcomes of such a course.

Table 3. Students’ presentation skills in 2019
Taking the data in table 4 as an illustration, students’ learning satisfaction reaches in an impressive level as roughly 75% participants of the study are happy with the teacher’s performance in the course.

Table 4. Students’ learning satisfaction in the course in 2019

Students’ perception on the teacher’s orientation is also worth discussing as 90.3% of the participants appreciate the values of the teacher’s orientation activities during the course.

Table 5. Students’ perception on the teacher’s orientation in the course in 2019

In term of the teacher’s mentoring, participants rate 40.3% for helpful and 56.9% for extremely helpful, which could partly help explain the students’ great improvement in the course.

Table 6. Students’ perception on the teacher’s mentoring in the course in 2019
Another aspect that contributes to the success of PBL in this context is the teacher’s ongoing support. For sure, the students face a number of challenges during the process of PBL, the teacher’s ongoing support plays an indispensable role in leading the students to the right track. The number of 90,3% participants acknowledges the teacher’s support is part of the students’ advantages in the course.

Table 7. Students’ perception on the teacher’s ongoing support in the course in 2019

Discussion
Simpson (2011) states that PBL requires a gradual shift in teaching methodology designed to suit the background of both the teacher and learners and the adjustments will help enhance the effectiveness in the application and implementation of PBL in a foreign language classroom. In Vietnamese context, the teacher makes great efforts to fill the gap and lead the students to a better zone. The evidence found the study indicates that PBL shows its positive influences in enhancing students’ presentation skills in the investigated context. The success of the students is possible thanks the teacher’s orientation, mentoring and ongoing support throughout the process of PBL in the course. Students in the study, as noted in the questionnaire, highly appreciate the great contribution of the teacher in preparing them for Project-Based Learning in the course.

Conclusion
The findings in the current study are consistent with previous research that acknowledges the great significance of PBL in education in general and in language learning in particular. In the investigated context, PBL helps improve students academic performance as well as important skills that they may need in their future career path. The added value can be found in the study is students’ positive perception on the role of the teacher in PBL. The students, as can be found in their responses in the questionnaire, highly value the teacher’s orientation, mentoring and ongoing support during the process of carrying out PBL in the course. Learning satisfaction is also noted in students’ feedback in the study, which is a big plus of the approach when it is implemented in the context. Though there are still a number of challenges to incorporating PBL in a Vietnamese context, the approach is a possible strategy to innovate teaching and learning. Further investigation on students’ perception on the role of the teacher in PBL in other contexts may help deepen understanding the approach and put forward an effective framework to utilize it in various teaching contexts.

References


POSTER PRESENTATION
Marketing Mix factors influencing the Purchasing Decision of Smart Phone: Case study of the People in Municipality Buriram

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Nattharad Khembuppha***
Pongsutham Jimanung****
Thananan Phongharuean*****
Rapheephan Phonginwong******

ABSTRACT

The objective of this research is to influence the marketing mix factors affecting the purchase of smart phones of people in Buriram Municipality. The marketing mix factors were the product, price and marketing promotion. This research is a quantitative research. Random sampling of accidental groups of 369 people who are people in Buriram Municipality. The tools used in the research were questionnaires. The analysis of data by descriptive statistics Average percentage Correlation analysis of variables Multiple regression analysis The study found that the price factor positively affected the decision to purchasing a smartphone. The statistical significance 0.01, product factors and marketing promotion factors positively affecting the purchase of smartphones, respectively.

Keywords: Product Factor, Price Factor, Marketing promotion factor, Purchasing decision of smart phones

Introduction

John Naisbitt wrote a book on Megatrends 2000, which discusses the new social change trends that Information technology will cause the distribution of information quickly. The information has a distribution in all directions have a quick response system including having two-way communication that is similar to having a conversation near each other. In addition, the modernization of communication is beneficial to the organization level group and individual level. Especially, computer and communication systems play a greater role. The using of networks such as the internet linking various functions, creating new words that "Cyberspace" has implemented various activities in cyberspace such as talking about buying products and services. The working through a computer network causing many virtual conditions, such as virtual libraries virtual classroom and virtual workplace. However, the ability of the computer to

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be considered as a type of information technology has developed more advanced until today. Moreover, another convenient information technology is a mobile phone, which is called a smartphone, has a clear advantage. For example, communication videoconferencing, conference system on tele-education network system, the e-commerce system, the nature of these activities, extends the scope of work everywhere (John Naisbitt, 1991) and can be operated 24 hours a day. In addition, the financial system, money transfer makes disbursements almost always can operate via mobile phone at any time and every place. Therefore, in today's communication, most people are using smartphones all over the world.

In the context of Buriram Municipality Buriram province which is the province that has promoted sports tourism, OTOP products and souvenirs, which is a provincial development strategy. Buriram's government management team believes that is believed to make Buriram prosper and make people in this area have a better quality of life. Moreover, the group of students studying in higher education institutions in Buriram Province, and it was found that these students preferred to work while studying to earn income to support scholarships, which one way to make more income is to find income from selling products via the internet. In addition, level individuals and business also used smartphones to communicate and it is a tool to generate income. From the above, it leads to interest in researching factors that affect the decision to choose a smartphone and study in the area of Buriram Municipality, Mueang District, Buriram Province. Therefore, bring to the research objectives as follows

Research Objective

In this research have three research objectives to study the variables were influence the purchase of smart phones of people in Buriram Municipality.

1. To study the product factor was the positive affecting the purchase of smart phones of people in Buriram Municipality.
2. To the study the price factor was the positive affecting the purchase of smart phones of people in Buriram Municipality.
3. To the study the marketing promotion was the positive affecting the purchase of smart phones of people in Buriram Municipality.

Literature review and hypotheses

Marketing scholars believed that marketing mixes were an important tool for marketing success. 4 Ps was like a marketing plan that will lead to practical results. Today the business competition was high the business will survive, sell more products, require marketing principles. Marketing mix to support, especially for products with modern technology and highly competitive. Therefore, product factors, prices were important to stimulation consumers decide to buy products. The high sales were the customers satisfaction product and price. The customers have loyalty in the product (B.R. Londhe. 2014, 1) and the product will be sold will be different from other products as well. (Bennett.1997). Moreover, concluded that customers will compare prices by considering the quality, style, ability of the product. Therefore, from the above, it led to research on marketing mix concepts that affect purchasing decisions. This research tested from smartphone products.

This research has one hypothesis to study the variables were positive impact on the decision to buy smartphones of people in Buriram Municipality. Based on the above framework, several hypotheses were tested as follow.
Hypothesis: The product factor, the price factor and the marketing promotion were the positive affecting the decision to purchase smart phones of people in Buriram Municipality.

Research Metrology

This study is a quantitative research and there were the methods of research as follows.

1. Sample and data collection
   1.1 The population People in the municipality of Buriram cannot know the number. Therefore, using random sampling criteria that do not know the exact population A sample of 369 sets
   1.2 Sample
      This collection of questionnaires is a simple random sampling. By collecting with people in Buriram Municipality In government agencies, private companies, department stores And Buriram Rajabhat University This sample group collected 369 people.

2. Research tools

In this study, the researcher reviewed the literature and introduced the Porter educational concept framework. And have created a questionnaire to be used as a tool for collecting research data. There are steps to take as follows.

Step 1: Study research papers and related literature and used to create a variable definition
Step 2: Create a questionnaire from the concept of stress theory. Which covers fiction Define 5 levels of options with the highest level of feedback from the lowest level. By consulting experts in research
Step 3 has brought the questionnaire created to experts. In order to examine the content quality (Content Validity) and the researcher has revised the questionnaire as recommended by experts (Nunnally and Bernstein, 1994: 245)
Step 4: Check the quality of tools as follows
   4.1 Check content (Validity) by 3 experts to check the content coverage. Accuracy of expressions and languages used
   4.2 Confidence test (Reliability) Analysis of confidence by using the Cronbach's Alpha Coefficient formula. The questionnaire was tested with a sample of 30 samples of the sample. 0.638-0.840. In conclusion, the questionnaire has a good level of confidence and can be used. As for the accuracy of the tool, it was found that the factors on each side were factor loading between .438-.869(Nunnally and Bernstein, 1994: 245)

This study was assessed by the measurement model using confirmatory factor analysis (CFA) and hypothesis testing by using multiple regression analyses by n=30. The set of items to CFA to test validity of construct, all factors loading were 0.438 to 0.869 as being greater than 0.40 cut-offs and statistically.
significant the rule-of-thumb (Nunnally and Bernstein, 1994: 245). The reliability of the measurement was evaluated by Cronbach’s alpha coefficients. The value of Cronbach’s alpha coefficient for all constructs was higher than the 0.6 cut off value by Hair (2006). However, in this research, it ranged from 0.638 to 0.840, where the result of the Cronbach’s alpha coefficient of human capital was under the value (Hair, 2006). The results, therefore, were shown in Table 1 and each item was evaluated according to their expert opinions as to whether each item was measured for what had been intended to measure (content validity).

To prevent possible response bias problems between respondents and non-respondents, a t-test comparison of the all variables means between early and late respondents was conducted in correspondence with the test for non-response bias by Armstrong & Overton (1977). The results showed there was no significant difference between early and late respondents demonstrates non-response bias between respondents and non-respondents, and the latest respondents represented non-respondents. Thus, non-response bias was unlikely to be problematic in this research.

Before conducting the data analysis, the researchers tested the correlation of the variables studied which found that found that the correlation of variables in education which consists of product factors (PRF), price factors (Price factor: PF), marketing promotion (MP) and decision buy smart phone (DBP), correlated as follows product factor: PF has correlation with price factor (PRF) equal to \( r = .460, p < 0.01 \), product factor (PRF) with correlation with marketing promotion (MP) is equal to \( r = .599, p < 0.01 \), Product factor (PRF) is correlated with Decision purchasing smart phone : DP) \( (r = .598, p < 0.01) \), price factor (PF) was correlated with marketing promotion (MP) equal to \( r = .307, p < 0.01 \), product factor (PRF) has relation to decision buy smart phone (DP) equal to \( r = .319, p < 0.01 \), and marketing promotion (MP) There is a decision purchasing smart phone correlation (DP) equal to \( r = .644, p < 0.01 \). Therefore, it can be seen that all variables in the study are correlated at the criteria level or below 0.8 (Stevens, 2002) does not cause problems (multicollinearity) as shown in Table 1.

Table 1 Correlation analysis of factors affecting the decision to buy a smartphone

<table>
<thead>
<tr>
<th>Variables</th>
<th>Product factor</th>
<th>Price factor</th>
<th>Marketing Promotion</th>
<th>Decision purchasing smartphone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>4.3220</td>
<td>4.2620</td>
<td>4.2612</td>
<td>3.6579</td>
</tr>
<tr>
<td>S.D</td>
<td>.50251</td>
<td>.52333</td>
<td>.57412</td>
<td>.80924</td>
</tr>
<tr>
<td>Product factor</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price factor</td>
<td>.603**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marketing Promotion</td>
<td>.514**</td>
<td>.549**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Decision purchasing Smart phone</td>
<td>.316**</td>
<td>.549**</td>
<td>.298**</td>
<td>1</td>
</tr>
</tbody>
</table>

**p > .05 Bata coefficients with standard errors in parenthesis
Result

The 369-member questionnaires found that 38.5 percent of the informants were male, 142 male, 61.5 percent female, 227 persons. Most of the members aged 18 - 28 years, 301 people, accounting for 81.6 percent, aged 29-39 years. Accounted for 44 percent, aged more than 40 years, or 3.3 percent, and had under-bachelor degree education, 112 persons, accounting for 30.4 percent, had a bachelor's degree or equivalent to 246 persons, 66.7 percent, 10 master's degree Think And 2.7% higher than 1 master's degree. Most members are single, 312 people, 84.6%, married 49 people, 13.3%, 66.7% are students and 9.5 members who provide information are students. 246 people, accounting for 66.7 percent, independent occupation of 35 people, 9.5 percent, working in private companies 27 people, accounting for 7.3 percent, government officials 19 people, accounting for 5.1 percent, trade occupation of 20 people, representing a percentage 5.4 and 3 housewives occupation, representing 0.8 percent.

This research to test the utilized regression analysis in order to validate the research framework and hypotheses. The independent variables were entered into the equations as a group (stepwise method)

\[
DP = \alpha + \beta_1 PRF + \beta_2 PF + \beta_3 MP + \epsilon
\]

Table 2, hypothesis testing, the result of regression analysis show that the product factor was positive on the decision purchasing smart phone \((\beta_1 = .208, p < 0.10)\). The price factor was positive on the decision purchasing smart phone \((\beta_2 = .324, p < 0.10)\). The marketing promotion was positive on the decision purchasing smart phone \((\beta_3 = .164, p < 0.10)\). Therefore, the result supported hypothesis.

Table 2 The result of regression analysis

<table>
<thead>
<tr>
<th>Independents Variables</th>
<th>Dependent Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Decision purchasing smart phone (DP)</td>
</tr>
<tr>
<td>Product factor (PRF)</td>
<td>.208*** (.101)</td>
</tr>
<tr>
<td>Price factor (PF)</td>
<td>.324*** (.100)</td>
</tr>
<tr>
<td>Marketing promotion (MP)</td>
<td>.164*** (.085)</td>
</tr>
<tr>
<td>Adjust R²</td>
<td>.142</td>
</tr>
<tr>
<td>Maximum VIF</td>
<td>1.303</td>
</tr>
</tbody>
</table>

***p < .01, a Beta coefficients with standard errors in parenthesis
Conclusion and suggestions

The result in this research confirm the conceptual frame. The product factor, price factor, and marketing promotion were positive to decision purchasing smart phone. The results were consistent with previous studies which founded that the price positively affected the decision to buy the smart phone of the customer. The smart phone had many options to using such as being able to take a photo, record videos, and communication via video conference. In addition, the price of smart phone was not expensive. Some smart phone was not the reputation brand but it had many options. The research of Astuti and others (2015) found that the consumer in the Malang, Indonesia consider the price to purchasing the smart phone and features of the smart phone were diversity. The most consumer pay more attention to the size and ability to use smart phone. On another word, the consumers bought smartphones because they use smartphones for communication and it was convenient to use anywhere. Most consumer used the smart phone to sales online. However, the smart phone being the validity brand and the consumer use the short time to decision to purchasing (Yunus, 2015, 347). This research, the price factor was the positive effecting to decision purchasing smart phone because the sample were the student in university. The student focused on the budget to purchasing the smart phone.

Suggestions

1.1 This research studied the marketing mix positively affecting the decision to purchasing a smart phone and tested only three variables, including product factors, price factors and marketing promotion factors.

1.2 This is a research only in Buriram Municipality area, Buriram province, Thailand and will find that price factors affect the decision to buy a smartphone. In addition, product factors and marketing promotion factors respectively.

1.3 Future research should test other variables. In addition, conducting a qualitative study and conducted interviews to confirm the conceptual framework.

Acknowledge

This research is accomplished according to the objectives. The researcher wishes to thank the undergraduate students. Buriram Rajabhat University that has helped to answer the questionnaire. The research team would like to thank the research advisors. Assistant Professor Dr. Rapeepan Phongjinwong That gives advice on doing this research.

References


A Conceptual Model of Knowledge Transfer Capability and Business Performance

Pattariya Prommarat*

ABSTRACT

Knowledge base resource is an intangible asset that very importance for the organizations to gain business performance. It has received much interest from researchers as a source of competitive advantage because it reflects ability in responding and conforming to business environment change. This research introduces the knowledge transfer capability as an organization’s competency to allocate their tacit knowledge and explicit knowledge from the one to the others. This process might be occurred in personal, teamwork, or organizational levels. Therefore, this conceptual paper aims to investigate the relationship of knowledge transfer capability and its consequence that will affect business performance. Moreover, this paper has proposed the relationship between antecedence construct and knowledge transfer capability. The contributions of this paper are useful for research to develop theory in strategic management, and provide suggestions for practitioners to implement for business administration. In future research, software business in Thailand expects that empirical research will manifest knowledge transfer capability, whether or not it will comprehensively accomplish business performance.

Keywords: Knowledge Transfer Capability

Introduction

Today, business environmental such as economic, social, cultural, and technological have been changes evolving, continuous, and intense. It could yield possible advantageous or disadvantageous outcomes to the firms. Accordingly, the organization must achieve its capability by managing its people, processes, and structures through organizational strategy to achieve competitive advantage and superior performance (Wangner, 2010). In era of knowledge base economy, knowledge base resource has been a crucial resource to increase organization’s competitive advantages (Blomkvist, 2012). Numerous of firms are focusing their attention to the importance of information system since it has significant impacts on organizational knowledge. The application of information is based on utilizing the data for successful strategy which enhances corporate profits and performance (Chou, Chang, Cheng and Tsai, 2007). Moreover, businesses are also adapting their competitiveness by developing products in corporate knowledge which are representing corporate quality and customer satisfaction (Paica, Roth and Fensterseifer, 2008). Therefore, each organization tries to create knowledge, manage knowledge and transfer knowledge from the sources both inside and outside the organization.

