Program and Abstracts

September 18-19, 2014
Rajabhat Maha Sarakham University, Maha Sarakham (Thailand)

In Cooperation with

Roi Et Rajabhat University (Thailand)
Jena University (Germany)
Waseda University (Japan)
West Visayas State University (Philippines)
University of South East Asia (Cambodia)
Vinh University (Vietnam)
National University of Laos (Laos)
SEAMEO Regional Centre for Education in Science and Mathematics: RECSAM (Malaysia)
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Rajabhat Maha Sarakham University organized its first International conference on Sciences and Social Sciences in the year 2011, or ICSSS 2011, serving as an international platform for academics and scholars from Thailand and abroad to present and share their researches and experiences in various fields under sciences and social sciences. Our first ICSSS successfully attracted participants from all over the country and abroad. The second International conference on Sciences and Social Sciences was organized in 2012 under the theme “Innovation for Regional Development” in response to the urgent needs, policies and development strategies of the ASEAN countries to officially become one ASEAN Economic Community in the year 2015. With kind cooperation from our partner universities in the US, Europe and Asia, the ICSSS 2012 could attract more professionals, academics, scholars, researchers and graduate students from all over the country and abroad, especially our colleagues from other ASEAN countries.

The ICSSS 2013 under the theme "Research and Development for Sustainable Life Quality" is no less remarkable. This year’s ICSSS2014 under the theme “Integrated Creative Research for Local Development toward the ASEAN Economic Community” has attracted academics, scholars, and researchers from home and abroad to present and share their works and establish networks of academic cooperation in a variety of disciplines of Sciences and Social Sciences. It is expected that this year's event will lead to further cooperation among colleagues from ASEAN institutions as well as closer ties with our partners and fellow academics and researchers from other regions of the world to improve our works and share our research findings and experiences in sciences and social sciences. The ultimate goal of this year’s conference is to motivate one another as we join hands to work in various disciplines of sciences and social sciences to improve the benefit of our integration of creative research for local regional development.
Rajabhat Maha Sarakham University, Maha Sarakham (Thailand)

In Cooperation with

- Roi Et Rajabhat University (Thailand)
- Jena University (Germany)
- Waseda University (Japan)
- West Visayas State University (Philippines)
- University of South East Asia (Cambodia)
- Vinh University (Vietnam)
- National University of Laos (Laos)
- SEAMEO Regional Centre for Education in Science and Mathematics: RECSAM (Malaysia)
Advisory Committees

- President of Rajabhat Maha Sarakham University
- President of Roi Et Rajabhat University
- President of Jena University
- President of Waseda University
- President of West Visayas State University
- President of University of South East Asia
- President of Vinh University
- President of National University of Laos
- President of SEAMEO Regional Centre for Education in Science and Mathematics: RECSAM

Organizing Committees

- Vice President for Research, Planning and Development
- Vice President for International Relations, Art and Culture
- Vice President for Academic Affairs
- Vice President for Student Affairs and Human Resource Development
- Vice President for Administration
- President’s Assistant for Academic Extension and Public Relations
- President’s Assistant for Information and Technology
- President’s Assistant for Architecture and Landscape Development
- Dean, Faculty of Education
- Dean, Faculty of Humanities and Social Sciences
- Dean, Faculty of Sciences and Technology
- Dean, Faculty of Management
- Dean, Faculty of Agricultural Technology
- Dean, Faculty of Information Technology
- Dean, The College of Laws and Governance
- Dean, Graduate College
- Director, Research and Development Institute
- Director, Office of International Relations and International Education
- Director, Office of President
- Director, Office of Academic Promotion and Records
- Director, Office of Academic Resources Center
- Director, Office of Arts and Cultures
- Director, Office of Information Technology
- Director, Office of Academic Services
- Director, Office of University’s Standard and Quality Assurance
- Deputy Directors, Research and Development Institute
- Deputy Directors, Office of International Relations and International Education
The 4th International Conference on Sciences and Social Sciences 2014: Integrated Creative Research for Local Development toward the ASEAN Economic Community (ICSSS 2014)
September 18-19, 2014 at Rajabhat Maha Sarakham University