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In this research, knowledge transfer capability is defined as a transfer competency with tacit knowledge and explicit knowledge from the one to the others persons. This process might be occurred in personal, teamwork, or organizational levels (Hallin and Marnburg, 2008; Park, 2011). It is necessary for most firms to seek knowledge into their organizational knowledge. Such knowledge integration would create the product values and better manufacturing characteristics. The knowledge transfer capability explains the establishment of corporate competitive advantages and operational performance (Konthong and Ussahawanitchkit, 2010). It is also embraced by much software business in Thailand by mediating various effects from innovation that create the organizational capability.

Research Objectives
1. To examine the relationships between the knowledge transfer capability and organization value creation.
2. To examine the relationships between the organization value creation and business performance.
3. To examine the relationships between the antecedents (executive long-term vision, organization structure flexibility, absorptive capability and environment complexity) and knowledge transfer capability.

Literature Review and Conceptual Model
This study is adapted with “knowledge-based view theory” which aims to explain organizational competency dealing with seeking for knowledge and to add values concerning competitive advantages of organization.

Knowledge-Based View Theory
Knowledge-Based View is defined as a firm’s capacities for creating knowledge. It is also involved with ways to add values of organization that stimulate competitive advantages (Zheng, Yang and Mclean, 2010). These privileges could extend and encourage Resource-based view (RBV). As regards of Barney (1991), organization’s competitive advantages will be sustainable by its definitely proper resources and capacities. Grant (1996) describes that Knowledge-Based View is considered to be organization’s crucial resource. The base of knowledge like human resource is quite hard to imitate. Moreover, different bases of knowledge and inter firms capacities are main factors of sustainably competitive privileges and firm efficiency above the others (Kogut and Zander, 1992). Knowledge is the Intangible assets (Grant, 1996). Both individual and group are able to apply for creating procedures of learning exchange and for affecting knowledge management of attempting convenience, exploring activities and knowledge arrangement (Liao, Chuang and To, 2010). This research works with knowledge-based view theory due to explain the relationship between the variables of a conceptual framework.

In this paper discusses and examines a conceptual model of knowledge transfer capability and business performance. Thus, the conceptual, relationship, and research models are provided in Figure 1.
Knowledge Transfer Capability

Knowledge is the understanding of a particular subject or concept, theory and practical information that can be used in different ways. It is also the Intangible assets that involved with ways to add values of organization that stimulate competitive advantages (Heng, Yang and Mclean, 2010). Furthermore, knowledge management defines accumulating, generating, arranging, exchanging and applying organizational knowledge which aims to develop its systems adapted from information to information technology due to prosper knowledge and wisdom (Carayannis, 1999). It is the operating courses dealing with making, collecting, transferring and applying knowledge because of advantages of use and learning in organization (Massa and Testa, 2009).

Capability of knowledge management is based on acquiring knowledge, selecting knowledge, internalizing knowledge, using knowledge, generating knowledge and externalizing knowledge (Liao, Chuang and To, 2010). Nonaka and Takeuchi (1995) classified 2 types of knowledge. (1) Tacit knowledge defines knowledge that cannot be explained by speech and that is mainly characterized by actions and experiences, it is relied on belief, skill, practice and context-specific being formal and hard to communicate. (2) Explicit knowledge concerns experiences and generating knowledge with pattern of tacit knowledge such as skill and idea for systematic thinking process and new skill. The model of relationship between two types of knowledge is touching on four parts of exchange. It’s consist of socialization is related to process of social exchange, externalization is transforming knowledge process from tacit knowledge to be simply understanding and compiling organizational knowledge for example organization tries to apply knowledge and skill to more easily understood throughout pictures, diagrams, function and equation etc., combination is process to be union of knowledge from interdisciplinary unit in order to generate new knowledge and internalization is knowledge process stimulated by actions which become process of transform knowledge to be other types likes document, skill and personal or organizational capacity. It also refers to simply collected knowledge systematic managed and transfers. It is able to be diffused though typical approach and to prosper knowledge without integrating the others such as organizational policy, operating system, software, document and organizational strategies (Dhanraj et al., 2004; Anh et al., 2006). In addition, knowledge transfer describes informational exchange and arrangement of system and skill between organizations (Kogut and Zender, 1993). The exchange can be occurred in several levels, personal, teamwork and organization. As well, knowledge transfer efficiency is mainly built by capacity of knowledge’s giving, capacity of knowledge’s getting and creating cooperation. Accordingly, it intends to present definition of
knowledge transfer and categories of knowledge and important wording of organizational knowledge (Duan, Nie and Coake, 2010). Therefore, in this research, knowledge transfer capability is defining as a transfer competency with tacit knowledge and explicit knowledge from the one to the others persons. This process might be occurred in personal, teamwork, or organizational levels (Hallin and Marnburg, 2008; Park, 2011).

From review literature related to knowledge management, it presents that knowledge management in personal level causes the increasing products, personnel working, firm’s innovation among which knowledge management is considered to gather (Kessling et al., 2009). In addition, the structure of knowledge and the development of innovative products of 10 technology companies, shows that innovative products developing are caused of knowledge from the employees in the organization. Including the performance of the teamwork operating system to create new knowledge and encourage research related studying potential enterprise (Mohrmana, Finegold and Mohrman, 2003). Including, the study of multi-case study by analyzing the characteristics of the organization to learn proper formatting will affect the education and skills of its employees, including a high-teamwork into the present (Filippini, Guttel and Nosella, 2012). As a result, we would like to present relationship between knowledge transfer capability and organization value creation.

**Proposition 1:** The Knowledge transfer capability will be positively influence on organization value creation.

**Organization Value Creation**

The term of “value creation” refers to the way to achieve and retain a competitive advantage with a process consisting of a set of activities starting with the design and development of what is going to be produced, and of the interaction between consumer and company in creating value (Woodruff and Gordial, 1996). The customer value creation includes: (1) the establishment of appropriate market objectives, (2) the selection broader industry setting in specific market segment, (3) the value creation of a proposition established to position competitive advantage, and (4) the development of capabilities being necessary to understand customer demands and delivering the promised value (Eğert and Ulaga, 2002). In the customer view, value perception as a trade-off between perceived benefits and perceived sacrifice. The options for creating value are of two ways: increasing the benefits to the core product, and reducing customer-perceived sacrifice (Ravald and Gronroos, 1996). From the firm’s perspective, customer value creation is essential in that the organization must recognize its own positive economic consequences for the firm (DeSarbo, Jedidi and Sinha, 2001). Superior value for customers is essential for business success and competitive advantage (Nasution and Mavondo, 2008). Henceforward, in this research, Organizational value creation refers to the formulation of an organization’s innovative creation in terms of product and operational processes. This enables the organization to respond to needs and to create satisfaction among customers and stakeholders (Bourguignen, 2005; Wikstrom, 1996).

The previous literature represents that firms emphasize creating and delivering a better value to offer to their customers and stakeholders over their competitors, and which should obtain positional advantage, satisfaction (Blocker et al., 2011), loyalty, and intention to repurchase, leading to long-term competitive advantage and firm performance (Guenzi and Troilo, 2007). Therefore, the proposition is posited as follows:

**Proposition 2:** The organization value creation will be positively influence on Business performance.
Business Performance

Business performance refers to the overall outcome of corporate performance that achieves the goal with efficiency. (Lahiri et al., 2009). Measuring firm performance is also significant for a researcher, to attract their attention, and to have an understanding of the factors that influence a firm’s capability to retain customers and achieve goals. Many researchers expose important insights for the understanding of the factors influencing a firm’s success (Mouzas, 2006). Previous researchers often used financial and non-financial measures as indicators of measures in assessing firm performance. The financial measures consist of sales, profits, return on assets (ROA), and return on investment. As well, the non-financial measures refer to non-monetary and qualitative measures such as customer satisfaction, product quality, corporate image, and firm reputation (Theriou and Chatzoglou, 2009).

Recent years have expanded organizational perspectives beyond financial and non-financial measures. Measures of assessing firm performance to achieve overall firm objectives, focus on four types, namely: finance, customers, internal business processes, and learning and growth (Chalathrawat and Ussahawanitchakit, 2009). Gao (2010) proposes that business performance is a firm’s success comprising an organization’s capability to respond to customer demands, and adaptation capabilities in environmental change.

Executive Long-Term Vision

The chief executive of an organization (CEO) has emerged as an essential element in their organizational goals and has actively promoted a new strategy to respond to environmental change for the success of the organization’s operations (Lee, 2008). They are key persons who have relevant responsibility for all aspects of organization, give directions and vision to the organization, with the best decisions at high level of uncertainty, complexity and unpredictability. (Bonn and Fisher, 2011). The organization that will be successful depends on the ability of the executives’ vision with their skillfulness in management and business practices that contribute to sustainable development. The skills in management and business practices are essential for leaders to accommodate this process for creating vision and to specify strategy to integrate all business function components to align with their vision (Foster and Akdere, 2007). For instance, an individual manager exhibiting risk-tolerant leadership would encourage large and risky resources commitments such as investing in new products and services with new technology, thereby requiring access to financial resources to alleviate the danger posed by a risky project failing (Wiklund & Shepherd, 2005). Therefore, the Long-term vision of the chief executive of an organization is defined as team direction, goals and objectives (Carmen et al., 2006). From these views, executive long-term vision refers to the guidelines of the organization to focus on the integration of knowledge and capability which focuses on strategic planning and operational management to achieve successful competition and sustainable development in the future (Carmen et al, 2006; Ravilla and Rodriguez, 2011).

The executive long-term vision has emerged as an essential element in their organizational goals and has actively promoted a new strategy to respond to environmental change for the success of the organization’s operations (Lee, 2008). Hence, the proposition is posited as follows:

**Proposition 3:** The executive long-term vision will be positively influence on knowledge transfer capability.
Organization Structure Flexibility

Organization structure is relevant to operate and create innovations (Jansen et al., 2006). The difference’s characteristics of organization structure causes difference’s resource allocation (Siggelkow and Lecinthal, 2003). Khandwalla (1977) describe, the centralization structure refers to characteristic of structural management which directs to steps, processes, models and work roles in organization’s operation. As well, it concentrates the formal communicational steps. The decentralization structure relies on the operations intending to be comfortable, rapid and without complicatedly operational steps so that it assists to cause the best efficiency for internal operations. It stimulates more efficient and more convenient communication encouraging trustworthiness between the individual and organization (Kang and Snell, 2009). The decentralization structure becomes the structure management which energizes operation’s efficiency in long term. It’s also appropriated to work with learning process (Siggelkow and Levinthal, 2003). In addition, the decentralization structure becomes organization structure that operation’s flexibility that integrations cause opportunities for sharing knowledge and technology (Atuahene-Gima, 2005). In this research, organization structure flexibility defines as the operations intending to be comfortable to cause the best efficiency for internal operations. It stimulates more efficient, convenient communication, encouraging trustworthiness between the individual and organization.

From the literature review, the association between person, teamwork and internal sections are provoked knowledge transfer capability (Burt, 2004). The ability seems social basis of knowledge exchange. Strengthened relations between sender and receiver hold up process of knowledge exchange between persons in organization, supporting basic understanding and efficiency of knowledge transfer (Tina and Bjorn, 2009). The personal cooperation might be able to decline internal inequality and to increase relationship between persons for affecting knowledge transfer as sharing knowledge, skills and working experiences among them (Larissa, 2011). The personnel is capable to integrate knowledge with working mechanism such as electronic cooperation, that helping to decrease the knowledge differences and supporting to learn how to reach for the advantages (Liu, Pucel, and Bartlett, 2006). Therefore, the proposition is posited as follows:

**Proposition 4: The organization structure flexibility will be positively influence on knowledge transfer capability.**

Absorptive Capability

Knowledge is essential to creating innovations for create competitive advantage of the organization. Admittedly, the knowledge is the Intangible assets (Grant, 1996). Crossan and Berdrow (2003), mention to a procedure of organization learning process is involved with exploration and exploitation. The foundation of exploration process relies on entrepreneurial intuition and interpretation of new ideas. It is variance-seeking and encompasses the constructs of creativity and innovation. On the other hand, the exploitation process, it’s based on the transfer of institutionalized organizational learning. It is reliability-seeking and incorporates learning of standard routines, transfer of existing knowledge, and incremental adaptation (McGrath, 2001). However, the differences between the two learning practices and researchers have been considered that the well-balanced arrangement of the two types of learning is crucial for enduring organizational success (Gupta, Smith and Shalley, 2006). In addition, the organization learning requires knowledge by absorptive capability from internal and external sources. The absorptive capacity is based on individual ability of knowledge perception from teamwork (Minbaeva et al., 2002). This capacity is able to be applied for developing their own competency and their working capacity (Jifeng, Tang and MacLachlan, 2010). In this
research, absorptive capacity refers to ability of the firm to perceive the new information, to recognize the value, and to apply it to commercial advantages. It tends to develop the approach of interdependence and to rely on relationships and existing experiences (Cohen and Levinthal, 1990).

The process of absorptive capacity of personnel’s marketing knowledge concerns knowledge transfer from members in teamwork. The roles of knowledge become important to organizational success and the firm could be stable with knowledge and experiences of organization such as cooperating experience of personnel for R & D and high technology (Simonin and Ozsomer, 2009). Derived from the study of Garvey (2009) about MNCs company in China and Vietnam, job consulted by senior personnel with his potentially working experiences is able to increase operating competency to junior personnel without good working skills. The personnel who has knowledge, experiences and recognizes about absorptive capacity was a capacity of knowledge transfer from international organization Park (2011). So, it aims to present the relationship between absorptive capacity and knowledge transfer capability. Therefore, the proposition is posited as follows:

Proposition 5: The absorptive capacity will be positively influence on knowledge transfer capability.

Environment Complexity

The business environment that comprised of macro environmental factors including economic, social, cultural, technological, and competitive environmental factors is the external environment of the firm. It is probably difficult to control and predicts the future (Robbins and Coulter, 2003). It affected the characteristics and operating results of the firm (Grewal and Tansuhaj, 2001). Therefore, the firms have to accommodate themselves with environment changing. If they can modify suitably their organization structure with external environment, they will have advantage over their business competitors (Nicolau, 2005). Henceforward, in this research, environment complexity refers to the perception toward the change of external circumstances which have ambiguous and uncertain conditions. The complexity affects the operation of the organization (Luo, 2001; Nicolau, 2005).

As prior research, the environment complexity also affects the activity of a firm’s strategic planning which perceives uncertainty and the complexity of environmental causes as motivating factors to develop new operational strategies (Meijer, 2010). Furthermore, heterogeneity, uncertainty, instability, and dynamic environment are the key elements for the organization to create new strategies of operation in order to deal with competitors and increase their competitiveness (Ussahawanitchakit, 2005). Therefore, the proposition is posited as follows:

Proposition 6: The environment complexity will be positively influence on knowledge transfer capability.
Contribution

Knowledge is important at various levels in all perspective of the organization. It is very importance for the organizations to gain competitive advantage leads to better organizational performance (Zheng, Yang and Mclean, 2010). The researcher suggests knowledge transfer capability as an organization’s capability to allocate their resources to deploy for creating competitive advantage over competitors Grant (1996). This paper defines knowledge transfer capability as transfer competency with tacit knowledge and explicit knowledge from the one to the others persons. This process might be occurred in personal, teamwork, or organizational levels (Hallin and Marnburg, 2008; Park, 2011).

Therefore, the main aim of this paper has been to consider the conceptual framework of knowledge transfer capability and business performance. This paper provides a useful theoretical contribution in management research by determining the relationship between knowledge transfer capability and business performance through its consequent construct; namely organizational value creation. Furthermore, the relationship between antecedence construct and knowledge transfer capability. The antecedence construct; namely executive long-term vision, organization structure flexibility, absorptive capability and environment complexity. In that all expect a positive relationship from the construct.

For future research, the researcher should have proof of this paper’s suggestion. The software business in Thailand should be suitable to show evident of this conceptual model which has two reasons. Firstly, the software business creates a high level of employment and yields potential impact on economic and social development. Secondly, the software business is limited with operational resources. Most businesses are small and medium-size. They need to seek options to run a business on such limited resources to make a higher profit. A small and medium software business is better to consolidate with knowledge transfer capability to overcome the limitation of operational resources. Therefore, future research is require confirming, expand, and examine the hypothesis with empirical in the software business in Thailand. It expects that empirical research will manifest knowledge transfer capability, whether or not it will comprehensive accomplishment business performance.

Conclusion

This paper is intended to provide an obvious understanding of relationships between knowledge transfer capability and business performance. Additionally, this paper has proposed knowledge transfer capability and its consequence that will affect business performance. Moreover, this paper has proposed the relationship between antecedence construct and knowledge transfer capability. The antecedence construct; namely executive long-term vision, organization structure flexibility, absorptive capability and environment complexity. In that all expect a positive relationship from the construct. However, although based on the literature review, all relationships between knowledge transfer capability and its construct look seem positive. The contributions of this paper are useful to expand strategic management theory, and implement suggestions for practitioners to business administration. Future research, software business in Thailand expects that empirical research will manifest knowledge transfer capability comprehensively and that will accomplish business performance.
Reference


The Self-Efficacy and Self-Regulation Learning Abilities Using Self-Assessment for Student Teacher, Roi Et Rajabhat University

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ABSTRACT

The objective of this study was to study the self-assessment of self-efficacy and self-regulation learning abilities for student teachers of Roi Et Rajabhat University. The participants were selected by using a simple random sampling. The study was investigated a Krejcie and Morgan table (2017) to be a research technique of selecting into 275 students from 915 population in total. This research was quantitative method using the self-assessment of self-efficacy and self-regulation learning abilities form that was adapted from the assessment self-regulation abilities' Rattanavaraha Dusaneer (2017) including 3 learning abilities as follow; 1) thinking and understanding strategies 2) metacognition strategies and 3) self-motivation and self-efficacy. Findings; the student teacher self-assessed found that 1) the level of thinking and understanding strategies was 3.16 at moderate level 2) metacognition strategies was 3.27 at moderate level and 3) self-motivation and self efficacy was 3.32 at moderate level, average of all self-efficacy and self-regulation learning abilities for student teacher, Roi Et Rajabhat University was 3.25 at moderate level, and S.D. is 0.73

Keyword: Self-Efficacy, Self-Regulation, Self-Assessment

Introduction

The teachers are the ones who prepare and lead the Thai people into a modern society. Teachers play a direct role in improving people’s quality. Teachers play a key role in enabling learners to learn. Teachers are leaders in the development of education. So teachers are very important person. Teacher production institutions must be in line with the policy by the Office of Higher Education (TQF). The standard of TQF is the following: (1) ethics, (2) knowledge, (3) intellectual skills, (4) relationship skills  5) skills in numerical analysis, communication and use of information technology, and 6) learning management skills. (Office of the Higher Education Commission, 2014). Likewise, the development of students teacher in the

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Bachelor of Education Program, Faculty of Education, Roi Et Rajabhat University. The institute of teacher production aims to produce graduates as professional teachers and expert in their fields, prepare them to be a high proficient teaching. To develop the graduates to have the knowledge to manage the learning.
Raise awareness for youths like to learn. Use communication technology to benefit learning. The moral and ethics is a good example to society (Faculty of EDU., RERU, 2016). According to the curriculum, students will have to have self-efficacy learning abilities (Bandura, 1997) that mean they have to have self-motivation beliefs themselves to be a good teacher and self-regulation learning abilities (Barry J. Zimmerman, 2011) that mean they have to have thinking and understanding strategies and metacognition strategies to support them in to the new quality of teacher and success in learning process of practicing the teacher's professional experience and also meet the standard of Thailand Qualification Framework (TQF).

**Research Objectives**

To study the self-assessment of self-efficacy and self-regulation learning abilities for student teachers, Roi Et Rajabhat University.

**Literatures Review**

**Self-Efficacy**

Self-efficacy is how ones learn their efficacy; Self-efficacy is a personal factor that influences motivation to self-regulation learning (Bandura, 1997). In order to develop their efficacy, there are several ways in which Bandura believed that person should have faith in the efficacy. Various elements of self-efficacy can be created as following:

1) **Enactive Mastery Experiences** is a training for individuals of experienced success. Direct experience enables individuals to achieve on their own. It allows people to have faith that they tend to behave with confidence.

2) **Vicarious Experiences** are perceived of others’ experience of others. It is the way to link their abilities with the abilities of others. This is something that people would compare their abilities with individuals in similar experiences. If he is successful, this will result in individual assessment that he would be able to be successful as well.

3) **Verbal Persuasion** is the use of words to induce or convince other people to succeed gradually until finally accomplish. This is a way to help individuals to increase their efficacy.

4) **Physiological and Affective State** is related to physical expression and the result affected. They are the expression of the people to determine their ability to find and compare the strengths and weaknesses of their own that unfulfilled.

**Self-Regulation**

Self-regulation is how ones are capable of directing their own. These concepts are based on the theory of learning, intellectual, social as called Social Cognitive Theory by Albert Bandura (1997). Self-Regulation is a form of self-regulatory efforts to work on functions using an appropriately skilled and self-directed learning skills that are vital in the learning institution and practicum. Students who are self-regulation tend to be enthusiasts who handle anything with tactical use of intellectual and cognitive performance to achieve the goals efficiently. The process of self-regulation is demonstrated by Barry J. Zimmerman (2011) as follows:

1. **Forethought Phase**
   1.1 Task Analysis
      1.1.1 Goal Setting
      1.1.2 Strategic Planning
1.2 Self-Motivation Beliefs
   1.2.1 Self-efficacy
   1.2.2 Outcome Expectation

2. Performance Phase
   2.1 Self-Control
       2.1.1 Task strategies
       2.1.2 Volition strategies
       2.1.3 Self-instruction
       2.1.4 Imagery
       2.1.5 Time management
       2.1.6 Environmental structuring
       2.1.7 Help-seeking
   2.2 Self-Observation
       2.2.1 Metacognitive monitoring
       2.2.2 Self-recording

3. Self-Reflection Phase
   3.1 Self-Judgment
       3.1.1 Self-Evaluation
       3.1.2 Causal attribution
   3.2 Self-Reaction
       3.2.1 Self-satisfaction/affect
       3.2.2 Adaptive/defensive

The concept of self-efficacy and self-regulation learning can apply to develop the learners extensively. They self-efficacy and self-regulation learning affect much to the learners because self-regulation is an effort to perform duty by using ability in self-efficacy. Self-regulation is necessary skill in schools and practicum.

The self-assessment of self-efficacy and self-regulation learning abilities form

The form was adapted from the assessment self-regulation abilities’ Rattanavaraha Dusanee (2017) including 3 learning abilities; 1) thinking and understanding strategies consist of 13 behaviors 2) metacognition strategies consist of 12 behaviors and 3) self-motivation and self-efficacy consist of 15 behaviors

Research Methodology

1. This research uses survey research, which is the one of descriptive research; (Kaemkate Wannee, 2012)
2. Using the self-assessment of self-efficacy and self-regulation learning abilities form adapted from the assessment self-regulation abilities’ Rattanavaraha Dusane (2017) including 3 learning abilities as follow;

1) thinking and understanding strategies consist of 13 behaviors 2) metacognition strategies consist of 12 behaviors and 3) self-motivation and self-efficacy consist of 15 behaviors

Population and Sample

1. Population was the student teacher year 4 of Roi Et Rajabhat University 915 students from 10 majors that they had passed the Practicum 1 course.

2. Sample: using simple random sampling (Kaemkate Wannee, 2012) total 275 students by investigating a technique of Krejcie & Morgan Table (Krejcie & Morgan, 2017) for selecting the participants.

Research tools

The research tools using the self-assessment of self-efficacy and self-regulation learning abilities form adapted from the assessment self-regulation abilities’ Rattanavaraha Dusane (2017) including 3 learning abilities as follow;

1) thinking and understanding strategies consist of 13 behaviors
2) metacognition strategies consist of 12 behaviors and 3) self-motivation and self-efficacy consist of 15 behaviors. The Total questions is 40 questions using 5 rating scale as follow;

1 = not at all true means I don’t have this behavior
2 = slightly true means I have this behavior for 1-2 times in 10 times
3 = moderately true means I have this behavior for 3-5 times in 10 times
4 = quite true means I have this behavior for 6-8 times in 10 times
5 = Exactly true means I have this behavior for more than 9 times

Data collection

1. Meeting for understanding to the simple. Explaining what is the self-efficacy and self-regulation learning and behavior to show the ability of self-efficacy and self-regulation and the time to use for self-assessment.


3. Data collection and analysis using Mean and Standard Deviation. The criteria for interpretation were as follow:

4.51-5.00 = Very high
3.51-4.50 = high
2.51-3.50 = Moderate
1.51-2.50 = Low
1.00-1.50 = Very low/Very good.

Statistical Techniques:
The statistical techniques Using Mean and standard deviation (S.D.)

Results
The student teacher self-assessed found that 1) the level of thinking and understanding strategies was 3.16 at moderate level 2) metacognition strategies was 3.27 at moderate level and 3) self-motivation and self efficacy was 3.32 at moderate level, and S.D. is 0.73. as follow:

<table>
<thead>
<tr>
<th>Self-Ass of Self-efficacy and Self-Regulation Learning Abilities</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thinking and Understanding Strategies</td>
<td>3.16</td>
<td>0.76</td>
</tr>
<tr>
<td>Metacognition Strategies</td>
<td>3.27</td>
<td>0.74</td>
</tr>
<tr>
<td>Self-motivation and Self-Efficacy</td>
<td>3.32</td>
<td>0.71</td>
</tr>
<tr>
<td>Total</td>
<td>3.25</td>
<td>0.73</td>
</tr>
</tbody>
</table>

Summary
As summary from the results, The level of thinking and understanding strategies was 3.16 at moderate level, metacognition strategies was 3.27 at moderate level and self-motivation and self-efficacy was 3.32 at moderate level, average of all self-efficacy and self-regulation learning abilities for student teacher, Roi Et Rajabhat University was 3.25 at moderate level, and S.D. is 0.73.

Discussion
The thinking and understanding strategies, metacognition strategies and self-motivation and self efficacy were moderate level shown that student teachers should be considered in learning ability to help them success more learning and being more the professional teachers through enhancing self-efficacy (Bandura, 1997) and self-regulation (Barry J. Zimmerman, 2011). From the study on Bandura’s (1997) theory of learning self-efficacy and Zimmerman’s (2011) self-regulation can explain that student teacher have to create of belief by presenting a model; The model which may derived from inspiring teachers or teachers in the content areas. They will be good models to the students which is consistent with Bandura’s concept on self-efficacy comparable to the model. Then student have to set goal for success in learning for themselves. Then student have to plan and implement to develop their own goals to use in learning. Next, student have to self-assessment and improvement after being in learning, students evaluate and judge themselves, what is required to develop their strengths and weaknesses, and what leads to self-improvement. Next, student have to reflection on their learning that improve their own judgment; This is a step that students bring their own leadership development plan to evaluate and improve their own
judgment, and then to share issues that would be useful to learn with others that can lead them close to the teacher standards of practice: teachers council in Thailand.

**Future Research Directions**

From the results shown that should do the research on how to develop self-efficacy and self-regulation for student teacher to be high quality of teacher.

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The Divorced and Widowed Protagonists: Sexual Marginalization in Contemporary Thai Novels

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Nittaya Wannakit**

ABSTRACT

This study aims to study the marginalization of widowed and divorced protagonists in six contemporary Thai novels. The chosen novels are Samakhonmai (สมาคมมาย), Lablaelaimek (ลับแลลายเมฆ), Tamlompliw (ตามลมปลิว), Khakhonhuajai (ค่าของหัวใจ), Mahadsachanhangrak (มะหัศจรรย์แห่งรัก), and Jooddabnaiduangtawan (จุดดับในดวงตะวัน). By employing qualitative research methodologies using the framework of marginalization, the researchers found that these six novels present the sexual marginalization of the protagonists which shows that there is inequality between the sexual ideology of men and women. Wives are expected to do chores and serve their husbands. There are problems of domestic violence, rape, sexual harassment. The value on virginity makes widowers and divorcées less valuable than the other women. Widowers and divorcées are believed to be lonely women; therefore, they are easier to approach by men to start a new relationship. By observing through the scope of the characters’ perspectives and keeping the constant changes of society in mind, the researchers believe that these widowed and divorced protagonists in contemporary Thai novels do not always bow to the idealism of society. They can respond by adapting, constructing meanings and space for society to accept them as an equal.

Keywords: widowed protagonists, divorced protagonists, marginalization, and contemporary Thai novels

Introduction

In the past, the attitude of Thai society towards widowers was full of sympathy. Most married women became single because of their husbands’ death and not because they chose to divorce because getting a divorce was not widely accepted by Thai society. People used to shame those who got divorced because they viewed it as a shameful act. For this reason, it was not popular to get divorced. Moreover, arranged marriage was a common practice back in the days which put pressure on the women to be loyal to their husbands. Those who had lost their husbands would not remark and often died alone. Most widowers would lose their social value if they remarried and would be condemned by society. A Thai proverb, summed up the social norms, said “A woman with three husbands (is the same as) a man with three churches (temples);” this refers to someone who is not certain and decisive and implies to someone who

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should not be desired by the others. (Thabthong, 2003, p. 177). Sadjapan (2013) believes that the proverb implies someone with sexual desire. A good woman should have only one husband all her life. However, when we give these women a fair judgement, we can see that having more than one husband does not make someone a bad person. Remarriage could happen for other reasons. For instance, women in the old days had to financially rely on men, so they had to remarry to support themselves and the children. Another reason could be that she had fallen in love with a new man and wanted to give that love a trial. Supanwanitch (2011) stated that the aphorism condemns that these women are not good which reflects on Thai society. Widowers and divorcées are not accepted in society and when they decided to start a new love, their new lovers’ family members may oppose.

In the present, the social status and roles of women differ to the past. Women have equal rights to men in different ways which influenced the higher rate of divorces in the country. Pongsapitch (2003) mentioned that women do not stay at home much anymore. Women work outside their houses and earn incomes to help support the family, as well. Women have rights to democracy and rights to make decisions for their own lives. They do not have to follow the husband’s decisions; this is one of the causes for domestic conflicts leading to the decision for getting a divorce.

If society reflects on literature, literature can also reflect on the society. Novel is part of literature which is often used to transfer or reflect on society explicitly. Lewsriwong (2002) stated that literature is a mirror reflecting on the society in which the literature was built in. Even though literature reflects on only small parts of the society, the most important things to present are values of that timeline and also the visions of people in that particular era. Documenting the mentioned points is highly valuable and could be considered as part of documenting history. Novel is a type of literature that clearly reflects on the society the most.

Charuenporn (2003, p. 1-4) observed that phenomena in contemporary Thai novels after the year of 1987 usually represented new images of women. Women are seen as “ambitious” in these novels and this could be because of the rapid growth in Thai economy. 1987 was the beginning of the economic bubble. There was a big force moving society, political policies, new groups of diverse people, and the expansion of mass communication forward. The most important point was when “the bubble burst” and the economy slowed down rapidly and the people saw the opportunities to exercise their freedom in literature, especially on the environment, human rights, equality, communal culture, disadvantaged people, marginalized people, and literature about women which challenge and debate on the current discourses.

According to many literatures, the presentations of women’s image in contemporary Thai novels after 1987 differ from the past. These novels present protagonists who are divorced or widowed in a new shade of lights against the old beliefs and ideology of traditional protagonists. Even though they are not a virgin, had failed in previous relationships and their new love will most likely go against the social norms, these women still made their role as the protagonist of the stories. Having these “imperfect” characters as the protagonists in contemporary Thai novels bring women in the similar situations to the light and show that they have to fight against the sexual ideology of patriarchy which suppress rights of women and values of widowers and divorcées.

For the reasons above, this article presents the characters of widowers and divorcées and their sexual marginalization in contemporary Thai novels relating to sexual inequality and their sufferings through being suppressed, taken advantages of, and dehumanized.
The marginalized: the strategy of reading and studying widowed and divorced protagonists in contemporary Thai novels

The discourses of marginal man or marginality of people in Thai society are heavily influenced by western cultures. Witaya (1998 p. 17-18) mentioned that marginalized people are often powerless and considered the subordinate group and the have nots. When these marginalized people are gathered by the minority groups such as LGBT and those who do not have a social status, they are called ‘the others.’ Multiple marginalities dehumanize people.

Marginalization, according to Luangaramsri (2003, p. 15), is from the current of the main culture which builds social norms. The social norms push people aside until they become marginal people. The examples of marginalized people are homosexuals, prostitutes, and HIV patients. These groups are seen as someone who does not follow the religious morality by having sexual relations with the same sex and does not have the expected characteristics provided by the majority. For instance, having only one sexual partner (married) is ideal. Ko-anantagoon (2002, p. 12-13) believes that being marginalized is not only about being deprived from social positions, economic opportunities, and power, but also having the unquestioned agreements with society of where they belong. The marginal person might also realize the truth and accept where they are, but at the same time they might oppose.