VI

Reviewers

- Prof. Dr. Arunrat Chaveerach
  - Khon Kaen University
- Prof. Dr. Tanongkiat Kiatsiriroat
  - Chiang Mai University
- Assoc. Prof. Dr. Jongkol Kanperm
  - Kasetsart University
- Assoc. Prof. Dr. Alongklod Tanomtong
  - Khon Kaen University
- Assoc. Prof. Dr. Somsamai Srimapai
  - Maha Sarakham University
- Assoc. Prof. Dr. Wimonrat Soonthornrojana
  - Maha Sarakham University
- Assoc. Prof. Dr. Prasart Nuengchalerm
  - Maha Sarakham University
- Assoc. Prof. Dr. Thooprontong Kwangsawad
  - Maha Sarakham University
- Assoc. Prof. Dr. Chaiwatt Surunthirat
  - Naresuan University
- Assoc. Prof. Dr. Monasit Sitisomboon
  - Naresuan University
- Assoc. Prof. Dr. Wareerat Kaewurai
  - Naresuan University
- Assoc. Prof. Dr. Kwunkamol DonKwa
  - Suranaree University of Technology
- Assoc. Prof. Dr. Pradit Ekagathat
  - Rajabhat Maha Sarakham University
- Assoc. Prof. Dr. Wongpattana Sripasert
  - Rajabhat Maha Sarakham University
- Assoc. Prof. Dr. Sitichai Bunsaman
  - Rajabhat Maha Sarakham University
- Assoc. Prof. Dr. Narongrit Sopa
  - Rajabhat Maha Sarakham University
- Assoc. Prof. Dr. Weerakit Saorm
  - Rajabhat Maha Sarakham University
- Assoc. Prof. Dr. Ganjana Nathapindhu
  - Khon Kaen University
- Asst. Prof. Dr. Nanta Palitawanont
  - Kasetsart University
- Asst. Prof. Dr. Tawee Sranamkam
  - King Mongkut's University of Technology Ladkrabang
- Asst. Prof. Dr. Sakultala Wannakhe
  - King Mongkut's University of Technology North Bangkok
- Asst. Prof. Dr. Chaiyuth Sirisuthi
  - Maha Sarakham University
- Asst. Prof. Dr. Jiraporn Chano
  - Maha Sarakham University
- Asst. Prof. Dr. Juckamas Laohavanich
  - Maha Sarakham University
- Asst. Prof. Dr. Oranuch Srisaard
  - Maha Sarakham University
- Asst. Prof. Dr. Somchai Lamduan
  - Maha Sarakham University
- Asst. Prof. Dr. Somkiet Poopatwiboon
  - Maha Sarakham University
- Asst. Prof. Dr. Tharinthorn Namwan
  - Maha Sarakham University
- Asst. Prof. Dr. Jindaporn Jamraddoedluk
  - Maha Sarakham University
- Asst. Prof. Dr. Phaddee
  - Maha Sarakham University
- Asst. Prof. Dr. Sombat Tayraukham
  - Maha Sarakham University
- Asst. Prof. Dr. Lamul Wiset
  - Maha Sarakham University
- Asst. Prof. Dr. Sastra Laoakka
  - Maha Sarakham University
- Asst. Prof. Dr. Decha Chantakat
  - Maha Sarakham University
- Asst. Prof. Dr. Pensri Amornsinlaphachai
  - Nakhon Rachasima Rajabhat University
- Asst. Prof. Dr. Direk Teeraputon
  - Naresuan University
- Asst. Prof. Dr. Jitima Wannasri
  - Naresuan University
- Asst. Prof. Dr. Pufa Savagpun
  - Naresuan University
- Asst. Prof. Dr. Chayanit Sasiwimol
  - Pibulsongkram Rajabhat University
- Asst. Prof. Dr. Piyamanas Voravittrattanakul
  - Pibulsongkram Rajabhat University
Asst. Prof. Dr. Thanin Putjuso  Rajamangala University of Technology Rattanakosin
Asst. Prof. Dr. Bhumbhong Jomhongbhibhat Sakon Nakhon Rajabhat University
Asst. Prof. Dr. Sikan Pienthunyakorn Sakon Nakhon Rajabhat University
Asst. Prof. Dr. Thardthong Pansupawat Sakon Nakhon Rajabhat University
Asst. Prof. Dr. Krit Pinthong Surindra Rajabhat University
Asst. Prof. Dr. Chucheep Pratumviant Ubon Ratchathani Rajabhat University
Asst. Prof. Dr. Goachagorn Thipatdee Ubon Ratchathani Rajabhat University
Asst. Prof. Dr. Jinawatara Pakotang Ubon Ratchathani Rajabhat University
Asst. Prof. Dr. Somkid Sroinam Ubon Ratchathani Rajabhat University
Asst. Prof. Dr. Saksiri Nantasuk Udon Thani Rajabhat University
Asst. Prof. Dr. Panya Thongnin Phetchaburi Rajabhat University
Asst. Prof. Dr. Aruneet Jansila Rajabhat Maha Sarakham University
Asst. Prof. Dr. Chayakan Ruangsukwadi Rajabhat Maha Sarakham University
Asst. Prof. Dr. Rungfa Lomnimuang Rajabhat Maha Sarakham University
Asst. Prof. Dr. Samarn Ekkapim Rajabhat Maha Sarakham University
Asst. Prof. Dr. Siri Thee-asana Rajabhat Maha Sarakham University
Asst. Prof. Dr. Sunee Sathitanant Rajabhat Maha Sarakham University
Asst. Prof. Dr. Tipaporn Sujaree Rajabhat Maha Sarakham University
Asst. Prof. Dr. Wimonmas Pathomuanichkul Rajabhat Maha Sarakham University
Asst. Prof. Dr. Somsuwan Sub Lt. Dr. Arun Surikraduang Rajabhat Maha Sarakham University
Asst. Prof. Dr. Ladawan Wattanaboot Rajabhat Maha Sarakham University
Asst. Prof. Dr. Mayurees Sirivich Rajabhat Maha Sarakham University
Asst. Prof. Dr. Sasithorn Chawarat Rajabhat Maha Sarakham University
Asst. Prof. Dr. Pornarong Siripiyasing Rajabhat Maha Sarakham University
Asst. Prof. Dr. Sudtida Junmanee Chiang Rai Rajabhat University
Asst. Prof. Dr. Chakkrat Buakaew Burapha University
Dr. Ketsaraphan Punsrigit Khongjaroen Chiang Rai Rajabhat University
Dr. Sudapon Panyaprouk Chiang Rai Rajabhat University
Dr. Chiratus Ratanamaneichat Kasem Bundit University
Dr. Chalida Niamnuy Kasetsart University
Dr. Nipon Bhuwakietkumjorn King Mongkut's University of Technology North Bangkok
Dr. Thanya Parametthanuwat King Mongkut's University of Technology North Bangkok
Dr. Somnuek Sinthupuan Maejo University
Dr. Yuwadee Chaiyachet Maha Sarakham University
Dr. Songchai Wiriyapunwong Maha Sarakham University
Dr. Nattinee Thongdee Nakhon Ratchasima Rajabhat University
Dr. Rungrote Pongkitwitoon Nakhon Ratchasima Rajabhat University
Dr. Wichian Thamrongsothisakul Naresuan University
Dr. Namphon Pipatpaiboon Rajamangala University of Technology Isan Sakonnakhon Campus
Dr. Petchrat Jaiboonsakon Nakhon Rajabhat University
Dr. Ubonsin Poprom Sakon Nakhon Rajabhat University
Dr. Chanchira Joomponlha Udon Thani Rajabhat University
Dr. Sasitorn Ammarinsangpen Udon Thani Rajabhat University
• Dr. Manita Leethochawalit Atthanuphan  Silpakorn University
• Dr. Siriwan Vanichwatanavorachai  Silpakorn University
• Dr. Ubonwan Songserm  Silpakorn University
• Dr. Sakchai Dondee  Rajabhat Chaiyapoom University
• Dr. Chawnukorn Tabtimsai  Rajabhat Maha Sarakham University
• Dr. Poosit Boontongtherng  Rajabhat Maha Sarakham University
• Dr. Pornpan Phuapaiboon  Rajabhat Maha Sarakham University
• Dr. Prasopsuk Rittidet  Rajabhat Maha Sarakham University
• Dr. Somchai Inthata  Rajabhat Maha Sarakham University
• Dr. Soolsil Prasongsook  Rajabhat Maha Sarakham University
• Dr. Yuwadee Insumran  Rajabhat Maha Sarakham University
• Dr. Orranuch Wongwattanasatien  Rajabhat Maha Sarakham University
• Dr. Kamon Ponkham  Rajabhat Maha Sarakham University
• Dr. Nisarat Chotechoei  Rajabhat Maha Sarakham University
• Dr. Nitaya Klangchanee  Rajabhat Maha Sarakham University
• Dr. Nitaya Buntao  Rajabhat Maha Sarakham University
• Dr. Panadda Tansupo  Rajabhat Maha Sarakham University
• Dr. Piyawadee Saraphirom  Rajabhat Maha Sarakham University
• Dr. Sompong Sriunlaya  Rajabhat Maha Sarakham University
Welcome Speech and Opening Address

Welcome Speech on The 4th International Conference on Sciences and Social Sciences 2014: Integrated Creative Research for Local Development toward the ASEAN Economic Community (ICSSS 2014)  
September 18-19, 2014 
Theater Hall, Building 34, Rajabhat Maha Sarakham University

by Dr. Chumnian Pollaharn
Vice President, Rajabhat Maha Sarakham University

Associate Professor Somchai Wongkasem, President of Rajabhat Maha Sarakham University

Keynote and Invited Speakers, Distinguished Guests, Ladies and Gentlemen:

On behalf of the Organizing Committee, I would like to welcome you to Rajabhat Maha Sarakham University and The 4th International Conference on Sciences and Social Sciences 2014: Integrated Creative Research for Local Development toward the ASEAN Economic Community

The aims of the ICSSS 2014, which is organized during September 18-19, are to offer academics of various disciplines under sciences and social sciences from Thailand and abroad opportunity to present and share academic works or research studies through oral and poster presentations; to conduct workshops and provide opportunities for participants to meet with keynote and invited speakers, and fellow scholars from different countries during the presentations and workshops; to establish ties and relationships that will lead to fruitful academic cooperation networks in the future; and to publish proceedings of this conference for dissemination.

This conference is organized by Rajabhat Maha Sarakham University in cooperation with the following educational institutions: Roi Et Rajabhat University, Jena University (Germany), Waseda University (Japan), West Visayas State University (Philippines), University of South East Asia (Cambodia), Vinh University (Vietnam), National University of Laos (Laos), and SEAMEO Regional Centre for Education in Science and Mathematics: RECSAM (Malaysia). Without kind cooperation and shared resources from our partner universities, this event would not have been possible.

For this conference, there are 170 research presentations, 11 keynote and invited speakers' presentations. It is expected that there are approximately 500 participants taking part in the activities organized during this event.

On this auspicious moment, Associate Professor Somchai Wongkasem, President of Rajabhat Maha Sarakham University to declare open and address this International Conference on Sciences and Social Sciences 2014: Integrated Creative Research for Local Development toward the ASEAN Economic Community

Thank you.
Opening Address
by Associate Professor Somchai Wongkasem
President, Rajabhat Maha Sarakham University

At the 4th International Conference on Sciences and Social Sciences 2014: Integrated Creative Research for Local Development toward the ASEAN Economic Community (ICSSS 2014)
September 18-19, 2014
Theater Hall, Building 34, Rajabhat Maha Sarakham University

The Organizing Committees,
Distinguished Delegates, Ladies and Gentlemen

It is an honor and a pleasure for me to preside over the opening of the 4th International Conference on Sciences and Social Sciences 2014: Integrated Creative Research for Local Development toward the ASEAN Economic Community. Rajabhat Maha Sarakham University is one of the oldest universities in this region. It has consistently developed throughout its history in providing educational services and serving the region with quality education at different levels, ranging from kindergarten to doctoral degrees, in order to meet the needs of local and regional communities. This international conference is an attempt to integrate universal wisdom in the university's practice in providing quality education and services to meet the established missions, relevant to the current situation as Thailand and fellow ASEAN countries are getting ready for the ASEAN Economic Community in 2015.