The marginality of widowers and divorcées, according to Khamsuwan and Chokthananukoon (2012), has three characteristics which are as follow: 1) the inequality of sex, payment, status and roles; this makes it harder for widowers and divorcées to access to resources that would uplift the living quality of their families. They often end up being poorer than men, especially if they are single-mothers. Therefore, the government should realize the inequality of men and women in workforce and advocate for single mothers to be able to do their jobs and work outside their homes fairly. 2) Negative labeling on these women just because their marital status differs to what the society expects of them. 3) Obstructing and decreasing their power because these women are marginalized and not accepted by society. They often had to quit their jobs because they could not afford to work full time while having raising children.

From studying the marginalization of marginal people studies above, we can conclude that the marginalization in Thai society relates to various dimensions both geographical and sociocultural. Marginal people, by geography, are often the immigrants who moved away from their original land because of nature, economy, politics, settlement, careers and others. The minority often have to share and fight for the limited resources. The marginal people, by society and culture, are often the people who are the minority in a big society because of their culture that is not widely accepted. The majority has the power to select which culture they want to centralize.

The widowed and divorced protagonists and their marginalization of sexual orientation

Traditional Thai society with patriarchy often creates inequality of sex. This influence has its roots deepen into the culture of Thai society for a long time. Its belief still lingers in modern Thai society. By studying the marginality of sexual orientation of these characters, we found that the reduction of social role and status of these women come from the influence of patriarchal ideology. Patriarchy makes women less important than men and often makes them seen as an object. The ideology also generalizes women and sexualizes them. When women become a sexual worker, it is an action to construct meanings in society in terms of power and fighting justice for their family, society, community in the national level. The level of
sex education in every dimension including emotions, desire, sexual attractions and sexual values often show how much women are taken for granted by men.

The long-lasting tradition of Thai society about love, family, and sex control is the process of organizing the society; this creates the prohibitions of sexual expressions and punishments. Patriarchal society often identifies those rules to protect the interests of those with more power in society and to control women in every way. As shown in the novel Jooddabnaiduangtawan, a character named Pannika knows that her husband cheated on her and got in a fight with her husband because of that. Her brother gave her advice as follow:

“I tell you what. Men do not like to be a slave of anyone. If a wife wants to keep him, she must not blame him or make him feel bad and guilty because this is a small matter. Do not make this bigger (worse) than it needs to be. [...] Try to please him. Don’t be bland like a cold sauce. Whether you have a baby or not, you should not let yourself go. From now on you need to dress up (pretty), make yourself look young and do not worry about your child. Wherever Sek (her husband) go, you follow. Leave the kid with mom sometimes. Find time to have sex with him more than this. [...] Do not be cold. You were born to be a woman, so you need to have tactics and use them. All men will bow.”

(W. Winitchaikoon, 2013, p. 431-432)

From his words, Chawala meant that no men want to be enslaved. This reflects on the society that it gives more power to men than women. Having an unfaithful husband is because of the wife’s malfunction. It is her fault that she could not stop him. According to Chawala, a good wife must please her husband and not let herself go. She must try to look young and pretty all the time. This reflects on Thai society of how the husband is the center of power and the standards between husband and wife. The wife must be strict and keep the values of social orientation and having her husband cheats on her is a small matter. Men have more sexual freedom than women. Another novel Tamlompliw talks about how people teach daughters to be a good woman before and after marriage through a character named Prima or Praew who is the protagonist of the story as follow:

“…she has been taught that before marriage, men please women, but after marriage women must please the men. She follows this (teaching) strictly to be a good wife for him.”

(W. Winitchaikoon, 2013, p. 282)

From the paragraph above, readers can see the norms of Thai society on a good wife and how she should behave. A good wife must please the husband, especially after marriage. Prima follows the lesson strictly with her heart. However, when we think of feminism, this means that female is seen as less valuable after marriage and become inferior to their husbands. Moreover, when we consider culture as part of the sexual orientation and marginalization, we found that contemporary Thai novels present problems of family and how wives are often the victims of violence and sexual oppression by their husbands. Prima, the character, separated with her husband when she found out that he had cheated on her with her own cousin. Noppadon raped her because he thought that it would be the way to win her back as stated below:
“Noppadon could not see any other ways. This might look savage, but he is (her) husband, not someone else. So, she grabbed Praew and pulled her towards him hard, then lifted her up. (He) wrapped her tight ignoring the screams. [...] Noppadon took her to the door. He grabbed her with just one (of his) arm. She got away, ran and crawled down the stairs. He followed her and grabbed her around. At that moment, his hand landed on her cheek...it was not hard, physically, but mentally it hurt Praew all over. (W. Winitchaikoon, 2013, p. 305-306)

Noppadon decided to use violence against his wife because he believed that as a husband, he always had the upper hand. This novel presents how women often have to follow the traditions on preserving their purity, but men do not have to control anything. Men have more sexual freedom than women. Wife is the property of her husband’s, so he can do whatever he wants with her as can be observed below:

“...at the same time, his idea of how to win pops up. It is not to argue with Punnika because we all know that arguing with women is a waste (of time). If men want to win, they must use their masculinity to prove that wives have to bow down to their husbands. [...]. Seksutha kissed her. Not with the passion like before, but with the emotion fueled by the desire to win. He touched her. His hot hands rubbed on her skin all over her body which aroused himself and her at the same time. The fire of anger from a moment ago had turned into the fire of desire. After that, he meant to make her realize that women have a soft spot and would bow down to men just like what we have known for a long time.”
(W. Winitchaikoon, 2013, p. 446-447)

In this action of Seksutha, he used sexual drive to declare victory over his wife which reflects on the sex culture that husbands have rights on their wives’ bodies. Men also have the freedom to express that belief. This way of thinking makes husbands think that they are winners and their wives will always bow down to them. Certain traditions shape the power dynamics and often make one gender the ‘loser’ in a fight or an argument, undoubtedly. Women seem to have less power than men in terms of sex.

When the marriage is over, widowers cannot dodge the impact of life. Contemporary Thai novels present these women as protagonists who fight against the prejudice of some groups of people who believe that living alone without a husband makes women lonely. Because these women had husbands in the past, they are not seen as pure as before and often face difficulties finding a new man. This theory is presented through the life of Nuandtong whose brother in law felt as follow:

“Are you lonely? I am also lonely. Ever since Pao had left me (or passed away), I have not had anyone. Dating anyone else is not the same as with Pao. I miss Pao and I want the same family.”

“Rin, enough. I am going to sleep.”
Nuandtong cut the conversation, but she did not step away. Her brother-in-law grabbed her by the arms.

“Hey! Rin! Let me go. Are you crazy? I told you to release (your hands).”
“Don’t pretend to play hard to get. I see it in your eyes that you are also lonely, otherwise you would not have gone out with that guy. I tell something (as a charity). Handsome men like that would never commit with a woman like you. It is just for fun and to say away from loneliness. I can really help you.”

(Duangdtawan, 2008, p. 136-137)

From the content above, the man asked the main character if she felt lonely. This shows that he thinks widowers or divorcées are lonely. He also does not believe that someone would want to commit to her because these women can only be good for a good time and fun. Moreover, because she was pregnant without a husband, she is seen as a less valuable woman because of the past.

The same thing happened to Pornthida who is a protagonist in Khakhonghuajai. As a widower, she thinks that it is harder to begin new love because most men do not want to marry a widower. She expressed:

“I am not closing (my) opportunity. But, being a widower is harder than a (martially) single woman. When someone wants to come into my life, I take more time to assess his commitment. I won’t come in thinking that I am easier than those girls.”

(Kingchad, 2011, p.37)

The attitude of Pornthida expressed above reflects on how widowers or divorcées think of themselves and towards the new love. They feel the obstacles to start a new love and they must carry themselves in a way that would not be gossiped by the town. It is hard finding someone who would commit and love them because men often think that these women are easy and lonely.

Moreover, wives often face sexual abuse and domestic violence from their husbands which eventually lead to a divorce. Contemporary Thai novels present this issue of society and display women as the victims of rape and prostitution. For instance, Pattama, adopted by her two uncles, has been a rape victim since the age of 12.

“...my uncle started to rape my mother. I was sleeping in the same bed as her. I saw...but I did not know how to help.”

“After a while he got bored of my mother and turned his attention towards me. My mother tried to help by pulling me back, but he slapped my mother so hard she hit the wall...”

Her face seemed lifeless as if she had a mask on. Her eyes remained almost closed as if she did not want to see or recall the images from the past. “when the older uncle could do it, the other one (had the audacity to do/) did as well.”

(Kanokreka, 2004, p. 37)

Poverty and vulnerability of women made Pattama and her mother become rape victims to her uncles. This story reflects on the dark side of rape culture and how men view women as sexual objects. Her neighbors knew what happened. Instead of helping, they offered to be her sex clients in an exchange for food. Her mother could not take it anymore and decided to take her own life.

“Did anyone help?”
“The little kids made fun of me. The adults asked if I would go for 10 or 20 Baht. Chicken and rice cost only 15 Baht and I could buy that for my mother. The remaining 5 baht would be enough for noodles for me.”

Pattama smiled, but her eyes reflected pain.

“Then my mother found out...” she whispered and added “I left with my neighbor and on the way back, someone dragged my mother out of the canal...that day I bought duck and rice for her...”

Pattama looked down on her hands, making a fist and releasing it. The same hands that hold her destiny. There was nothing those hands could do to bring her mother back to life.

(Kanokreka, 2004, p. 37)

Pattama’s life is destroyed because she has been molested as such a young age which led to prostitutions. She made herself a sex product for anyone to buy devaluing herself as a woman and human. Another character who suffered the same trauma is Fa. She got raped by her cousin when she started to hit puberty. She did not tell anyone because the man is trusted by her mother. The man’s name is Tachian. He described her look as follow:

“Your eyes are soft. Your skin is smooth. Your face, nose, mouth and eyes are still showing youth (as a child). Even though your arms and legs started to grow longer, your body still shadows a young girl.”

(Piyaporn Sakkasem, 2002, p. 286)

The content above shows how children can be a target for sexual abuse. With her innocence, she suffered molestation and rape for years. This experience affects her childhood memory and she has phobia neurosis or the fear of having sexual intercourse. Even though times flew by and she is now married. She still has not been able to sleep with her husband as mentioned below:

“... the memory attacked her just like a high voltage would. The muscular body of Krit is not him anymore, but it is a demon. This demon has a taller body than her head. It might have horns, fangs and animal fur. These features poke and stab her soft body without any empathy. It will kill her. In fact, it has already killed her many times on many occasions. [...] Every expression is beyond mind control. It has a violent force of fear and instinct. She startled and screamed...don’t! Don’t!” She sprang herself to the other side of the bed and covered herself with a blanket. She wrapped it around her body to bury herself. Her eyes were wet with tears...

(Piyaporn Sakkasem, 2002, p. 205-206)

From the experience told above, the character feels ashamed and disgusted. She wanted to take her own life many times because she did not think that she deserved to be with Krit, her husband. Virginity and purity define the value of women. In this case, she felt that she could not do her job completely as a good wife.

From the study of marginalization of widowers and divorcees in contemporary Thai novels, the researchers found that the attitude towards these women is heavily influenced by patriarchy in Thai society. This ruling gives values and power to men and forces women to behave well. Women are expected to save
their virginity for their husbands only, on the other hand, men are allowed to do whatever they want sexually. Women are seen as sexual objects and vulnerable which reflects on how society takes away power from women and place them at the bottom of the hierarchy. In this belief, women are expected to please men. Wankaw (2003, p.12) believes that being called the marginal or marginalized can devalue someone’s identity from society because the power is usually at the center.

Summary

We believe that literature is part of the society used to communicate and represent the construction of truths. It presents meanings and truths of life in society. The chosen contemporary Thai novels with protagonists that are widowers and divorcees reflect the attitude and identity of these women in society in the world of literature which often reflect the real world. Even though literature often repeats factual events, it often presents only a small fraction of the whole society. Novels is a process of literary. Facts and meanings completely depend on the author’s way of thinking and visions which the members of society cannot ignore. Studying these protagonists and their true meanings and values as human challenge the mainstream way of thinking and belief by most Thai society.

References


Mistresses in Contemporary Thai Novels: Representations of Marginalized Women in Thai Society

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ABSTRACT
This article aims to study the representations of mistresses in eight contemporary Thai novels by using qualitative research methodology within the framework of representations. The result showed that the mistresses were not accepted by the society because their status and role in the story contradicts social norms in three issues. 1 (Thailand allows only monogamous unions by law, therefore a mistress, an extramarital sexual partner with a married man, does not have the same legal advantages as the legally bonded wife. A mistress and their outside-marriage children cannot inherit property from the man. 2 (Being a mistress in the predominantly Buddhist society comes with an identity of someone who has wrong morality. 3 (Thai society is conservative, especially when it comes to sexual relationships. A well-behaved woman would not perform premarital sex or commit adultery to somebody else’s husband, because such actions can destroy family’s reputation. Consequently, mistresses are not accepted in the society. The social norms influence marriage laws casting mistresses away from obtaining legal status. In addition, religious beliefs and sexual ideology of Thai society forbid women to become a mistress and anyone who commits such adultery is not accepted and viewed as a bad person by the society.

Keywords: mistress, characters, representations, contemporary Thai novels

Introduction
Most people react negatively to the word ‘mistress’ because its characteristics contradicts the social norms. Mistresses are viewed by the society to have the opposite behaviors of what society expects of them; women should preserve the purity of their bodies, have one love and be a good housewife. Moreover, the social value of monogamy has been around Thai society for a long time resulting in contempt towards anyone who goes against the grain such as mistresses.

In the past, ‘mistress’ had different social status and roles to the modern world. The attitude towards mistresses or polygamy was quite neutral. Thikhamporn Odthon (2001) mentions that historical evidences from the Ayutthaya Kingdom era suggested that King Narai’s diplomat had 22 wives. The explanation for his action of having multiple wives to be acceptable was that the tradition back then for men was to have as many wives as they desired. The more wives they had, the merrier their lives would be. Sopit Soommat (2013) believes in that such norm was practiced because it was a patriarchal society. Men had more power and rights than women due to traditions and social values. Women were followers and had only one duty which was to reproduce children.
Supawan Chanpiboon (2001) mentioned that ever since Thailand had gone through chances in governance, the country had announced the law reinforcing monogamy. In 1935, the government had passed a regulation for monogamous-union marriage. The regulation clearly stated the prohibition of marrying somebody else while being currently married. If a man legally marries more than one time without legally divorcing his previous wife, that man is subjected to losing rights to inherit shared property. The children will have rights to inherit property only when the parents are legally bonded. This law pushes mistresses further into the darker corner of society because they do not have rights to the man’s property and their children also suffer the consequences.

Even though the role and status of mistresses differs from the past, mistresses come in different forms as could be observed through the variety of names such as กิ๊ก [kik] for secret lover, มีบุญกุศล [mia karp] for secret wife, คู่นอน [koo nən] for sexual partner, and เด็กบ๊บ [dēk bǒp] or เด็กเสี่ย [dēk səi] for sugar baby. The world of a mistress emerges from reality to literature. Most novels frankly display characters who are mistresses, especially about sexual expressions, as women who face challenges in the society. The researcher noticed that after the economy crisis in 1997, there has been more freedom for literature which reflects on discourses about the environment, human rights, equality, the disadvantaged, and the marginalized, etc. These new waves of literature challenge the main and traditional discourses which also leads to the new discourse on women.

After a careful study of related literatures, I found that contemporary Thai novels present mistresses with new shades of lights bringing more life and dimensions to the character. Even though it still seems that these women try to ‘steal’ other people’s husbands or destroy their family, the authors present more diversity of background of these women. It can be observed that these mistresses have a wider range of occupations, education, family background, attitude towards life and the perspective on love. The diversity of these topics adds more dimensions to the character making them seem more realistic. In this article, I will explore the mistresses from 8 stories as follow: Doksomsithong, Tamlompliw, Praisanithamlon, Juddubnaiduandtawon, Wanprachan, Mayachimplee, Wimanplueng, and Mandokngiw.

**Representation of mistresses in contemporary Thai novels**

Representation is a way of thinking which is very important for the process of production or a construction of meanings of things through language. Representation is a construction of new meanings through the structure of languages to present and paint pictures of something that could be perceived by the society. Stuart Hall, a British cultural theorist, developed the concept of representation. Hall (1997; as cited in Patchanouch Kruacharuen, 2014) stated that representation is a product of images’ meanings from the heart of the people and it has language as the medium linking the relationship between things, concepts and signs. The relationship of these elements is the core of giving meanings to things of the real world no matter what they are such as human, events, or even abstract thinking.

Giving meanings to something can create pictures which can be perceived by everyone in the society. The process has three elements: the intention of messengers, the meaning, and the relationship between the objects and presented meanings for remembering. There cannot be a missing element to achieve the process of representation.

I had studied the concept of representation and understood that in order to study representation, one must consider the meaning of the representative’s construction and the hidden truth just like when we think about mistresses. I had to carefully analyze what the authors meant when they created these
characters who became mistresses, what was the meaning behind the construction and the hidden truth from the society through the scope of the authors. The result of the careful analysis suggested that mistresses are not accepted in Thai society because of the monogamous marriage law, the religious practice, and social norms regarding sexual ideology. If anyone does not comply with these rules, then the society will most likely not accept them.

The character of a mistress (illegal wife)

In the past, being a mistress was not quite a taboo as today. It was a common practice for men to have mistresses. The more wives they had, the more powerful they seemed to the society. Chadchai Akkarawiboon (2001) stated that the evidences from the pasted pointed towards more acceptance of having a mistress than the present. For instance, The First Thai Enacted Law supported three statuses of wife as follow: the main wife, the mistress and the slave wife. In 1932, the Civil and Commercial Code Section 1452 provided that “married men or women cannot marry somebody else” which automatically made being or having mistresses illegal.

In the modern world, Thai families have changed as part of the influence of the western world bringing in monogamy as the standard and norms of society to practice. The status of a mistress is not acceptable as mentioned in the novel Mayachimpleethat talked about Nattasinee, cheated with her sister’s husband, with the man who is ready to sacrifice everything so that she could become the main and legal wife (Punthipa, 2015, p. 292):

“Her parents, grandmother, including the princess grandmother will have to put a box over their heads when they find out that their son or grand-son-in-law cheated on his wife with another woman from the same family. This big news will be spread out as soon as Wathit announces that I am the wife he loves the most. He is ready to sacrifice everything including getting divorced with the main wife like you! Just to marry me…”

The content above reflects on the legal status of the mistress that she would like to improve her status to a legal wife according to law. She wants to be accepted and not hidden from the society so she can fully proud without considering whether her actions would hurt other people’s feelings or not.

“I want to sign the marriage certificate with him. I want to be his legal wife for my unborn child. I want readiness for my child. Very simple. I don’t want my kid to face the same conditions as I am. I am ready to stop everything. Just one wish for her to divorce Wathit and break up with him permanently. Only Wathit, can you do it?”

(Punthipa, 2015, p. 353)

The content above reflects the status of the mistress and her unborn child and their status in the legal system. For this reason, she has the audacity to do anything to sign the marriage certificate with this man without conserving the consequences and impacts on the main wife’s family. This behavior is against the social norms and standard and often seen as an embarrassment. One of the lines wrote:

“...you are not ashamed, Eye, that you are stealing your sister’s husband...” the owner of the name burst her laughter immediately, just to shut it a second after and glanced a fierce pair of eyes back.

(Punthipa, 2015, p. 289)

From the content above, this reflects that the status of a woman who is a mistress is really discriminated by the society and seen as a bad person, especially when she is having the relationship with
her brother-in-law. Her actions made her receive the comment as having no shame - sarcastically. In the case of Praopoyom from the novel Wimanplueng, she is a famous person, but she is known as a mistress with a bad reputation because she is trying to date another person’s husband as written in Champalao (2015, p. 269):

“...you are not in heaven of angels. You are in the heaven of red cotton tree flowers. The castle of fire. Remember that. You are in the red-cotton-tree-flower heaven! Mistresses! Like to steal somebody else’s husband...”

The content above reflects that being a mistress is not acceptable for Thai society no matter how famous you are. Even though you have love for the man, but the love is against the tradition of the society. This love can cause pain, as well. The feeling of Daliya from the novel Wanprachan as written:

“I walk calmly into the kitchen. Trust the open-mindedness of the woman as much as the love of Tun. I love him, even though he has a wife. He also loves his wife. It is painful, but it is the truth I need to face.”

(Uruda Kowin, 2014, p. 236)

Daliya feels pain for being a mistress and loving another woman’s husband. Even though the main wife does not sue her, she still feels terrible and embarrassed.

The examples above show that marriage certificate is an important piece of legal evidence to state and confirm the union between husband and wife completely. The legal union comes with benefits to the children in the future. Even though, usually whoever comes first deserves that benefits, laws state clearly that there must be a clear arrangement. The law will not protect marriage without a proper certificate. According to the Civil and Commercial Code, Section 1452 from the year of 1932 provided that men or women cannot marry as long as either one of them has a legal spouse. Even though there is no legal punishment for being a mistress, but these women still suffer from condemnation of society.

Not only do mistresses not have legal rights to the man, they also face condemnation from the society because mistresses are seen as misbehaving women against the good morals of Thai society. Mistresses commit sexual misconduct according to Buddhist teaching’s third precepts as appeared in the contemporary Thai novel named Praisanithamlon. The novel has a character named Nuntinee or Oye who is a mistress because of the power of love. She knows that her action is against the Buddhist beliefs, but she cannot help herself:

“...dear lord, this is wrong and against article 3 for morality. My grandma gave me an order, taught me, begged and forced me to not break this rule. Even if I had to stay until my death, she told me to hold it. Dear lord, I cannot take it anymore. The general is so handsome and elegant. He speaks beautifully and he is a good person. I am angry that I cannot stop myself. If I stay here, I will probably run to him. I am that crazy. I must have lost my halo to serve you...”

(Kanjana Nakkanun, 2011, p. 99-100)

With her words, Oye reflects on the Thai society’s belief that being a mistress to someone’s husband is against the religious beliefs. However, she is deeply and enslaved to love. Lust and desire take a toll on her.

“...my grandma ordered me to pray every night and to follow article 3. She told me to keep it because it had already destroyed my family. I don’t want to steal anybody’s husband, but why does my heart disobey? It is naughty...”
(Kanjana Nakkanun, 2011, p. 116-117)

From the content above, Oye feels ashamed of herself because her grandmother taught her to follow the 5 basic articles of what a good Buddhist should do. However, she fell in love with the general. She is aware that she should not try to take somebody else’s husband because she is human with more self-control than animals. She believes in karma and that when mistresses die, they must climb a thorny tree in hell as follow:

“...the only things that will follow you (after death) are good and bad deeds. If you take somebody else’s husband, you will burn in hell and will not reincarnate...”

(Kanjana Nakkanun, 2011, p. 145)

Similarly, Mandoknįjiw also mentions article 3 in Buddhism as follows:

“...even if it is sin, I have already gotten myself deep in this. The tree has thorns, but maybe its flowers could be the easy part to climb...”

(Absara, 2015, p. 197)

From the content above, we can note the difference between these characters who are or almost mistresses. They know that their actions will be condemned by society, but they could not resist. This is when the role of religious beliefs can show their powerful influence on people because they set a clear boundary between good and bad actions. Mistresses fall into the bad behavior side of this line and the punishment is to be in hell after death. The role of good deeds is as an indicator of women’s worth.

Mistresses - the women who do not preserve their purity

Considering the standard of what a relationship between men and women should look like, one can observe that the social standard often places an emphasis on the norms of how women should preserve their purity; also, how having a relationship with someone else’s husband can destroy the family’s reputation. The social standard and norms reflect on the ideology of sexual expression and love between women and men. The characters of mistresses in the contemporary Thai novels can present that standard. A good example for this is about Daliya and her love for Toon in Wanprachan as said:

“Do you think I have an option? It is true that I can choose, but I love Toon. I do not want to be his wife. I only want love and spend some time with him. Also, I am selfish. I made excuses to keep the impossible relationship afloat. I made it possible to stand together without our full feet (on the ledge).”

(Uruda Kowin, 2014, p. 166-167)

The way Daliya expressed that she did not want to be his wife, but she would love to only have some time with him reflects on the love that is against social norms. She knows that he has a wife, and she did not want to replace her. This is also against Thai society’s norms.

Moreover, there are characters of mistresses in contemporary Thai novels that represent how women use sex appeals to shift their social status. These women would use sexual attractions to have men financially support them to have a comfortable life. A good example is from the novel Mandoknįjiw. The character named Lila just graduated from a university. She used to be a model and sugar baby.

“...I will reward you for being cute and taking care of me. Spend it on shopping, my sweet girl...” Jiang, the sugar daddy, pulled out a ban of thousand Baht bills.
“...take all of this. I want to give (to you) ...” Lila glanced at the big brick of cash before smiling and took the money. She bowed at his chest. She smiled again, but she laughed at his stupidity inside.

“...always stupid. In my hood, we would call him blindingly stupid...”

(Absara, 2015, p. 242)

Lila’s behaviors represented a group of women in the society who choose to be a mistress for the sake of wealth and financial stability. They would use their sexual appeals to capture men’s attention and money. Similarly, a story about a woman named Reya from Doksomsithong who involves herself with a married man in an exchange for comfort in life and her dream career as a flight attendant. She seduced Sinthorn to fall in love with her and give up everything for her as written below:

“The main man whom Reya grabs tightly (relies on) is Sinthorn [...] The only thing she knows about him is that he is married to Denchan, a daughter of a rural village’s headman, with two children. [...] The only important person to Reya is Sinthorn. She does not regret sleeping with him to reach her dreams. The benefit (of this relationship) is enormous. Another thing is, Reya is a brand-new angel (flight attendant). Her tail and wings are not strong enough for solo flights. She still needs to rely on Sinthorn a lot.”

(Thaitao Sutjarit, 2010, p. 93-94)

According to the content above, Reya’s behavior to use her sexual appeals to help achieve her dreams is another indication of how this love could be against the grain of social norms. She knows that he already has a wife and children. Her behavior is an extreme opposite of being a well-behaved woman.

Moreover, considering the ideology of preserving purity of women’s bodies, these mistresses do the opposite by wearing sexy outfits. They have a lot of confidence to wear less clothes than normal people in both leisure and business settings. An example of someone with the behavior is Ployras from Tamlompliw. She is a singer. Her story is as follows:

“...tonight, Ployras showed up with an outfit that shocked her mother, grandmother and aunt. As a result, Praw could hardly hold her laughter”

“Her outfit might as well be two pieces of cloths; they do not differ to bikinis. Except there is a long blue ruffle hanging down from her hips to her ankles, following the movements of her body but it does not cover anything. Specially, when the material is tight as if it were just paint. This really is seductive.”

(W. Wanitchakoon, 2005, p. 36)

The story above reflects on the outfit of Ployras. This could be because of her singing career and her personal taste in clothes showing that she is a very open person with lots of self-esteem. This is very against the social norms.

From the findings of the study, it could be concluded that the reasons why these mistresses are not accepted by Thai society is because of the marriage law allowing only monogamous unions which makes mistresses have no rights to the man and his property. The moral norms of Thai Buddhism also only support the expressions of love that do not break the rule of the five precepts. Therefore, being a mistress is the same as committing moral misconducts. The society, itself, also has its own standards and moral code of which strictly expect women to behave well and preserve their purity. Whomever does not follow the social agreements will be punished by society. For these very reasons, the mistresses from these novels are not accepted and punished by society.
Conclusion

The characters of mistresses from contemporary Thai novels reflect on the attitude of the society of which these women live in. The society condemns and discriminates these women for dating a married man. Those women, enslaved by materialism, would trade sex for materials that would make their lives more comfortable. In a way, these women also sacrifice their dignity to achieve their goals. I found that the attitude towards these women come from the moral codes and social norms which could be concluded into three main reasons: law, religion and the morality of love. Firstly, Thai marriage laws only permit monogamous unions between men and women. Even though there is no punishment for being a mistress, these women still would not have any legal rights to the man or their property. The society often punishes the mistresses without relying on laws. The second reason is religions. Living in a predominantly Buddhist society, these mistresses are often condemned as someone without morals. They are viewed as destroyers of families. The last reason is that the standard of love in society often relates to women’s purity and its preservation. Mistresses with sexual relations with other women’s husbands are undoubtedly seen as loose women. For these reasons, mistresses are not accepted in Thai society.

References
Comparison of Chemical Composition of Lateritic Soil for Dyed Textile from Loei, Buriram, Mukdahan and Kalasin

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ABSTRACT

In this study, the compositions of lateritic soil used as textile dyers collected from four textile dying communities in four different provinces in Northeastern Thailand, namely Loei, Buriram, Mukdahan and Kalasin, were characterized using an energy dispersive x-ray spectrometer (EDX). Samples were ground and calcined to calculate the loss on ignition at 1000°C for 1 hour. Calcined powder was characterized by an EDX. The chemical composition of lateritic soil from Loei appeared to have a significantly higher amount of TiO$_2$ than that from the other sites and lateritic soil from Mukdahan appeared to have a significantly higher Fe$_2$O$_3$ than that from the other sites which TiO$_2$ and Fe$_2$O$_3$ were high NIR reflection and common pigment to use for dye textiles. The other compositions of all samples were similar.

Keywords: Lateritic soil, Chemical composition, Energy dispersive x-ray

Introduction

Lateritic soils are highly weathered and altered residual soils formed by the in-situ weathering and decomposition of parent rocks under tropical and subtropical climatic conditions (A. M. Mustapha, M. Alhassan, 2012). This weathering process primarily involves the continuous chemical alteration of minerals, the release of iron and aluminum oxides, and the removal of bases and silica in the rocks. The geotechnical properties of lateritic soils are influenced by climate, drainage, geology, the nature of the parent rock and the degree of weathering or linearization of the parent rock. These factors also differentiate laterite from other soils that are developed in the temperate or cold regions (Aginam C. H, Nwakaire Chidozie, Nwajuaku A, 2015). Some lateritic soils are thought to have been transported from their place of origin by wind or other action, but most of those with which is used for road construction are likely to have been formed in situ. Lateritic soils contribute to the general economy of the tropical and subtropical regions where they are in abundance because, they are widely utilized in civil engineering works as construction materials for roads,
houses, landfill for foundations, embankment dams, etc (Hossain, K. M. A., & Mol, L., 2015) in the country communities of Thailand. They used lateritic soil to dyed textiles, however they only used laterite as a dye to produce the color. They did not use other function of lateritic soil such as optical properties to apply in textiles.

In this study, we characterized the lateritic soil from 4 areas in north-eastern of Thailand (Loei, Buriram, Mukdahan and Kalasin) by chemical analysis (energy dispersive x-ray, EDX) to compare the chemical compositions to guide the development of lateritic soil for textile’s dying in term of infrared refractive function.

Research Objectives

This research consisted of two objectives:

2.1 To characterize the chemical compositions of lateritic soil from Loei, Buriram, Mukdahan and Kalasin by using an energy dispersive x-ray.

2.2 To compare the chemical compositions of lateritic soil from 4 area and select to develop for textile’s dying in term of infrared refractive function.

Research Methodology

![Flow chart of sample preparation to characterize by energy dispersive x-ray (EDX)](image)

Fig. 1 Flow chart of sample preparation to characterize by energy dispersive x-ray (EDX)
The lateritic soils from Nonpasang Phakao district Loei province, Charernsuk Chalermprikat district Buriram province, Wanghai Nonsung district Mukdahan province and Kampai Muang district Kalasin province were dried in oven at temperature 100°C for 24 hours and then grinded by ring mill for 30 minutes. The grinded powders were weighed and put in alumina crucibles to calcine in electrical furnace at 1000°C for 1 hour. Calcined powders were weighed and calculated loss on ignition then grinded again by ring mill. The grinded powders were characterized using an energy dispersive x-ray spectrometer (EDX) to classify and compared the chemical composition of lateritic soil from 4 area in north-easern of Thailand.

Research Results

1. Chemical composition of lateritic soil by EDX

Chemical compositions of lateritic soil from Loei were characterized by EDX, shown in Fig. 2 and table 1. The results illustrated the major composition as SiO$_2$, Al$_2$O$_3$ and Fe$_2$O$_3$ accounted 44.81, 31.28 and 11.17 % respectively. TiO$_2$ was a minor composition approximate 3.01% and loss on ignitions which are organic compound and carbonate approximate 9.73%. TiO$_2$ is common to use for pigment and high reflective index which has a good reflect electromagnetic wave.