It is a great pleasure to meet scholars and academics from other ASEAN countries, as well as distinguished delegates of various disciplines in sciences and social sciences from other countries such as Japan and Germany. I am sure this conference can generate substantial knowledge and ideas that are beneficial to further development of the region and improvement of life quality.

I would like to congratulate Rajabhat Maha Sarakham University and the partner universities on the mutual commitment in organizing this international event as an academic platform for scholars and researchers to share and update their work in pursuing academic excellence. This is a great opportunity for participants to become informed of new ideas and progress in various fields under the disciplines of sciences and social sciences.

May I express sincere appreciation to the organizing committees for their hard work, to the supporting organizations for their kind assistance, to members of the Executive Board for their encouragement and moral support, and especially to the partner universities for their cooperation and generosity in sharing their resources and co-hosting this conference.

May I extend my appreciation to all the participants, scholars and researchers, faculty and students of various universities, who submitted their papers for presentation at this conference in order to share their work and keep us informed of useful knowledge and research findings.

Last but not least, special appreciation goes to all the keynote and invited speakers of the various workshops for their kind cooperation to share their expertise and experience with the audiences of different sessions. To all the participants and everyone involved, I wish you all a fruitful and successful conference.

And may I now take this auspicious moment to declare open the International Conference on Sciences and Social Sciences 2014: Integrated Creative Research for Local Development toward the ASEAN Economic Community.

Thank you.
Keynote Speaker
Associate Professor Dr. Prapat Thepchatree
Director, Center for ASEAN Studies, Thammasat University
Thammasat University-Rangsit campus Thailand

OFFICE: Thammasat University-Rangsit campus Thailand Center for ASEAN Studies, Dome Administration Building, 99 Moo 18, Klong Nueng, Klong Luang, Patumthani, 12121

CURRENT POSITION: - Director, Center for ASEAN Studies, Thammasat University
- Associate Professor, Faculty of Political Science, Thammasat University
- President, Association for American Studies in Thailand

EDUCATION: - Ph.D. in Political Science (International Relations) University of Georgia, U.S.A.
- M.A. in Political Science (International Relations) Ohio University, U.S.A.
- B.A. in Political Science (International Affairs) Thammasat University

SPECIALIZATION: - ASEAN
- East Asian Studies
- Thai Foreign Policy
- Foreign Policy Analysis
- International Security
- International Political Economy
Invited Speakers
Professor Dr. OGAWA Makoto
Waseda University, Japan

OFFICE: Department of Earth Sciences, Waseda University
Nishiwaseda 1-6-1, Shinjuku-ku, Tokyo 169-8050, Japan

CURRENT POSITION:
- Research Associate, Waseda University, Tokyo (1991-1992);
- Post Doctoral Fellow, The Institute of Physical and Chemical Research, Saitama (1992-1995);
- Lecturer, Department of Earth Sciences, Waseda University, Tokyo (1995-1998);
- Associate Professor, Department of Earth Sciences, Waseda University, Tokyo: (1998-2003);
- Researcher, PRESTO, Japan Science and Technology Agency (JST) (1995-2000);
- Full Professor (2003 -Present)

EDUCATION:
- Graduate in Applied Chemistry (Inorganic chemistry), Waseda University, Tokyo (1987).
- Dr. Engineering, Waseda University, Tokyo (1992).

SPECIALIZATION:
- Intercalation chemistry
- Preparation and applications of mesoporous oxides
- Photochemistry and photophysics of organic dyes adsorbed on solids
OFFICE:  Saalstraße 10, 07743 Jena, Germany
Tel.: (+49) 0176 31563353
Email: ahmed.hamid@med.uni-jena.de
ahmedgenetic@hotmail.com

PRESENT POSITION:  
- Doctoral student since October 2009 in group of PD Dr. Thomas Liehr
  Molecular Cytogenetics Department / Institute for Human genetics /
  Jena University Hospital / Friedrich-Schiller-University Jena.
- Scientific researcher since October 2013 till now in group of
  PD Dr. Thomas Liehr
  Molecular Cytogenetics Department / Institute of Human Genetics /
  Jena University Hospital / Friedrich-Schiller-University Jena.

EDUCATION:  
1991 – 1995 B.Sc. in Biology from College of Education,
  Baghdad University, Iraq
2000 – 2003 M.Sc. degree in Zoology/Cytogenetics from College of
  Science, Al-Mustansiriya University, Iraq

SPECIALIZATION:  
- Cell Culture and Chromosomal analysis with GTG Banding.
- Molecular Cytogenetics; Fluorescent in-situ hybridization (FISH)
  techniques.
- array Comparative Genomic Hybridization (a-CGH) technique.
- Glass Needle Base Microdissection technique.
- Degenerate Oligonucleotide-Primed (DOP-PCR) technique.
- DNA- Reamplification technique.
- DNA Labelling technique.
- Plasmid DNA Purification.
- Work experience with MetaSystems Isis Program for molecular
  cytogenetics.
Associate Professor Dr. Seangdeuane WAYAKONE
National University of Laos, Laos PDR

OFFICE: Faculty of Forestry, National University of Laos
P.O Box: 7322, Dongdok, Vientiane, Lao PDR

PRESENT POSITION: - Director of Planning and International Relations, National University of Laos
- Senior Adviser for SSAFE Consult Company Limited

EDUCATION: - B. Sc degree from 1983 to 1988 in University of Forestry, Vietnam.
- M.Sc degree from 1994 to 1996 in University of Pertanian, Malaysia
- Ph. D degree from 1996 to 1999 in University Putra Malaysia

SPECIALIZATION: - Environmental Impact Assessment (EIA)
- Park, Recreation and Ecotourism Management Planning
- Expert System
- Forest Resources Development and Management
Dr. Tran Ba Tien
Vinh University, Vietnam

OFFICE: 182 Le Duan, Vinh City – Vietnam, Vinh University
PRESENT POSITION: Chair of the Department of Foreign Languages, Vinh University
EDUCATION:
- Bachelor of Arts in English, Vinh University 1998
- Diploma in TEFL (Teaching English as a Foreign Languages), Carleton University – Canada 2003
- Master of Arts in English linguistics, Vietnam National University, Hanoi 2004
- Master of Arts in TESOL, San Francisco State University – USA 2009
- Doctor of Philosophy in Cognitive Linguistics, Vinh University 2012
SPECIALIZATION:
- Teaching English to Speakers of Other Languages (TESOL)
- Cognitive Linguistics
OFFICE: Southeast Asian Ministers of Education Organization
Regional Centre for Education in Science and Mathematics
SEAMEO RECSAM, Jalan Sultan Azlan Shah,
11700 Gelugor, Penang, Malaysia

PRESENT POSITION: Mathematics Education Specialist (Training Programme)

EDUCATION: Ph.D. (computational science)

SPECIALIZATION: - dynamic mathematics software (GeoGebra),
- universal harmonious values integration
- observation skills and Problem-Based Learning the 4 Core Areas (PBL4C)
Mr. Marmon A. Pagunsan
SEAMEO RECSAM, Malaysia

OFFICE: Southeast Asian Ministers of Education Organisation
Regional Centre for Education in Science and Mathematics
SEAMEO RECSAM, Jalan Sultan Azlan Shah,
11700 Gelugor, Penang, Malaysia

PRESENT POSITION: Science Education Specialist (Training Programme)

EDUCATION:
- Bachelor of Secondary Education major in Physics as Philippines’
  Department of Science and Technology Scholar at West Visayas State
  University (Philippines)
- Master of Education in Physics at University of the Philippines-
  Visayas (Philippines).