![Fig. 2 SEM micrograph (a) and EDX analysis results of lateritic soil from Loei](image)

<table>
<thead>
<tr>
<th>Chemical Composition</th>
<th>Amount (%)</th>
</tr>
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<tbody>
<tr>
<td>SiO$_2$</td>
<td>44.81</td>
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<tr>
<td>Al$_2$O$_3$</td>
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<td>Fe$_2$O$_3$</td>
<td>11.17</td>
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<td>TiO$_2$</td>
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<td>Loss on ignition (LOI)</td>
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<tr>
<td>SUM</td>
<td>100</td>
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</table>
Chemical compositions of lateritic soil from Buriram were characterized by EDX, shown in Fig. 3 and table 2. The chemical composition composed of SiO₂, Al₂O₃, Fe₂O₃ and TiO₂ for 57.80, 18.57, 7.74 and 1.08 % respectively. Loss on ignition was about 14.81 %.

![Fig. 3 SEM micrograph (a) and EDX analysis results of lateritic soil from Buriram](image)

**Table 2: Chemical composition of lateritic soil from Buriram**

<table>
<thead>
<tr>
<th>Chemical Composition</th>
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<td>SiO₂</td>
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<tr>
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<tr>
<td>Fe₂O₃</td>
<td>7.74</td>
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<td>1.08</td>
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<td>Loss on ignition (LOI)</td>
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<tr>
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<td>100</td>
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</table>

Chemical compositions of lateritic soil from Mukdahan were characterized by EDX, shown in Fig. 4 and table 3. The chemical composition composed of Fe₂O₃, SiO₂, Al₂O₃, K₂O, TiO₂ and MgO for 43.12, 34.94, 13.74, 1.48, 1.05 and 0.63 % respectively. Loss on ignition was about 5.31 %. Fe₂O₃ illustrate significant higher than other samples which collected from different area. Fe₂O₃ has high reflective index and good reflect electromagnetic wave.
Table 3: Chemical composition of lateritic soil from Mukdahan

<table>
<thead>
<tr>
<th>Chemical Composition</th>
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</tr>
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<tbody>
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<tr>
<td>Al$_2$O$_3$</td>
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<tr>
<td>K$_2$O</td>
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<tr>
<td>MgO</td>
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<tr>
<td>Loss on ignition (LOI)</td>
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<tr>
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</table>

Chemical compositions of lateritic soil from Kalasin were characterized by EDX, shown in Fig. 5 and table 4. The chemical composition composed of SiO$_2$, Al$_2$O$_3$, Fe$_2$O$_3$, K$_2$O, CaO, MgO and TiO$_2$ for 53.65, 14.21, 7.67, 3.62, 3.25, 2.05 and 0.74 % respectively. Loss on ignition was about 5.31 %.
Table 4: Chemical composition of lateritic soil from Kalasin

<table>
<thead>
<tr>
<th>Chemical Composition</th>
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<td>K$_2$O</td>
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<td>CaO</td>
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<td>MgO</td>
<td>2.05</td>
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<tr>
<td>Loss on ignition (LOI)</td>
<td>14.81</td>
</tr>
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<td>SUM</td>
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</table>

2. Comparison of chemical composition of lateritic soil.

Chemical compositions of all sites were shown similar the major compound. The sample from Loei site was shown significant higher TiO$_2$ than other site. Kalasin and Buriram sites were shown higher SiO$_2$. The lateritic soil from Mukadahan site was shown highest Fe$_2$O$_3$ which is not stable. The color will be changed when Fe$^{3+}$ transform to Fe$^{2+}$ when exposed in high humidity environment. This is a problem for dying. We have to solve this problem by substitute of Fe into structure of Al$_2$O$_3$ which more stable than Fe$_2$O$_3$. The next experiment must focus on the amount of Al$_2$O$_3$ and Fe$_2$O$_3$. So that the ratio of Fe$_2$O$_3$ and Al$_2$O$_3$ is not more than 1 which lateritic soils from Loei, Buriram and Kalasin site shown this result but Kalasin site shown high SiO$_2$. SiO$_2$ particles were bigger than other substance in lateritic soils and difficult to grind. The ratios of major and minor compositions were shown in table 5. The lateritic soils from Loei and Mukdahan will be selected to do next experiment.

Table 5: The ratio of major composition and minor composition

<table>
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<tr>
<th>Site</th>
<th>Al$_2$O$_3$/SiO$_2$</th>
<th>Fe$_2$O$_3$/SiO$_2$</th>
<th>TiO$_2$/SiO$_2$</th>
<th>Fe$_2$O$_3$/Al$_2$O$_3$</th>
<th>TiO$_2$/Al$_2$O$_3$</th>
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<tr>
<td>Loei</td>
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<td>0.07</td>
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<td>Buriram</td>
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<td>0.13</td>
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<td>0.42</td>
<td>0.06</td>
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<td>Mukdahan</td>
<td>0.29</td>
<td>1.23</td>
<td>0.03</td>
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<td>0.08</td>
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<tr>
<td>Kalasin</td>
<td>0.26</td>
<td>0.14</td>
<td>0.01</td>
<td>0.54</td>
<td>0.05</td>
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</table>

Conclusion

Chemical analysis of lateritic soils from 4 sites in north-eastern of Thailand by EDX can be conclude as follow:

Chemical compositions of lateritic soil from Loei site were shown the significant TiO$_2$, Buriram and Kalasin sites shown higher SiO$_2$ and Mukdahan site shown higher Fe$_2$O$_3$. So that lateritic soils from Loei and Mukdahan are interest to develop for IR reflective pigment.
References


NO Adsorption on Pristine and Transition Metal Doped Single Wall Carbon Nanotubes: A DFT Study

Preecha Kansawai*
Tanawat Somtua**
Banchob Wanno***
Chanukorn Tabtimsai****

ABSTRACT

Single wall carbon nanotube (SWCNT) has exceptional adsorption and detection properties due to large surface area and excellent in electronic property. The SWCNT has been used in applications related to gas adsorption and sensor. The performance of NO molecule adsorption and detection via modified SWCNT adsorbent was investigated using density functional theory. Here, transition metals (TMs) including Os, Ir, Pt, and Au were doped onto SWCNT surface to increase the adsorption and detection efficiency. The NO molecule was used to study the adsorption capability of TM–doped SWCNTs. The results reveal that the NO adsorption strengths to the SWCNT surface are improved by TM doping. Upon adsorption of NO molecule on TM–doped SWCNTs, significant charges are transferred from the TM–doped SWCNTs to the NO molecule. Our study suggests that the TM–doped SWCNTs–based sensor has a high potential for NO detection due to the significant conductance changes. This fact made TM–doped SWCNTs have the high adsorption and detection to NO molecules.

Keywords: NO gas, Carbon nanotube, DFT

Introduction

The use of nanomaterials in nanotechnology applications requires an understanding of their electronic and structural properties. Gas molecular adsorption in nanostructures is an important issue for both fundamental research and technical application. The adsorption of gas molecules on nanotubes has the considerable potential for applications in toxic gas management or sensor. The need for miniaturized sensors with high sensitivity and selectivity has motivated the scientists to search for new gas sensing systems based on novel nanomaterials. The single wall carbon nanotube (SWCNT) is one of the most widely explored nanostructures for the scientific community. The SWCNT was first synthesized by Iijima (Iijima & Ichihashi, 1993). Owing to high surface area, excellent structural and electronic properties and chemical functionalization by doping, SWCNTs are promising materials for gas adsorption and sensor (Bertoni, Calmels & Micron, 2006; Nizam, et al., 2011; Dresselhaus, Dresselhaus & Avouris, 2001; Ababtram & Léonard, 2006).

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**** Assistant Professor, Rajabhat Maha Sarakham University.
Many of gases NH₃, PH₃, AsH₃, NO, SO₂, CO, and HCN display low adsorption and sensibility to pristine SWCNT (Tang, 2015; Xie, Huo, & Zhang, 2012). Theoretical studies have demonstrated that the gas adsorption abilities of pristine SWCNT are improved by the TM doping (Buasaeng, et al., 2017; Tang, 2015; Gautam & Jayatiss, 2015). In terms of NO molecule, NO is harmful gas molecule impact on human health and environment (Shelef, 1995). The adsorption of NO molecules on Pt–doped graphene nanosheet (Rad & Abedini, 2016: 1041–1046), V–, Cr–, Mn–, Fe–, Co– and Ni–doped boron nitride nanotubes (Xie, Huo, & Zhang, 2012) were studied and reported. The results showed that pristine graphene nanosheet or boron nitride nanotubes present a low sensitivity to NO molecule, whereas TM doping can improve the adsorption interaction.

**Purpose of study**

This research is aim to investigate the adsorption of NO molecule on TM–doped SWCNTs. We compare the ability of each TM doping on SWCNT to adsorb NO molecule based on the density functional theory (DFT) calculation. This work is expected to provide insight into the fundamentals of NO adsorption on TM–doped carbon–based adsorbent and sensing materials.

**Research Methodology**

An *Ab initio* calculation was performed using Gaussian 09 program package (Frisch, 2009) to calculate structures, energies and electronic properties of the complexes in gas phase. Computations were performed using the DFT with the Lee–Yang–Parr correlation functional (B3LYP) and the Los Alamos LanL2DZ split–valence basis set (Becke, 1988; Becke, 1993; Lee, Yang & Parr, 1988; Hay & Wadt, 1985; Wadt & Hay, 1985). The modeled structures of Os, Ir, Pt, or Au atom doping on (5,5) armchair SWCNT saturated by hydrogen atoms and their adsorptions with NO molecule were selected for adsorption behavior investigation. Then hydrogenated pristine SWCNT has 90 carbon and 20 hydrogen atoms. For the TM atoms doping onto SWCNT, one carbon atom at the center of the SWCNT was replaced with the TM atom. The adsorbed NO gas was set by placing over the TM atom in two configurations (O or N atom of NO molecule pointing to TM atom).

In the case of the electronic properties, the highest occupied molecular orbital energies ($E_{\text{HOMO}}$), the lowest unoccupied molecular orbital energies ($E_{\text{LUMO}}$), the energy gaps ($E_{\text{g}}$) referred to the energy difference between HOMO and LUMO orbitals were computed and analyzed. The partial charge transfers (PCTs) during gas adsorptions were defined as a change in gas charges during the adsorption process using the natural bond orbital (NBO) charge analysis. The electronic density of states (DOSs) of all systems were investigated and plotted by the GaussSum 2.1.4 program. The molecular graphics of all related structures were generated using the MOLEKEL 4.3 program.

The adsorption energies ($E_{\text{ads}}$) of NO molecule on the SWCNTs were determined through the following equation:

$$E_{\text{ads}} = E_{\text{NO/SWCNT}} - E_{\text{SWCNT}} - E_{\text{NO}}$$

where $E_{\text{NO/SWCNT}}$ was the total energies of NO adsorption on pristine or TM–doped SWCNT, $E_{\text{SWCNT}}$ was the total energies of pristine or TM–doped SWCNT and $E_{\text{NO}}$ was the total energies of the isolated NO molecule.
Results and Discussion

For NO molecule adsorption on pristine, Os–, Ir–, Pt–, and Au–doped SWCNTs, we choose the doping site as the adsorption site. There are two initial configurations for NO molecule to be considered: one is the N atom directed towards the SWCNTs, and the other one is the O atom directed towards the SWCNTs. After optimization, the most stable configurations for NO adsorption on pristine SWCNT are presented in Figure 1. As illustrated in Table 1, it can be seen that NO is located at 3.222 and 3.395 Å above the pristine SWCNT by N and O atoms pointing to tubes, respectively. The N–O bonds of NO molecule adsorption on pristine SWCNT are 1.198 and 1.224 Å for N and O atoms pointing to tubes, respectively. The optimization structures of NO molecule adsorptions on Os–, Ir–, Pt–, and Au–doped SWCNTs are shown in Figure 2 and the geometrical structures are listed in Table 2. The results show that the distances between NO molecule and Os, Ir, Pt, and Au atom doping on SWCNT are in the range of 1.829–2.145 Å. Whereas, the N–O bonds of NO molecule adsorptions on TM–doped SWCNTs are ranking from 1.220–1.331 Å, a little longer than that of the isolated NO molecule (1.15 Å) (Hu, 2014), suggesting that adsorption process weakens the original N–O bond of NO molecule.

The calculated adsorption energies of NO adsorption on SWCNTs are listed in Table 2. The adsorption energies of NO adsorption on pristine SWCNT are equal to −1.28 and −0.12 kcal/mol for N and O atom of NO molecule pointing to tubes, respectively. It can be concluded here that NO has a poor physical adsorption on pristine SWCNT, signifying that pristine SWCNT has a poor capability to NO molecule adsorption. As illustrated in Table 2, the adsorption energies of NO molecule on TM–doped SWCNTs are exothermic reaction, except for NO molecule adsorption on Au–SWCNT by O point to tube. The adsorption energies of NO molecule on TM–doped SWCNTs are in decreasing order: NO/Os–SWCNT (−57.62 kcal/mol) > NO/Ir–SWCNT (−36.78 kcal/mol) > NO/Pt–SWCNT (−35.83 kcal/mol) > NO/Au–SWCNT (−33.98 kcal/mol) > NO/Os–SWCNT (−32.252 kcal/mol) > NO/Pt–SWCNT (−21.912 kcal/mol) > NO/Ir–SWCNT (−2.27 kcal/mol). Compared with the adsorption energy of NO molecule on pristine SWCNT, the higher values of adsorption energies indicate that the interactions between TM–SWCNT and NO molecule are stronger. Moreover, the NO adsorptions on SWCNTs by N atom of NO molecule pointing to tubes show stronger interaction than O atom.
Figure 1. B3LYP/LanL2DZ optimized structures of (a) and (b) are side and top views of pristine SWCNT, respectively, (c) and (d) are NO/SWCNT and NO/SWCNT, respectively, and (e) – (h) are plots of HOMO and LUMO density distributions of NO adsorption on pristine SWCNT. Bond distances are in Å.

Figure 2. B3LYP/LanL2DZ optimized structures of NO adsorption on pristine and TM–doped SWCNTs, (a) NO/Os–SWCNT, (b) NO/Os–SWCNT, (c) NO/Ir–SWCNT, (d) NO/Ir–SWCNT, (e) NO/Pt–SWCNT, (f) NO/Pt–SWCNT, (g) NO/Au–SWCNT, and (h) NO/Au–SWCNT. Bond distances are in Å.
SWCNTs may be a promising candidate for application in the NO sensors. Figure 3 exhibits the HOMO and band gaps have further changed due to the adsorbed NO molecule. This indicates that the TM
Comparing the NO/TM
plots of the NO adsorption on SWCNT systems are shown in Figure 3. The
NO molecule, the
pristine and TM
Table 1

<table>
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<tr>
<th>Systems</th>
<th>Bonds</th>
<th>Bond lengths (Å)</th>
<th>Bonds</th>
<th>Angles (°)</th>
<th>Adsorption distances (Å)</th>
<th>N–O distances (Å)</th>
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<tr>
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<td>1.425</td>
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</table>

To investigate the possible modification of the electronic structures of the SWCNTs by the adsorbed NO molecule, the $E_{\text{HOMO}}$, $E_{\text{LUMO}}$, $E_g$, PCT, and density of state (DOS) were analyzed. The HOMO and LUMO plots of the NO adsorption on SWCNT systems are shown in Figure 3. The $E_g$ of pristine SWCNT is 0.816 eV. Comparing the NO/TM–doped SWCNT structures with that of corresponding TM–doped SWCNT systems, the band gaps have further changed due to the adsorbed NO molecule. This indicates that the TM–doped SWCNTs may be a promising candidate for application in the NO sensors. Figure 3 exhibits the HOMO and
LUMO distributions of defined NO adsorptions on TM–doped SWCNTs, from which one can find that both orbitals are mainly located on NO molecule and TM atoms instead of the backbone of SWCNT, revealing a chemical interaction between NO molecule and TM atom. This indicates the strong hybridization between the $d$ orbital of TM atom and $p$ orbital of NO molecule. Then we make a natural bond orbital analysis to examine the partial charge transfer between NO and SWCNTs upon adsorption. As shown in Table 2, the charge transfer from NO molecule to pristine SWCNTs is only $0.002 \, \text{e}$, whereas, the charge transfer from TM–doped SWCNTs to NO molecule are in the range $0.127–0.456 \, \text{e}$. So small charge transfers between NO molecule and pristine SWCNT undergoes weak physisorption on pristine SWCNT due to van der Walls interaction. The large charge transfers between NO molecule and TM–doped SWCNTs, indicating that the interactions are strong. A similar result was reported in a previous study (Zhou, et al., 2018), which showed that graphene can also be used as a disposable sensor due to the stable physisorption of NO on graphenes.

Table 2 $E_{\text{ads}}$, $E_{\text{HOMO}}$, $E_{\text{LUMO}}$, $E_g$, and PCT of NO adsorption on pristine and TM–doped SWCNTs

<table>
<thead>
<tr>
<th>Systems</th>
<th>$E_{\text{ads}}$ (kcal/mol)</th>
<th>$E_{\text{HOMO}}$ (eV)</th>
<th>$E_{\text{LUMO}}$ (eV)</th>
<th>$E_g$ (eV)</th>
<th>PCT (e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO/SWCNT</td>
<td>$-1.28$</td>
<td>$-4.381$</td>
<td>$-3.483$</td>
<td>$0.898$</td>
<td>$0.002$</td>
</tr>
<tr>
<td>NO/Os–SWCNT</td>
<td>$-57.62$</td>
<td>$-4.381$</td>
<td>$-3.320$</td>
<td>$1.061$</td>
<td>$0.133$</td>
</tr>
<tr>
<td>NO/Ir–SWCNT</td>
<td>$-36.78$</td>
<td>$-4.463$</td>
<td>$-3.402$</td>
<td>$1.061$</td>
<td>$0.127$</td>
</tr>
<tr>
<td>NO/Pt–SWCNT</td>
<td>$-35.83$</td>
<td>$-4.490$</td>
<td>$-3.456$</td>
<td>$1.034$</td>
<td>$0.265$</td>
</tr>
<tr>
<td>NO/Au–SWCNT</td>
<td>$-33.98$</td>
<td>$-4.408$</td>
<td>$-3.429$</td>
<td>$0.979$</td>
<td>$0.231$</td>
</tr>
<tr>
<td>NO/SWCNT</td>
<td>$0.12$</td>
<td>$-4.381$</td>
<td>$-3.483$</td>
<td>$0.898$</td>
<td>$0.002$</td>
</tr>
<tr>
<td>NO/Os–SWCNT</td>
<td>$-32.52$</td>
<td>$-4.544$</td>
<td>$-3.782$</td>
<td>$0.762$</td>
<td>$0.456$</td>
</tr>
<tr>
<td>NO/Ir–SWCNT</td>
<td>$-2.27$</td>
<td>$-4.463$</td>
<td>$-3.402$</td>
<td>$1.061$</td>
<td>$0.212$</td>
</tr>
<tr>
<td>NO/Pt–SWCNT</td>
<td>$-21.12$</td>
<td>$-4.463$</td>
<td>$-3.538$</td>
<td>$0.925$</td>
<td>$0.449$</td>
</tr>
<tr>
<td>NO/Au–SWCNT</td>
<td>$2.27$</td>
<td>$-4.408$</td>
<td>$-3.429$</td>
<td>$0.979$</td>
<td>$0.231$</td>
</tr>
</tbody>
</table>
To gain deep insight into the interaction of NO molecule with pristine and TM–doped SWCNTs, the DOS are investigated (see Figure 4). From Figures 4(a) and 4(b), it can be seen that the DOS of pristine SWCNT system (red line) is slightly changed in comparison with that of NO adsorption on pristine SWCNT (black line). Considering the DOS analysis results in Figures 4(c) – 4(j), which show the large shift for the DOSs of TM–SWCNTs due to NO adsorption. The adsorption of NO makes significant influence on the DOSs of the TM–SWCNT, which corresponds to their high adsorption energies. These results demonstrate that the electronic properties of the TM–SWCNT systems can be significantly changed after NO adsorption, which makes these systems desirable candidates as NO sensors.
Figure 4. Density of states of NO adsorption on pristine and TM–doped SWCNTs, (a) NO/SWCNT, (b) NO/Os–SWCNT, (c) NO/Os–SWCNT, (d) NO/Ir–SWCNT, (e) NO/Ir–SWCNT, (f) NO/Pt–SWCNT, (g) NO/Pt–SWCNT, (h) NO/Pt–SWCNT, (i) NO/Au–SWCNT, and (j) NO/Au–SWCNT

Conclusions

Single wall carbon nanotube has exceptional adsorption and detection properties due to large surface area and excellent in electronic property. The performance of NO gas adsorption and detection via modified SWCNT adsorbent was investigated using density functional theory. Here, transition metals including Os, Ir, Pt, and Au atoms were doping onto SWCNT surfaces to increase the adsorption and detection efficiencies. The NO gas was used to study the adsorption capability of TM–doped SWCNTs. The results reveal that weak interaction between NO molecule and pristine SWCNT. After doping the SWCNT with TM atoms, the adsorption abilities of NO are significantly improved indicating that the active site is transferred from carbon atom of SWCNT to the supported TM atom of TM–doped SWCNTs. The sensitivity of TM–doped SWCNT towards detecting NO molecule was confirmed by the change of electronic property. Due to the interaction between NO and TM–doped SWCNTs, this work has presented the significance of doping Pt atom on SWCNT to act as a potential adsorbent or gas sensing materials.

Acknowledgements

The authors gratefully acknowledge the Computational Chemistry Center for Nanotechnology (CCCN), Department of Chemistry, Faculty of Science and Technology, and Research and Development Institute, Rajabhat Maha Sarakham University for the facilities provided and partial financial support.
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Effects of lumbar stabilization exercises on lumbar erector spinae muscles in vertebral compression fracture

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Nao Nakana***

ABSTRACT

In patients with acute vertebral compression fractures, to investigate whether early lumbar stabilization exercises, in addition to conventional rehabilitation, is useful to prevent atrophy of the trunk extensor muscles during hospitalization. This study included 20 patients who were hospitalized with vertebral compression fractures (76.5 ± 8.0 years). The patients were randomly assigned to 2 groups: a control group (n=10) who received conventional rehabilitation; and an intervention group (n=10), who, in addition to conventional rehabilitation, also performed lumbar stabilization exercises. Muscle Cross Sectional Area (CSA) was calculated using MRI imaging. In addition, factors that might affect changes in muscle CSA were evaluated. The study found that muscle CSA was significantly lower after discharge than at the time of admission in the control group, but was maintained or slightly increased in the intervention group. Early lumbar stabilization exercises, in addition to conventional rehabilitation, may prevent atrophy of the erector spinae muscles in patients with vertebral compression fractures during hospitalization.

Keywords: Lumbar stabilization exercise; vertebra compression fracture; cross-sectional area of the lumbar muscles

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Introduction

Vertebral compression fractures have a high incidence in elderly women, and they afflict many people (Prather et al., 2003). In addition, because vertebral compression fractures have a high rate of recurrence, secondary prevention is important. On the other hand, the importance of trunk extensor muscle strength in prevention of vertebral compression fractures was demonstrated (Sinaki et al., 2002). In general, in acute and subacute vertebral compression fractures, during motions such as turning in bed, sitting, standing, and walking, keeping the trunk in extension is important. Because motion associated with trunk forward flexion increases stress on the injured area, and pain may be enhanced (Yoshida T, Akabane Y, 2005). Therefore, to achieve motion with less pain, trunk extensor muscle strength necessary to keep the trunk extended is important.

Recently, to prevent and treat low back pain, lumbar stabilization exercises with co-contraction of the deep muscles of the trunk have been recommended (Richardson et al., 1999). Some of these exercises can be performed in a supine position on the bed, and the loading is relatively small (Richardson et al., 1999). In addition, during exercise, the pelvis and vertebrae are in a near-neutral position (Watanabe et al., 2008). Thus, in patients with acute vertebral compression fractures, lumbar stabilization exercises, such as trunk extensor muscle exercises that do not elicit or enhance pain and that can be introduced early, may be useful in preventing disuse atrophy of the trunk extensor muscles. However, we have not found any reports evaluating these exercises.

Purpose of Study

In this study, patients with spine compression fractures who were hospitalized at random were treated with conventional rehabilitation, and in addition, groups with spinal lumbar stabilization exercise started earlier, with the lumber erector spinae muscle before and after intervention CSA was measured. And we evaluated whether the early introduction of lumbar spine stabilization exercise is useful for prevention of atrophy of lumbar extensor muscles.

Research Methodology

This study was conducted at a single general hospital in an area of Japan. The subjects were 20 patients (76.5 ± 8.0 years) who were hospitalized for vertebral compression fracture between February 2008 and May 2009. Then, 20 people were randomly divided into 10 people.

This study was approved by the Kasaoka Daiichi Hospital Research Safety Ethics Committee and the Shimane Rehabilitation College Research Safety Ethics Committee. We got approval and carried out. Muscle cross-sections of the erector spinae muscles were imaged using MRI (Magnetom Symphony 1.5T,
Siemens-Asahi Medical Technologies Ltd. Japan) with T1-weighted imaging and a slice thickness of 4 mm. The 3 measured sites were midway between the L2/L3, L3/L4, and L4/L5 vertebral bodies. The measurement position was a relaxed supine position. MRI imaging was performed twice by a radiologist at the hospital: within 3 days after admission and 3 to 4 weeks after discharge. Muscle CSA was calculated using the Freehand ROI function of Synapse (Image Archive System: Fuji Medical Ltd. Japan). Because the borders between the longissimus, iliocostalis, and multifidus muscles were difficult to determine, previous research (Kaser L, Mannion AF, Rhyner A, Weber E, Dvorak J, Muntener M., 2001) was used for reference; these 3 muscles together were considered the erector spinae muscles, and CSA was measured. Measurements were performed by the same examiner who was blinded to information such as imaging time or to which group the patient belonged. Each image was measured 3 times, and mean values were used as data. Compliance with the rehabilitation program in both groups was confirmed from the patients’ medical records.

Degree of pain and ADL level may affect the amount of physical activity, so these may also affect muscle CSA of the erector spinae muscle group. Therefore, these factors were evaluated and measured in this study.

The degree of pain while resting in bed in a supine position within 3 days of admission, and the degree of pain while resting in bed in a supine position and during in-hospital level walking at the time of discharge were evaluated using an 11-point numeric rating scale (Jensen MP, Turner JA, Romano JM, 1994). The question asked was “0 indicates absolutely no pain, and 10 indicates most intense pain imaginable. Please indicate the level of back pain that you now feel on a scale from 0 points to 10 points.” Pain ≥4 points was defined as moderate.

The Barthel Index (Mahony FI, Barthel DW, 1965) was used to evaluate ADL level. The ADL level before injury and the ADL level at discharge were assessed. The ADL level before injury was evaluated by the attending occupational therapist by asking the patient and family.

Medical management basically proceeded along a critical path in the hospital. In both the control group and the intervention group, the rehabilitation program was started within 2 to 3 days after admission. The movement instruction and exercises listed below in both groups were not performed if they elicited moderate pain (≥4 points on an 11-point numeric rating scale). In addition, the rehabilitation program was conducted only during hospitalization, not after discharge.

**Contents of Rehabilitation**

In the control group, the following conventional rehabilitation program was conducted. From the day rehabilitation was started until sitting upright was possible, guidance on rolling over with little pain and leg muscle strength exercises using hand resistance in bed were performed. The time of rest in bed was minimized as much as possible, and as pain decreased, activity was gradually increased, in order of sitting upright, transfer, and walking. At that time, instruction was given on getting up, standing, and walking that
caused minimal pain. After achieving the ability to maintain an upright sitting position, exercises using rubber tubing (Yoshida T, Akabane Y, 2005) were started as trunk extensor muscle exercises. These were performed on the left and right, 20 to 40 times per day, 6 days per week. These exercises are a method whereby sitting upright and standing are basic positions, resistance is added by rubber tubing against upper limb elevation, and the erector spinae muscles are exerted and strengthened as stabilizer muscles of upper limb movement. The increase or decrease in the amount of resistance corresponds to changes in the type of rubber tubing. At the same time, standing-up exercises are started as leg muscle strength exercises. These were performed 10 to 40 times per day, 6 days per week. In addition, ADL and IADL training was provided as needed. This movement instruction and exercises was performed under the supervision of a physical therapist. ADL and IADL training were performed under the supervision of occupational therapist.

In the intervention group, in addition to the above program except for trunk extensor muscle exercise, lumbar stabilization exercises (Richardson et al, 1999) were begun at the start of rehabilitation (within 3 days after admission). Patients in the intervention group performed isometric co-contractions for 5 seconds each time, 20 to 40 times per day, 6 days per week. Instructions for the exercises, with guidelines by Richardson et al (1999) as a reference, were given by a physical therapist with sufficient training. During the exercises, to achieve as accurate co-contraction of the trunk deep muscles as possible, the patient palpated and confirmed contraction of the transverse abdominis muscle.

**Statistical analysis** was performed using SPSS (ver.16). Baseline characteristics in the control group and intervention group were compared using the Mann-Whitney U test. To examine the effects of exercise, measurement parameters before and after the intervention period within each group were compared using the Wilcoxon signed rank sum test. In addition, measurement parameters were compared between the two groups after the intervention period using the Mann-Whitney U test. The level of statistical significance was less than 5%.
Results

There were no significant differences in any measurement parameter between the two groups (Table 1).

| Table 1: Comparison of the baseline characteristics between the control group and the intervention group |
|---------------------------------------------------|---------------------------------------------------|
| Control Group (n=10) | Intervention Group (n=10) |
| Subjects’ characteristics |
| Age (y) | 74.0 ±12.4 | 77.3 ±5.6 |
| Height (cm) | 152.4 ±9.6 | 148.2 ±5.1 |
| Weight (kg) | 53.5 ±12.2 | 52.0 ±9.0 |
| Male | 2 | 1 |
| Female | 8 | 9 |
| Vertebral injury level |
| Th12 | 3 | 3 |
| L1 | 2 | 4 |
| L2 | 2 | 1 |
| L3 | 1 | 1 |
| L4 | 2 | 1 |
| L5 | 0 | 0 |
| ADL level (Before injury) |
| Barthel Index (score) | 98.0 ±4.2 | 95.0 ±6.7 |
| Pain (Supine) |
| 11-point NRS (score) | 2.3 ±1.6 | 1.6 ±1.6 |
| Muscle CSA (mm²) |
| L2/L3 | 1876.1 ±599.0 | 1936.1 ±471.6 |
| L3/L4 | 2033.8 ±552.6 | 2099.8 ±492.7 |
| L4/L5 | 2184.0 ±432.8 | 2127.3 ±458.5 |

In the control group, muscle CSA of the erector spinae muscles was significantly lower after discharge than at the time of admission at each intervertebral level. On the other hand, in the intervention group, muscle CSA was significantly increased at L4/L5, and was maintained at L2/L3 and L3/L4. In addition, the percentage change in muscle CSA after discharge was significantly greater at each intervertebral level in the intervention group than in the control group (Table 2).
In both the control group and the intervention group, compared to before the intervention period, pain was significantly reduced after the intervention period. Also, after the intervention period, there was no significant difference between the two groups among the items (Table 3). In both the control group and the intervention group, the ADL level before injury and after the intervention period did not differ significantly. Also, after the intervention period, there was no significant difference between the two groups (Table 3).

Table 3: Comparison of other parameters in the control group and the intervention group after the intervention period

<table>
<thead>
<tr>
<th></th>
<th>Control Group (n=10)</th>
<th>Intervention Group (n=10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain 11-point NRS (score)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time of admission</td>
<td>2.3 ± 1.6</td>
<td>1.6 ± 1.6</td>
</tr>
<tr>
<td>Time of discharge</td>
<td>0.3 ± 0.7</td>
<td>0.1 ± 0.3</td>
</tr>
<tr>
<td>Walking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time of discharge</td>
<td>0.9 ± 0.9</td>
<td>0.5 ± 1.1</td>
</tr>
<tr>
<td>ADL level Barthel Index (score)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Before injury</td>
<td>98.0 ± 4.2</td>
<td>95.0 ± 6.7</td>
</tr>
<tr>
<td>On discharge</td>
<td>96.0 ± 7.0</td>
<td>93.5 ± 8.8</td>
</tr>
</tbody>
</table>

Mean ± SD
* : Significant difference compared between pre and post intervention p < 0.05
11-point NRS: 11-point numeric rating scale
Discussion

In this study, hospitalized patients with vertebral compression fractures were randomly assigned to 2 groups: a control group who received conventional rehabilitation, and an intervention group, who in addition to conventional rehabilitation, also began early lumbar stabilization exercises. Before and after the intervention period, muscle cross-sectional area (CSA) of the erector spinae muscles was measured to evaluate whether early lumbar stabilization exercises were useful to prevent atrophy of the trunk extensor muscles in patients with vertebral compression fractures during hospitalization. The results showed that muscle CSA of the erector spinae muscles decreased significantly in the control group after the intervention period, compared to before the intervention period. However, in the intervention group, muscle CSA of the erector spinae muscles was maintained or slightly increased.