SPECIALIZATION: Educational Television and Continuing Professional Development of
Teachers as Content Specialist, Trainer, Facilitator, Resource Person
And Organizer.
**Professor Dr. Vicente C. Handa**  
*West Visayas State University, the Philippines*

**OFFICE:** College of Education, West Visayas State University  
La Paz, Iloilo City, 5000 Philippines

**PRESENT POSITION:** Professor 4, Division of Science Education

**EDUCATION:**  
- Doctor of Philosophy (Science Education), 2008  
The University of Georgia, Athens, Georgia, U.S. A.  
- Master of Arts in Education (Chemistry Education), 2000  
University of the Philippines, Quezon City, Philippines  
- Master of Arts in Education (M.A.) major in Educational Management, 1995  
Aklan State University (Formerly Aklan State College of Agriculture)  
- Bachelor of Secondary Education, Major in General Science, 1991  
West Visayas State University, Iloilo City, Philippines

**SPECIALIZATION:** the socio-cultural dimension of science education, particularly on the community immersion model, service learning, and the use of cultural memory banking and hybrid spaces in science teacher preparation.
Dr. Mean Sothy
University of South-East Asia, Cambodia

OFFICE: Mondul III Village, Slongram Commune, Siem Reap Town, Siem Reap Province, Cambodia

PRESENT POSITION: Director of International Relations and Research, University of South-East Asia, Siem Reap, Cambodia

EDUCATION: 2008-2011: Doctor of Education in Educational Administration, Ubon Ratchathani Rajabhat University (UBRU), Ubon Ratchathani Province, Thailand
2006-2008: Master of Education in Educational Administration with excellent for thesis, Ubon Ratchathani Rajabhat University (UBRU), Ubon Ratchathani Province, Thailand
2001-2002: Certificate of Upper Secondary School Teacher in Mathematics, Faculty of Pedagogy, Phnom Penh, Cambodia
1997-2001: Bachelor of Science in Mathematics, Royal University of Phnom Penh, Phnom Penh, Cambodia

SPECIALIZATION: Educational Administration
Associate Professor Dr. Nguan Huynh Phan
Institute for Research and Development of New Technologies (IRDNewTech), Vietnam

OFFICE: Institute for Research and Development of New Technologies; Building of number 17, Pham Kinh Vy street Ben Thuy ward, Vinh City, Nghe An Province, Vietnam

PRESENT POSITION: President of Institute for Research and Development of New Technologies, Viet Nam.

EDUCATION: 1979: Graduate in Mathematics at Vinh University, Viet Nam
1989: Ph D in Mathematics at Ha Noi National University of Education, Viet Nam
1994: Dr. in Mathematics at University of Pierre and Marrie Curie, Paris 6, French

SPECIALIZATION: Mathematics
## Conference Program

**The 4th International Conference on Sciences and Social Sciences 2014:**
**Integrated Creative Research for Local Development toward the ASEAN Economic Community**
**Theater Hall (Building 34), Rajabhat Maha Sarakham University**
September 18-19, 2014

### September 18, 2014

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<tr>
<th>Time</th>
<th>Place: 1st Fl. Bld. 34</th>
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<tr>
<td>08.00-09.00</td>
<td>Registration</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Time</th>
<th>Place: Theater Hall (1st Fl. Bld. 34)</th>
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<tr>
<td></td>
<td><strong>Opening Session</strong></td>
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<tr>
<td>09.00-09.30</td>
<td><strong>Welcome performance:</strong> ASEAN Relations</td>
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<tr>
<td>09.30-09.45</td>
<td><strong>Welcome speech:</strong> Dr. Chumnian Pollaharn, Vice President of Rajabhat Maha Sarakham University</td>
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<td>09.45-10.15</td>
<td><strong>Opening Address by</strong> Assoc.Prof. Somchai Wongkasem, President of Rajabhat Maha Sarakham University</td>
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<td>10.15-10.30</td>
<td><strong>Coffee and tea break</strong></td>
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<td>10.30-11.15</td>
<td><strong>Keynote Speaker:</strong> “Integrated Creative Research for Local Development toward the ASEAN Economic Community” by Assoc.Prof. Dr. Prapat Thepchatree (Director, Center for ASEAN Studies, Thammasat University, Thailand)</td>
</tr>
<tr>
<td>11.15-12.00</td>
<td><strong>Invited Speaker:</strong> “Preparation and properties of inorganic-organic hybrids” by Prof. Dr. OGAWA Makoto from Waseda University, Japan</td>
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<tr>
<td>12.00-13.00</td>
<td><strong>Lunch</strong> (Ground Fl. Bld. 15)</td>
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<tr>
<td>13.00-14.00</td>
<td><strong>Invited Speaker:</strong> “The Application of Multicolor FISH Approaches” by Prof. Dr. Ahmed B. Hamid from Jena University, German</td>
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<td>14.00-15.00</td>
<td><strong>Invited Speaker:</strong> “Conservation of Forest Resources in Laos PDR” by Assoc.Prof. Dr. Seangdeuane WAYAKONE from National University of Laos, Laos PDR</td>
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<tr>
<td>17.00-20.00</td>
<td>Dinner</td>
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<th>Time</th>
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<tr>
<td>09.00-10.00</td>
<td><strong>Invited Speaker:</strong></td>
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<tr>
<td></td>
<td>“Vietnam’s National Foreign Language Policy for Integrating into ASEAN Community”</td>
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<td></td>
<td><em>by Dr. Tran Ba Tien from Vinh University, Vietnam</em></td>
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<tr>
<td>10.00-10.30</td>
<td><strong>Invited Speaker:</strong></td>
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<td>“Problem-Based Learning the 4 Core Areas (PBL4C): Interdisciplinary Science and Mathematics Learning towards ASEAN Community”</td>
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<td><em>by Dr. Warabhorn Preechaporn from SEAMEO RECSAM, Malaysia</em></td>
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<td>10.30-11.00</td>
<td><strong>Invited Speaker:</strong></td>
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<td></td>
<td>“Informal Sciences and Mathematics Learning through History and Culture towards ASEAN Community”</td>
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<td><em>by Mr. Marmon A. Pagunsan from SEAMEO RECSAM, Malaysia</em></td>
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<td>11.00-12.00</td>
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<td>“Cultural Relevancy and Science Education in the Philippines”</td>
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<td><em>by Prof. Dr. Vicente C. Handa from West Visayas State University, the Philippines</em></td>
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<td>12.00-13.00</td>
<td><strong>Lunch</strong> (Ground Fl. Bld. 15)</td>
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<td>13.00-14.00</td>
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<td>“Labor Market Needs of the Tourism and Hospitality Industry in Cambodia”</td>
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<td><em>by Dr. Mean Sothy from University of South-East Asia, Cambodia</em></td>
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<td>14.00-15.00</td>
<td><strong>Invited Speaker:</strong></td>
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<td>“Scientific Research in Universities of Vietnam in Present and Its Effects on Training Quality”</td>
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<td><em>by Assoc. Prof. Dr. Nguyen Huynh Phan from Institute for Research and Development of New Technologies (IRDNewTech), Vietnam</em></td>
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Invited Speakers Abstract
THE APPLICATIONS OF MULTICOLOR FISH APPROACHES

Ahmed Basheer Hamid
Molecular Cytogenetics, Institute of Human Genetics, Jena University Hospital,
Friedrich-Schiller-University Jena, Germany

ABSTRACT

Molecular cytogenetics and especially fluorescence in situ hybridization (FISH) banding approaches are nowadays standard for the exact characterization of simple, complex, and cryptic chromosomal aberrations within the human genome. Multicolor FISH (mFISH) assays are currently indispensable for a precise description of derivative chromosomes. Routine application of such techniques on human chromosomes started in 1996 with the simultaneous use of all 24 human whole-chromosome painting probes in multiplex-FISH and spectral karyotyping. Since then, multiple approaches for chromosomal differentiation based on mFISH assays have been developed. At present, the most frequently applied FISH banding technique are mFISH using all 24 human whole chromosome paints as probes and the multicolor banding (MCB/m-band) approach. MCB/m-band is based on region-specific microdissection libraries, producing changing fluorescence intensity ratios along the chromosomes. Also, centromere specific multi-color FISH (cenM-FISH or CM-FISH) is a recently developed multicolor FISH technique, which allows the simultaneous characterization of all human centromeres using labeled juxta-centromeric satellite DNA as probes. mFISH is a very powerful technique for detecting interchromosomal alterations (~3–10 Mb in size) of varying complexity, throughout the genome. As well as, it can often identify unknown markers, derivative chromosomes, and can resolve complex karyotypes. mFISH can also play a key role in the detection of critical (primary) chromosome anomalies in hematologic diseases, especially when the karyotype is complex or when the chromosome morphology is of poor quality. In addition, mFISH is necessary to distinguish different imbalanced situations detectable in array-based comparative genomic hybridization (aCGH); small supernumerary marker chromosomes (sSMC) have to be differentiated from insertions or unbalanced translocations. FISH banding methods were applied successfully not only in evolution and radiation biology but also in studies of the nuclear architecture and diagnostic purposes in prenatal, postnatal, and tumor cytogenetics, as summarized on the mFISH homepage (http://ssmc-tl.com/mfish.html). Thus, mFISH and FISH-banding methods were, are and will stay an integral part of cytogenetic research and diagnostics.

KEYWORDS: Applications, Multicolor Fish Approaches
CONSERVATION OF FOREST RESOURCES IN LAO PDR

Assoc. Prof. Dr. Seangdeuane WAYAKONE
National University of Laos, Laos PDR

Lao PDR, in the heart of the Greater Mekong Sub-Region (GMS), is surrounded by Cambodia, Myanmar, Thailand, Vietnam and the People’s Republic of China. Compared to its neighbours, Lao PDR is smaller in size, with a lower population, and is rich in natural resources. This combination of favourable geographic location and abundant natural resources means that Lao PDR has great potential for rapid socioeconomic development, even as it must ensure protection of its productive environment and ecosystems in the long term.

Forest cover in Lao PDR has decreased sharply while rehabilitation of forest is limited. The decrease was from 16.57 million hectare (ha) or approximately 70 percent of total land, in 1940, to 47 percent (more than 20% of canopy density) by now or about 7 million ha of forest area was lost or converted. Over the same period, forest stocking, species densities and size structure also have decreased and become more fragmented. It is implied that forest has been declined at an alarming rate as compared to an estimated 70 percent in the mid-sixties. Forest degradation, which encompasses decreases in stocking, changes in species composition and size structure, loss of wildlife and plant habitats, and declines in wildlife and plant population is, in many areas, as important as deforestation itself.

Despite lots of efforts have been made to sustain forest resource; number of problems, constraints remained unsolved; threatening and challenging for sustainability of forest resources and ecosystem in future. The major constraints and challenges for sustainable forest management include the decrease in forest quantity and quality; unsustainable forest harvesting practices; a need for more effective law enforcement; the persistence of poverty; Shifting cultivation practices and forest fires, lack of financial and human resources; and the continuing demand for wood, including conversion of forest land for other development projects.

To achieve 70 percent of forest cover by 2020 as targeted strategy and effective forest management, the government put intentions and efforts seeking for directions and mechanisms for sustainable development, three types of forest were classified – conservation, production and protection forest – and by now, 24 National Biodiversity Conservation Areas (NBCA) had been established which the total of 4,777,680 ha. Also, 137 sites of protection forest were established, covering 7,772,177 ha and production forest with the total of 1,664,000 ha (MONRE, 2014).

Government of Laos (GoL) has also made encouraging progress in improving the overall national framework for conservation and development; management instruments refer to legislation and policy or strategy and sustainable forest management mechanisms. A number of relevant laws and decrees, orders and guidelines are in place to support forest conservation, forest protection, restoration and management of the forestry business. In addition to the enabling policy and legal environment, the GoL is seriously considering its obligations and opportunities under the international environmental agreements to which it is party.

KEYWORDS: Conservation, Forest Resources, Lao PDR

XXVIII
VIETNAM’S NATIONAL FOREIGN LANGUAGES POLICY
FOR INTEGRATING INTO ASEAN COMMUNITY

Dr. Tran Ba Tien
Vinh University, Vietnam
tientb@vinhuni.edu.vn

ABSTRACT

ASEAN will become a common community in 2015, where there is free movement of skilled human resources in the region. In order to meet the language requirement for international communication, the government of Vietnam has revamped the foreign language policy which reshapes the way to teach English. The project focuses on re-training unqualified teachers of English, curriculum innovation, and organizing training workshops on teaching methods, language assessment, and information technology in language teaching. After three years’ implementation, the program has yielded some successes in improving the English teachers’ quality and curriculum innovation. There are still certain problems that face Vietnam’s English language education. The paper discusses the achievements and challenges of the national foreign languages 2020 project that is food for thought for policy makers.

KEYWORDS: ASEAN community, international integration, national foreign languages project, curriculum innovation, training workshop, language proficiency, tests.
PROBLEM-BASED LEARNING THE 4 CORE AREAS (PBL4C): INTERDISCIPLINARY SCIENCE AND MATHEMATICS LEARNING TOWARDS ASEAN COMMUNITY*

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ABSTRACT

As Lao Tsu had said, “Change is the only constant thing.” Curriculum change had been done in quest for setting the best learning opportunity to students. Notably these reforms included an equally important aspect of science and mathematics learning, universal harmonious values. This presentation will share our innovation of the Problem-Based Learning (PBL) approach into Problem-Based Learning the 4 Core Areas (PBL4C). The salient features of PBL4C which includes content knowledge, multidimensional skills, appropriate thoughts and universal harmonious values will be presented in the session. This presentation will also include our experiences in in-service training of science and mathematics teachers, teacher educators and ministry of education officials from Southeast Asian region. One of the highlights of PBL4C scenario that will be shared is on the establishment of a new city. In this scenario participants were asked to plan and developed a new city next to a river. After accomplishing the scenario, we asked the participants to connect the map and 3-D model of their new cities considering and connecting the river. At that juncture the participants realized that after all we are living in a connected world. Towards the end of the presentation we will share our observations, learnings and reflections in introducing this innovative approach. Our presentation will conclude with the contributions of this innovative approach in enhancing students learning for better ASEAN Community and global citizenship.

KEYWORDS: Science and Mathematics Learning, PBL4C, ASEAN Community, Interdisciplinary, Universal Harmonious Values
INFORMAL SCIENCE AND MATHEMATICS LEARNING THROUGH HISTORY AND CULTURE TOWARDS ASEAN COMMUNITY*

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ABSTRACT

This presentation will share our experiences in setting-up an informal science and mathematics learning in a cultural and historical museum in Malaysia. Specifically we will share our experiences on two (2) activities that we organised for Physics teachers from Indonesia and Mathematics teachers from Thailand. First, we developed a Physics learning activity guide based on the display inside the museum. The participants need to locate or identify the display or artifact inside the museum. Then, perform the physics activity and answer the question(s) on that particular display or artifact. This activity was performed by Physics teachers from Indonesia. Second, we developed a Mathematics learning template for a specified activity. We asked the participants to identify a particular display or artifact inside the museum. After which they have to identify the mathematics content manifested or exhibited by the display or artifact. And, they have to design a mathematics activity or question based on the display or artifact. This activity was performed by Mathematics teachers from Thailand. We noted that having the teachers from Indonesia and Thailand explore the museum in Malaysia provided an avenue for a better understanding of one’s culture and history. Furthermore, the participants were able to spot and discuss certain similarities to their respective cultures and that of Malaysia. Interestingly they were also able to identify and discuss the shared history of their respective countries and that of Malaysia. This presentation will conclude with the contributions of this innovative approach in enhancing students learning for better ASEAN Community and global citizenship.

KEYWORDS: Informal Science and Mathematics Learning, History, Culture, Museum, ASEAN Community,
CULTURAL RELEVANCY AND SCIENCE EDUCATION IN THE PHILIPPINES

Vicente C. Handa, Ph.D.
Division of Science Education, West Visayas State University, Philippines
E-mail: vhanda@wvsu.edu.ph

ABSTRACT

In the advent of an ASEAN integration in 2015, the Philippines has positioned itself in the globally competitive market by preparing scientifically literate citizens, both in the pre-college level and in science teacher education programs. In this paper, I will examine the new K-12 science education and science teacher preparation curricula. Specifically, I will discuss our attempts to infuse cultural relevancy in the preparation of prospective science teachers. I will highlight salient findings in our research on culturally relevant science teacher education most especially focusing on theoretical, practical, and research ideas surrounding the community-based science teacher education, service learning, cultural memory banking, socio-scientific issues, and the creation of hybrid spaces in science teacher preparation. Challenges and prospects for culturally relevant science teacher preparation and research shall be highlighted in this presentation.