At the time of discharge, in both the control group and the intervention group, pain was significantly relieved, and an ADL level similar to that before injury was achieved. This demonstrates that, in both groups, the general goals of medical treatment were achieved. However, muscle CSA of the erector spinae muscles decreased significantly in the control group after the intervention period compared to before the intervention period. This suggests that the conventional rehabilitation program in the control group did not prevent muscle atrophy of the erector spinae muscles. The cause is assumed to be decreased activity during hospitalization (Jensen MP, Turner JA, Romano JM, 1994). During hospitalization, bedrest and a decrease in activity, depending on duration and degree, cause disuse muscle atrophy.

However, in the intervention group, unlike in the control group, muscle CSA of the erector spinae muscles, compared to the time of admission, was maintained or slightly increased, thus suggesting that early introduction of lumbar stabilization exercises may prevent muscle atrophy during hospitalization. This difference in results between the two groups was affected by the difference in starting times of trunk extensor muscle exercises between the two groups. In general, in patients with acute vertebral compression fractures, standard trunk extensor muscle exercises, because they elicit and enhance back pain, are difficult. In the control group, trunk extensor muscle exercises were performed after achieving the ability to maintain an upright sitting position (18.7 ± 6.6 days). In the intervention group, however, lumbar stabilization exercises, which were performed as trunk extensor muscle exercises, were done in a supine position in bed. Because the loading was relatively small (Richardson et al, 1999), and the pelvis and vertebrae were in near physiologic alignment (Watanabe et al, 2008), pain was not elicited or enhanced, and except in one patient, the exercises could safely be started within 3 days after admission. Müller (1970) reported that, to prevent disuse muscle atrophy, muscle activity ≥20% of maximum voluntary contraction is required. Hides et al (1996) divided patients with acute low back pain into 2 groups, a control group (medical management only) and a lumbar stabilization exercise group, and evaluated the effects of exercise for 4 weeks based on muscle CSA of the erector spinae muscle group. They reported that pain was similarly relieved in both the control group and the intervention group, but that muscle CSA of the erector spinae muscles on the side of pain in the control group, after 4 weeks and
6 months, was decreased, whereas in the intervention group, it was maintained or increased. In the present study, as in the study of Hides et al (1996), the detailed amount of loading of lumbar stabilization exercise is unclear, but the addition of early lumbar stabilization exercises to a conventional rehabilitation program was an effective load to prevent muscle atrophy.

The limitations of this study are, first, the small number of patients and the second, the single institution. This issue should be considered in future studies.

Conclusion

The results of this study indicate that adding the lumbar stabilization exercise from the early stage to the conventional rehabilitation program may prevent muscle atrophy of the spinal column during the hospitalization period. Therefore, it is suggested that the lumbar stabilization exercise is useful for the prevention of further spinal compression fracture injuries and the occurrence of lumbar back pain.

References


Characteristics of Finger Function in People with Mild Cognitive Impairment

Nao Nakada*
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Naoyuki Nakaso***
Keiko Tsuchya****
Hiroshi Hagino*****

ABSTRACT

The purpose of this study is to examine finger function in people with mild cognitive impairment, using the Japanese version of Montreal Cognitive Assessment (MoCA-J), which is considered to have high MCI extraction sensitivity, and finger function evaluation. The number of registrants is 40 (mean age 80.2 ± 5.8, 7 males, 33 females). MMSE and MoCA-J were performed for cognitive function evaluation, and Purdue pegboard Test (PPT) was performed for finger function evaluation. Grip and pinch were also measured to measure coarse muscle strength. Based on the results of MoCA-J, it is classified into 2 groups of non-MCI group and MCI group, and for comparison between 2 groups, χ^2 test for sex, t-test for non-normally distributed items, non-normally distributed items are Mann The -Whitney U test was used. Then, the evaluation items with significant differences were compared and examined by logistic regression analysis. statistically significant differences were found in all PPT tasks (p <0.01), no statistically significant differences were found in grip strength and pinch power. As a result of performing logistic regression analysis with four items in which age was added to all the tasks of PPT as an independent variable and MCI as a dependent variable, it was the PPT Assembly task that was selected as an independent significant variable. The results of this study suggest that from the time of MCI, this results in the reduction of complex and sophisticated motor control as assessed in the Assembly task.

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Introduction

The increasing number of elderly people is increasing the number of people with dementia worldwide. Dementia affects 46.8 million people worldwide in 2015, and this number is estimated to reach 133.5 million in 2050 (Martin P., Adelina C.H., Martin K., Maelenn G., Maria K, 2016). Dementia is listed as one of the cause diseases that cause the need for nursing care for the elderly (Health and Welfare Statistics Association, 2006), and the onset of dementia increases the physical psychological and economic burden of the elderly and their families. Therefore, it is necessary to support the prevention of physical function and cognitive function of the elderly, and it becomes important to be able to continue a long and independent life.

In recent years, there has been a strong demand for achieving delayed onset of dementia and maintenance of QOL by early response to mild cognitive impairment (MCI) elderly people before onset of dementia (Mika Sugiyama, Ijuin Ikuin, Naoko Sakuma, Fumiko Miyamae, et al 2005). With MCI, 1 person or family complains about cognitive decline, 2 cognitive function is not normal but diagnostic criteria of dementia are not satisfied, 3 complicated daily life satisfies normal 3 points Defined by Petersen et al (Tsuboi Akio, Kadoma Masahiko, Kono Yutaka, Nakamura Yoichi, Arai Mitsuo et al 2013). Under such circumstances, many research reports have been made to examine the relationship between motor function and cognitive function, and a bilateral approach is needed.

Revised finger-skilled movement and cognitive function in healthy people The Hasegawa-type simple intelligence evaluation scale (Hasegawa Dementia Scale-Revised: HDS-R) and the IPU skill operation test (Ibaraki Prefectural University Finger Dexterity Test: IPUT) We are using it to investigate the relationship, and it is reported that even healthy people are correlated with the decrease in finger movement and cognitive function as they get older (Yoon JY, Michihiro Oguchi, Kenji Tsukada, Taishi Tsuji, Yoshie Shibata et al 1992). Also, in other reports, cognitive functions and general physical functions are evaluated in a multifaceted manner for elderly people, and physical functions related to cognitive functions are ingenuity, leg muscle strength, walking speed, and are particularly strongly related. Reported that it was a peg migration (Hiroyuki Suzuki, 2010). Mini Mental State Examination (MMSE) and HDS-R are widely used in clinical settings as tests that can screen cognitive function in a short time in reporting on cognitive function. Although these are said to be effective as screening tests for dementia, it has been pointed out that they have poor sensitivity in identifying patients with mild severity of dementia (Fujiwara Y, Suzuki H, Yasunaga
Therefore, these tests are expected to be insufficient in extracting MCI, which is a precursor stage of dementia.

A test with a high MCI extraction rate includes the Japanese version of The Montreal Cognitive Assessment (MoCA-J).

MoCA-J is a report that examines the usefulness of MoCA-J in patients with MCI and mild Alzheimer’s disease (AD). MoCA-J is cognitive decline in MCI and mild AD that are difficult to detect with MMSE and HDS-R. It suggests that it can be detected.

From the above, although reports suggesting an association between cognitive function and finger function have been reported, there has been no study showing an association with finger function for MCI. Therefore, the purpose of this study is to examine finger function in MCI using MoCA-J and finger function evaluation.

Method

1. Research subject

The target is an elderly person participating in a salon in A hospital in Tottori Prefecture. Exclusion criteria are those who have some functional impairment in upper limb function due to central motor dysfunction, those who have a diagnosis of dementia, those who meet the criteria for diagnosis of dementia, those who have difficulty communicating, and those who need assistance in daily. The number of enrolled study subjects was 40 (mean age 80.2 ± 5.8, 7 males, 33 females).

2. Ethical considerations

In conducting the study, the contents of the experiment were explained to all subjects, and written consent was obtained. This study was conducted with the approval of the Tottori University Hospital Hospital Ethics Review Committee (approved No. 1702B075) and the Daisen Rehabilitation Hospital Ethics Review Committee.

3. Measurement item

MMSE and MoCA-J were used for evaluation of cognitive function, and Purdue Pegboard Test (PPT) was used for evaluation of hand function. Grip and pinch were also measured to measure the muscle strength of the upper limbs and fingers.

1) MMSE

The MMSE is the most widely used test internationally as a simple scale of dementia. The score range was rated from 0 to 30 points, 23/24 points were set as cutoff values, and those below 23 points were excluded from the subject.
2) MoCA-J

MoCA-J consists of tasks to evaluate cognitive function in multiple ways, and it is evaluated with a full 30 points like MMSE. The effectiveness of tests such as reliability and validity are also shown along with the effectiveness of MCI differentiation\(^8,9\). The cutoff value was set to 25/26 points, and 26 points or more were divided into non-MCI groups and 25 points or less into MCI groups and divided into 2 groups. Those with 12 years of education or less will be added one point.

3) PPT

PPT is a test developed by psychologist Joseph Tiffin in 1948 (Joseph Tiffin and E.J.Asher, 1948). The practice method was conducted according to the examination guide, sitting on a chair with the pegboard placed in front and at a table height easy for the study subject (the elbow joints of the study subject are 90° flexed). The procedure was as follows: right hand → left hand → Assembly. The task with only one hand was scored for 30 seconds, and in the Assembly, the number of pegs inserted in 60 seconds was scored. The one-handed task was conducted twice and the Assembly was conducted only once, and the maximum value was adopted.

4) Muscle strength (grip strength / pinch power)

A Smedley-type digital grip meter was used to measure the grip strength, and a pinch gauge was used to measure the pinch power. Grip strength was measured in a standing position, with the upper limbs hanging down on the body side, measurement was performed twice alternately in the left and right directions, and the maximum value in each of the left and right was adopted. The pinching force was measured in the chair, and the elbow joint was bent at 90°, and was measured with the thumb and index finger grips at the middle position of the forearm. The left and right were alternately measured twice, and the maximum value of each of the left and right was adopted.

3. Data analysis

For comparison between the two groups, sex was \(\chi^2\) test, items with normal distribution were unpaired t-tests, and items without normal distribution were Mann-Whitney’s U test. Next, in the evaluation items where significant differences were found, comparison and examination using logistic regression analysis were performed. The analysis was performed by the variable increase method (likelihood ratio). The statistical software IBM SPSS Statistics version 24 was used for all statistical analysis, and the significance level was less than 5%.
Result

Table 1 Breakdown of Target

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>age±SD</th>
<th>Males/Females</th>
<th>MMSE±SD</th>
<th>MoCA-J±SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>non-MCI group</td>
<td>23</td>
<td>78.3 ± 5.4*</td>
<td>3/20</td>
<td>28.6 ± 1.3</td>
<td>27.9 ± 1.5</td>
</tr>
<tr>
<td>MCI group</td>
<td>17</td>
<td>82.7 ± 5.4*</td>
<td>4/13</td>
<td>27.7 ± 1.8</td>
<td>23.2 ± 2.2</td>
</tr>
</tbody>
</table>

* : p < 0.05

Average age of the non-MCI group is 78.3 ± 5.4 (3 males, 20 females), the average score of MMSE is 28.6 ± 1.3 points, and the average score of MoCA-J (26 points or more) is 27.9 ± 1.5 point. On the other hand, the average age of the MCI group is 82.7 ± 5.4 (4 males and 13 females), the average score of MMSE is 27.7 ± 1.8 points, and the average score of MoCA-J (25 points or less) is 23.2 ± 2.2 points. There was a statistically significant difference between the two groups in age (p < 0.05).

Figure 1 PPT Result

In the right hand task (dominant hand), the average value of the non-MCI group was 13.7 ± 1.5, and the average value of the MCI group was 11.9 ± 1.4. In the left hand task (non-dominant hand), the average value of the non-MCI group was 13.3 ± 1.6, and the average value of the MCI group was 11.5 ± 1.7. In the Assembly task, the average value of the non-MCI group was 23.6 ± 3.7, and the average value of the MCI group was 16.2 ± 3.1. Statistical significance was found between the two groups in all tasks (p < 0.01).
The average grip strength of the right hand (dominant hand) was 24.7 ± 5.1 kg in the non-MCI group and 23.5 ± 7.3 kg in the MCI group. In the left hand (non-dominant hand), the non-MCI group was 23.1 ± 5.5 kg, and the MCI group was 22.9 ± 6.1 kg.

The average pinch power for the right hand (dominant hand) was 6.3 ± 1.8 kg for the non-MCI group and 6.8 ± 2.2 kg for the MCI group. In the left hand (non-dominant hand), it was 6.0 ± 2.0 kg in the non-MCI group and 6.3 ± 1.9 kg in the MCI group. There were no statistically significant differences in all the tasks.

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Degree of influence on MCI by logistic regression analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent variable</td>
<td>Odds</td>
</tr>
<tr>
<td>PPT Assembly</td>
<td>0.276</td>
</tr>
<tr>
<td>PPT Right hand</td>
<td>--</td>
</tr>
<tr>
<td>PPT Left hand</td>
<td>--</td>
</tr>
<tr>
<td>age</td>
<td>--</td>
</tr>
</tbody>
</table>
We performed multiple logistic regression analysis with four items where age was added to the hand function evaluation items that showed significant differences as independent variables and non-MCI / MCI as dependent variables. As a result, only the assembly task of PPT was selected as an independent significant variable, and the evaluation item of the finger function most relevant to the presence or absence of MCI was the assembly task of PPT.

**Figure 2  Muscle strength  Result**

The average grip strength of the right hand (dominant hand) was $24.7 \pm 5.1$ kg in the non-MCI group and $23.5 \pm 7.3$ kg in the MCI group. In the left hand (non-dominant hand), the non-MCI group was $23.1 \pm 5.5$ kg, and the MCI group was $22.9 \pm 6.1$ kg.

The average pinch power for the right hand (dominant hand) was $6.3 \pm 1.8$ kg for the non-MCI group and $6.8 \pm 2.2$ kg for the MCI group. In the left hand (non-dominant hand), it was $6.0 \pm 2.0$ kg in the non-MCI group and $6.3 \pm 1.9$ kg in the MCI group. There were no statistically significant differences in all the tasks.
Discussion

In this study, we examined hand function for elderly people with suspected MCI. As a result, there were no significant differences in the results of muscle strength (grip strength, pinch force) between the non-MCI group and the MCI group, but with PPT, the number that could be significantly implemented in the MCI group was small.

It is said that dementia score of 23 points or less is suspected of dementia of MMSE (Folstein MF et al, 1975 and Tsoi KFC et al, 2015). The average score of MMSE in this research subject is 28.2 ± 1.5 points, and it is judged on the test that there is no doubt of dementia, and it is considered that the cognitive function is relatively maintained. Assuming that the level of such cognitive function is high, extraction of MCI by MoCA-J was performed.

Summarizing the results of this study, it became clear that in the MCI group, the high dexterity of the finger as assessed by PPT is reduced. Deterioration of AD has been reported to reduce the fine abilities of the fingers compared to healthy elderly people (Kluger A et al, 1997). In addition, a simple test (STEF) for hand function assessment has been performed on mild to moderate AD patients, and it has been reported that the dexterity of handedness has already decreased from the stage of mild cognitive impairment it has been (Mika Sakamoto, Emiko Kikuchi, Masahiro Shişeta, 2006). These research reports are similar to the results of this research, suggesting that such characteristics may have arisen from the point of MCI, which is a precursor stage of AD. In this study, statistical significance was found in all evaluation items of finger function in the MCI group, and as a result of logistic regression analysis, it was the PPT Assembly task that was found to be strongly related to MCI. It has been reported that limb coordination declines in people with MCI or mild AD (Emile H et al, 1999). Assembly is the task of manipulating more complex articles using a total of three color washers in addition to the pins used with one hand. Therefore, it is considered that the association with MCI is most strongly shown in the assembly task that requires more elaborate and cooperative use of the upper limbs. When PPT was used to examine the effects of aging on finger function, PPT results showed a significant negative correlation with aging, and it was reported that the numbers that can be implemented decrease as the age increases (Eto Fumio, Harasawa Michimi, Hirai Toshinori, 1983). In this study, as a result of examining age as an independent variable by logistic regression analysis, there was no statistically significant difference in age. Therefore, it became clear that PPT's assembly is related to MCI even if age is taken into consideration. Because there were no significant differences in muscle strength between the non-MCI and MCI groups, the results of this study suggested that loss of complex and finer motor
control preceded loss of greater motor and cognitive function. From the above, it has been suggested that it is effective to present the task of operating fine articles in coordination with both hands as a method for early response to cognitive function.

In this study, we examined hand function for elderly people with suspected MCI using standardized tests. As a result, it became clear that the PPT Assembly task is related to MCI. The PPT Assembly task is effective as a tool to detect MCI.

References


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