KEYWORDS: Cultural Relevancy, Science Education
SCIENTIFIC RESEARCH IN UNIVERSITIES OF VIETNAM IN PRESENT
AND ITS EFFECTS ON TRAINING QUALITY

Assoc. Prof. Dr. Nguyen Huynh Phan
President of Institute for Research and Development of New Technologies,
Address: 17, Pham Kinh Vy, Ben Thuy ward, Nghe An province, Viet Nam
Email: huynhphan@viencongnghemoi.com

ABSTRACT

According to statistics from the Ministry of Education and Training, to the end of 2013, Vietnam has approximately 9,000 professors and associate professors; approximately 24,300 doctors and more than 100,000 masters. This number is constantly increasing by more current projects, training programs masters and doctors. As usual, they are the main force in scientific research. But only 633 Ph.D. to teach at the College, 8519 Ph.D. is the University lecturers. Many people have questioned: So remaining 15,000 Dr. Where they are? How are their science studying? Meanwhile, until March 2014, Vietnam had 471 universities and colleges, including 21 universities and colleges in the defense sector and the rest of the civil sector. Of this, 50% is the number of colleges. So in Vietnam has more than 230 universities. In this paper we talk about scientific research in university of Viet Nam in present and its effects on training quality.

KEYWORDS: Science Research, University, Quality, Education
LABOR MARKET NEEDS OF TOURISM AND HOSPITALITY INDUSTRY IN CAMBODIA

Mean Sothy
Ed.D. University of South -East Asia, Cambodia

ABSTRACT

This study aimed to study USEA graduates’ job outcomes in Phnom Penh and Siem Reap and industry needs in Phnom Penh, Siem Reap, and Sihanouk Ville. Two kinds of questionnaires were developed to collect data from USEA graduates and industrial personnel in three main tourist destinations in Cambodia namely Siem Reap, Phnom Penh, and Sihanouk Ville. The sample used in this research were 70 USEA graduates in 3 generations in the field of Tourism and Hospitality Management and 420 industry personnel in 3 regions of Cambodia namely Phnom Penh, Siem Reap, and Sihanouk Ville. The data were analyzed by frequency, percentage, mean, and standard deviation.

The research findings were as follows:

1. USEA Graduates’ Job Outcomes
    1.1 Relationship between Academic Studies and Labor Market Needs: The 3 highest aspects from their perspectives were 1) Quality of USEA education, 2) Teaching methodology of USEA lecturers, and USEA THM curriculum.
    1.2 Challenge Fields in Job Performance: The three main challenges for them in their job performance were 1) communication with superiors, 2) communication with external parties, and 3) technical skills.
    1.3 Key useful skills in job performance: The first three important skills were: 1) communication skill, 2) technical skill, and 3) organizational skill.
    1.4 Personal quality in job performance: There are many aspects for personal quality to be succeed in job performance were listed as follows 1) positive attitude toward work, 2) punctuality, 3) commitment, 4) creativity, and 5) responsibility and accountability.

2. Industrial Perspectives
    2.1 Employee Performance Evaluation: As the perspective of the employers in evaluate their employers, the first highest three aspects were 1) Dependability and reliability, 2) Job performance (quality), and 3) Job productivity (output).
    2.2 Lacking Skills: The employers thought that their staff is now lacking some skills as follow: 1) English, 2) Front office administration, and 3) Solving problems.
    2.3 Area of Tourism and Hospitality Management (THM) graduate needs within 5 years: In the next five years, the first three areas that they need were 1) Front office administration, 2) Service, and 3) Food and beverage.
    2.4 Needs of THM to be focused on: The main things that they need THM Curriculum to be focused on were 1) Practice, 2) English, and 3) Other languages.
    2.5 Essential skills to be succeed in job performance: The first three skills that they think their employee will be succeed were 1) Foreign languages, 2) Communication skills, and 3) Problem solving skills.

KEYWORD: Tourism and hospitality Management
**Oral Presentation**

**Session:** Education  
**Date:** September 18, 2014  
**Time:** 13.00-15.00  
**Room:** 150701, 7th Fl. (Bld.15)

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| 1  | Ed1  | IMPROVING ENGLISH VOCABULARY SKILLS VIA E-PORTFOLIOS  
Mrs. Wilawan Phornphatcharaphong                                                | 13.00-13.20| 2    |
| 2  | Ed2  | RAISE HIGH SCHOOL STUDENTS’ AWARENESS OF PROTECTING THE ENVIRONMENT BY TEACHING CHEMISTRY THROUGHOUT THE SOUTHERN PROVINCES OF VIETNAM  
Miss Thi Bich Hien Nguyen                                                        | 13.20-13.40| 3    |
| 3  | Ed3  | CURRICULUM DEVELOPMENT TRAINING WORKSHOP ABOUT DEVELOPING GAME APPLICATIONS FOR LEARNING TO TABLET FOR THE TEACHERS WHO TEACH IN PRATHOMSUKSA 1 THAT SUBORDINATED TO PRIMARY EDUCATION SERVICE AREA OFFICE OF MAHASAKHAM ZONE 2  
Mr. Pongphat Pakkalo                                                             | 13.40-14.00| 4    |
| 4  | Ed4  | APPLICATION OF ELECTRONIC DISTANCE LEARNING VIA TELEVISION (EDLTV) MEDIA FOR DEVELOPMENT OF LEARNING  
Miss Saowanee Khantilo                                                             | 14.00-14.20| 5    |
| 5  | Ed5  | A STUDY OF KNOWLEDGE AND SKILLS REQUIRED FOR INFORMATION TECHNOLOGY FOR UNDERGRADUATE STUDENTS AT UPPER NORTH-EAST RAJABHAT UNIVERSITY GROUP  
Miss Unyaparn Sirlapaninman                                                          | 14.20-14.40| 6    |
| 6  | Ed6  | WRITING PROCESS IN TEACHING ENGLISH AS A FOREIGN LANGUAGE AT VINH UNIVERSITY, VIETNAM  
Mrs. Huong Phan Thi                                                               | 14.40-15.00| 7    |
| 7  | Ed7  | DEVELOPMENT OF ELEMENTARY STUDENTS’ READING AND WRITING OF THE THAI CONTENT STRAND IN SMALL SCHOOLS  
Dr. Prasopsuk Rittidet                                                            | 15.00-15.20| 8    |

XXXIV
### Session: Education

Assoc.Prof.Dr. Kanok Samavardhana Chairperson

**Date:** September 19, 2014  
Dr. Mayureesirin Siriwan Committee  
Dr. Sombat Rittidet Committee

**Time:** 09.00-11.40

**Room:** 150701  
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| 1  | Ed8  | DEVELOPING AN EARLY CHILDCARE AND EDUCATION MODEL FOR THE ELDERS IN THE CHILDHOOD DEVELOPMENT CENTERS OF SUB-DISTRICT ADMINISTRATIVE ORGANIZATIONS IN MAHA SARAKHAM PROVINCE  
Dr. Thatsanee Nakunsong | 09.00-09.20 | 9     |
| 2  | Ed9  | FACTOR ANALYSIS OF SELF-PERCEPTION OF THE ABILITIES IN ICT APPLICATIONS OF UNIVERSITY STUDENTS OF THE BUSINESS ADMINISTRATION PROGRAM  
Mr. Piraprob Junsantor | 09.20-09.40 | 10    |
| 3  | Ed10 | THE RESULT OF THE STUDY OF A MODEL FOR COMPUTER ALGORITHMS DESIGN SKILLS BY USING WEB TECHNOLOGY 2.0 WITH A MENTOR TECHNIQUE  
Miss Sununta Klintawon | 09.40-10.00 | 11    |
| 4  | Ed11 | DEVELOPMENT OF MEDIA PRESENTATION ON LOCAL TRADITION KNOWN AS “HEET 12 KONG 14” WRITTEN IN TWO WRITTEN LANGUAGES AND FOUR SPOKEN LANGUAGES BY USING PARTICIPATORY ACTION RESEARCH INTEGRATED TO TEACHING FOREIGN STUDENTS  
Dr. Ladawan Wattanaboot | 10.00-10.20 | 12    |
| 5  | Ed12 | DEVELOPMENT OF VOLUNTEER CAMPING ACTIVITY DEVELOPMENT FOR EDLTV PROMOTION BY USING SCHOOL BASED ACTIVITIES, CASE STUDY: SCHOOLS IN MAHA SARAKHAM PRIMARY EDUCATION SERVICE AREA OFFICE  
Mr. Chaiyan Sakulthai | 10.20-10.40 | 14    |
| 6  | Ed13 | STUDENTS’ BEHAVIORS AND SELF DEVELOPMENT CLASSROOM LEARNING ENVIRONMENTS IN RAJABHAT MAHA SARAKHAM UNIVERSITY  
Dr. Toansakul Santiboon | 10.40-11.00 | 15    |
| 7  | Ed14 | THE PROBLEMS AND NEEDS FOR IMPROVING COMMUNICATIVE ENGLISH SPEAKING INSTRUCTION PROFICIENCY ICESIP OF RAJABHAT MAHASARAKHAM UNIVERSITY STUDENTS  
Miss Khankaeo Maprom | 11.00-11.20 | 16    |
| 8  | Ed15 | APPLYING THE "HANDS-ON" METHOD TO TEACH THE LESSON “REFRACTION OF LIGHT” FOR THE GRADE 9TH IN THE SECONDARY SCHOOL OF VIETNAM  
Mr. Van Vo Thong | 11.20-11.40 | 18    |
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<td>Mr. Thanonchat Insombut</td>
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<td>EXACT SOLUTION OF AVERAGE RUN LENGTH FOR SARIMA (P,1,Q) L PROCEDURE</td>
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<td>FACTORS AFFECTING KNOWLEDGE LEADING TO SAFETY CONSCIOUSNESS OF FIRST LEVEL EMPLOYEES IN INDUSTRIAL FACTORY</td>
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<td>Dr. Khemaree Rugchoochip</td>
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<td>THEORETICAL STUDY OF ADSORPTION MECHANISMS OF HEAVY METAL COPPER (Cu²⁺) ON SEED MATERIALS MADE FROM RED MUD</td>
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<td>Mr. Pham Xuan Cuong</td>
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<td>OPTIMIZATION OF RICE COATING PROCESS USING RESPONSE SURFACE METHODOLOGY</td>
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<td>Dr. Wasan Duangkhamchan</td>
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<td>THE DEVELOPMENT OF ONLINE EXAMINATION SYSTEM FOR THE Appropriateness OF THE LEARNERS’ KNOWLEDGE BASE LEVEL</td>
<td>14.40-15.00</td>
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<td>Mr. Chaiyan Sakulthai</td>
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<td>7</td>
<td>Sc7</td>
<td>ISOLATION AND IDENTIFICATION OF MICROORGANISMS METABOLIZING CENLLULOSE FROM NGHI YEN LANDFILL – NGHI LOC DISTRICT-NGHE AN PROVINCE</td>
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The 4th International Conference on Sciences and Social Sciences 2014: Integrated Creative Research for Local Development toward the ASEAN Economic Community (ICSSS 2014)  
September 18-19, 2014 at Rajabhat Maha Sarakham University

Session: Sciences and Applied Sciences
Date: September 19, 2014
Time: 09.00-11.00
Room: 150703 7th Fl. (Bld.15)

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September 18-19, 2014 at Rajabhat Maha Sarakham University

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**Assoc.Prof. Dr. Narongrit Sopa**  
**Chairperson**  
**Assoc.Prof. Theerachai Boonmatham**  
**Committee**

**Date:** September 18, 2014  
**Asst.Prof. Dr. Wimonmas Pathomvanichkul**  
**Committee**

**Time:** 13.00-16.00

**Room:** 150705  
7th Fl. (Bld.15)

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Assoc.Prof.Dr. Veerakit Saorom Chairperson  
Asst.Prof.Dr. Rungson Singhalert Committee  
Date: September 19, 2014  
Assoc.Prof. Krisda Sridhamma Committee  
Time: 09.00-11.00  
Room: 150705  
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#### Date: September 18, 2014

#### Time: 13.00-16.00

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September 18-19, 2014 at Rajabhat Maha Sarakham University

Session: Poster Presentation  Asst.Prof.Dr. Sunan Butsat  Chairperson
Date: September 18, 2014  Asst.Prof. Wijit Choawunklang  Committee
Time: 13.00-15.20  Asst.Prof.Kannika Thongdonpeang  Committee
Room: 1st Fl. (Bld.15)

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**Chairperson**

#### Asst. Prof. Dr. Chayakan Rueansuwan
**Committee**

#### Asst. Prof. Dr. Rungfa Lomnimuang
**Committee**

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**Assoc. Prof. Phanita Soonthornchai**  
**Date:** September 19, 2014  
**Asst. Prof. Dr. Chomphunut Makemunthong**  
**Time:** 09.00-11.40  
**Asst. Prof. Dr. Saman Ekpip**  
**Room:** 1st Fl. (Bld. 15)

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**Asst.Prof.Dr. Sunan Butsat**  
**Chairperson**

**Date:** September 19, 2014  
**Asst.Prof. Wijit Choawunklang**  
**Committee**

**Time:** 09.00-11.40  
**Asst.Prof.Kannika Thongdonpeang**  
**Committee**

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Oral Presentation Abstract
ABSTRACT

Paper-based portfolio development gained popularity around 1986 and with the escalating use of computers in language learning and teaching, these evolved into electronic portfolios. Electronic portfolios are collections of students’ work that may be posted online (called ‘webfolios’) or saved onto a CD-ROM. They help students in sharing their work with a larger audience by giving them a wider audience outside the classroom; offer authentic assessment tools; motivate students; and contribute to their language development. The purposes of this research was to compare learning achievement of English vocabulary Skill among Computer Engineering Students via e-portfolio approach with assessment level. The samples consisted of 30 students of Computer Engineering Program at Rajabhat Maha Sarakham University who register in English for Engineer Subject in the second semester of the 2013 academic year. The instrument used for data gathering was an examination to evaluate learning achievement. The statistics used for the data analyses were frequency distribution, mean, standard deviation, variance and t-test. The result of the study was the learning achievement that taught by the e-portfolio approach was significantly different at .05 levels.

KEYWORDS: Language Education, Vocabulary Skills, English Reading,
RAISE HIGH SCHOOL STUDENTS’ AWARENESS OF PROTECTING THE ENVIRONMENT BY TEACHING CHEMISTRY THROUGHOUT THE SOUTHERN PROVINCES OF VIETNAM

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ABSTRACT

Saving our plane tis a task not only for you, but also for the younger generation, our future leaders who must be aware of these issues. Environmental protection education should be a regular, continuous practice that penetrates into all subjects. Chemistry, with its advantages, will contribute in helping students’ awareness of their role in protecting the environment. This article suggests a number of measures to improve the efficiency of the teaching process, and to contribute to environmental protection education for students through teaching chemistry in high schools in the southern provinces of Vietnam.

KEYWORDS: Environment, Education, Environmental Chemistry, Project Based Learning, Teaching Chemistry
The 4th International Conference on Sciences and Social Sciences 2014: Integrated Creative Research for Local Development toward the ASEAN Economic Community (ICSSS 2014) September 18-19, 2014 at Rajabhat Maha Sarakham University

CURRICULUM DEVELOPMENT TRAINING WORKSHOP ABOUT DEVELOPING GAME APPLICATIONS FOR LEARNING TO TABLET FOR THE TEACHERS WHO TEACH IN PRATHOMSUUKSA 1 THAT SUBORDINATED TO PRIMARY EDUCATION SERVICE AREA OFFICE OF MAHASAKHAM ZONE 2

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ABSTRACT

The purposes of this research were 1) To create the Curriculum development training workshop about the developing game applications for learning to tablet. 2) To compare the achievement of development before and after the training of the participants about developing game applications for learning to tablet. 3) To study the applications development of teachers who attended the workshop. 4) To study about the satisfaction of the teachers who attended the developed training program. The representative sample were the 30 teachers who taught in Prathomsuksa 1 that subordinated to Primary Education Service Area Office Of Mahasarakham Zone 2 that selected from the registration training by specific method. The tools used in this study were 1) The curriculum training workshop about developing game applications for learning to tablet. 2) The assessment training workshop about developing game applications for learning to tablet 3) The questionnaire of satisfaction of those participants on the course of the workshop about developing game applications for learning to tablet. 4) The test for the participants who joined training workshop about developing game applications for learning to tablet. 5) The Evaluation about application for learning games to tablets of those who attended the workshop about developing game applications for learning to tablet. The statistics used in data analysis were basic statistics and t-test (dependent samples). The results of this study found that 1) The quality of curriculum training workshop about developing game applications for learning to tablet was at the highest level. 2) The average of post test was higher than pre – test and have statistically significant level at .05. 3) The assessment quality about game applications for learning of teachers who trained was at the highest level. 4) The satisfaction of the teachers who receiving training were at the highest level.

KEYWORDS : Curriculum, Training, Game, Tablet
APPLICATION OF ELECTRONIC DISTANCE LEARNING VIA TELEVISION (eDLTV) MEDIA FOR DEVELOPMENT OF LEARNING

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ABSTRACT

This research aims to 1) to application of electronic distance learning via television (eDLTV) media for development of learning, 2) to study the learning and understanding of the participated teachers in this training program, 3) to study the result of the participated teachers after the training program. Additionally, the satisfactions of the participated teacher in this program were studied. The sample groups, 30 mathematic teachers in the office of Mahasarakham primary education service area were selected. The tools of this research are handbooks of training syllabus, the assessment of training syllabus, test to assess the learning perception of the participated teacher, the assessment for application of participated teachers, the assessment for application of participated teachers and the satisfaction questionnaire for the participated teacher for the syllabus. The average values, standard deviation values and t-test (Dependent Sample) were used for the data analysis. The results found that 1) the quality of the training syllabus of the application of eDLTV media for learning to developed application on Number had highest appreciated level. 2) the participated teachers were acknowledged and understood after the training syllabus, which was the average mean score statistically significant at 0.05 levels 3) the quality of developed application had high quality level to highest level and 4) the participated teacher have satisfaction on the developed syllabus at the highest score.

KEYWORDS: eDLTV media, Application, Training Program
A STUDY OF KNOWLEDGE AND SKILLS REQUIRED FOR INFORMATION TECHNOLOGY FOR UNDERGRADUATE STUDENTS AT UPPER NORTH-EAST RAJABHAT UNIVERSITY GROUP

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ABSTRACT

The purpose of the study was to obtain the results of knowledge and skills required for information technology for undergraduate students at Upper North-East Rajabhat University Group by using the Delphi Technique. Questionnaires were administered to gather opinions from 33 lecturers for 3 rounds managed. Data were collected by an open-ended questionnaire in the first round and a five-point rating scale close-ended questionnaire in the second and the third round. Subsequently, the median, the interquartile range, and the absolute value of the difference between the median and the mode were used to analyze the data. The statement criteria employed to collect the data were the median value was greater than or equal to 3.50 in value, the interquartile range was less than or equal to 1.50 in value, and the absolute value of the difference between the median and the mode was less than or equal to 1.00 in value.

The results of the study were as follows:
1) There were problems and the improvement in information technology/computer aspect, lecturer aspect, undergraduate student aspect, and teaching and learning aspect.
2) There were 9 aspects with 23 indicators of information technology skills that students should be encouraged. The lecturers had high to highest level of mutual agreement, which are 12 indicators for highest level and 2 indicators for high level.
3) There were 15 procedures for supporting information technology/computers that students should be encouraged. The lecturers had high to highest level of mutual agreement, which are 12 procedures for highest level and 3 procedures for high level.
4) There were 12 items of computer media to support information technology/computers for students. The lecturers had high to highest level of mutual agreement, which are 3 items for highest level and 9 items for high level.
5) There were 17 methods to assess and evaluate information technology skills. The lecturers had high to highest level of mutual agreement, which are 7 methods for highest level and 10 methods for high level.

The findings showed skills in the use of information technology of the students who were not studied in the field of computers. The nine skills required for the students should be encouraged, which of the ordering those skills has found that the ability to use basic computer and Internet use is important as the first, so it need to be promoted the skills to meet the requirements.

KEYWORDS: Information Technology, Undergraduate Students, Upper North-East Rajabhat University Group
WRITING PROCESS IN TEACHING ENGLISH AS A FOREIGN LANGUAGE
AT VINH UNIVERSITY, VIETNAM

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ABSTRACT

Writing is an important part of a language learning course. This paper is aimed at providing a brief view of an application of writing process approach in teaching English as a foreign language for English major students at Vinh University, Vietnam. Presented in the first part is an introduction of Vinh University, the Department of Foreign Languages and its learners, and the teaching of English as a foreign language at the University. The second part provides a description of writing process approach, the activities involved by the teachers and learners in the process, the obstacles encountered during the implementation of the approach and solutions.

KEYWORDS: Writing Process, Teaching English
DEVELOPMENT OF ELEMENTARY STUDENTS’ READING AND WRITING OF THE THAI CONTENT STRAND IN SMALL SCHOOLS.

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ABSTRACT

This research aimed to 1) study problems regarding teaching elementary students' reading and writing of the Thai content strand in small schools, and 2) study guidelines for development of Thai reading and writing instruction for elementary students in small schools. This research was conducted by using mixed methodology for collecting both quantitative and qualitative data; and the instruments used in this research were (1) a questionnaire for studying problems in teaching elementary reading and writing of the Thai content strand, (2) a questionnaire of needs assessment for development of teaching and learning of elementary students' reading and writing in the Thai content strand, and (3) focus-group discussion. Scope of the Study: (1) the sample group for this study consisted of 36 participants, who were teachers, students or parents of the Koke Kor-Nong No Educational Quality Development Network, obtained through simple random sampling; while the target group were 24 students of Prathom Sueksa 1-2-3 of Ban Kud Kaen School purposively selected to participate in this study; (2) the research area was Ban Kud Kaen School, Tambon Nong No, Muang District, Maha Sarakham Province; and (3) the duration of research was September 2013 - September 2014. The statistics used in analyzing data for this study were mean, percentage, and standard deviation; and research results were descriptively presented.

Findings of the study are as follows:

1) Problems in elementary reading and writing instruction of the Thai content strand in small schools found at the highest level were (1) lacking teachers for every class, (2) students' low learning achievement, and (3) contents beyond students’ immediate local surroundings; while (4) lacking instructional media was found at high level. These problems were consistent with findings of the focus-group discussion: lacking teachers for ever class, having small numbers of teachers, students' low learning achievement, poor conditions of environment & school buildings, and small limited budgets.

2) Regarding needs assessment for development of elementary reading and writing instruction of the Thai content strand in small schools, the study revealed what the teachers, students, and parents viewed as necessary: (1) contents of immediate local surroundings appropriate to the students' age and level, e.g. tales, songs, picture description in writing, which were needed at the highest level; (2) cooperative teaching techniques and process teaching, needed at the high level; (3) using instructional media, including both published materials and technological media, which were also needed at the high level; and (4) informing students of their learning results. The results were consistent with findings of the focus group discussion, which revealed that the teachers, students and parents preferred learning contents of familiar local contexts for reading and writing in forms of folk tales, occupations, local foods, instructional media including both published materials and technological media, and continuous assessment of students' learning.

KEYWORDS: Development, Elementary Students, Thai Content Strand
DEVELOPING AN EARLY CHILDCARE AND EDUCATION MODEL FOR THE ELDER IN THE CHILDHOOD DEVELOPMENT CENTERS OF SUB-DISTRICT ADMINISTRATIVE ORGANIZATIONS IN MAHA SARAKHAM PROVINCE

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ABSTRACT

The objectives of this research were 1) to analyze early childcare and education models of the elders in the childhood development centers of sub-district administrative organizations in Maha Sarakham Province, 2) to develop an early childcare and education model for the elders, and 3) to evaluate the model. The research methodology consisted of three phases: 1) analysis of needs and models of early child care development for the elders, 2) design and development of an early child care training model for the elders, and 3) implementation and evaluation of the training model. The study showed that four early childcare models for the elders were composed of physical development with ten indicators, mental development with nine indicators, social development with eleven indicators and moral development with nine indicators. The IOC index of the training topics and objectives assessed by the experts was .84. The data were collected by interviewing three hundred and forty five elders, and the findings showed that the lowest level of the early childcare development was an intelligent development and moral development. The activities of the intellectual development were composed of using visual aids, folktales and local toys (\( \bar{X} = 1.48 \)), and telling folktales, reciting verse (\( \bar{X} = 1.41 \)). The activities of moral development consisted of the local toys (\( \bar{X} = 1.46 \)). The child care training models consisted of three sets: two sets of the intellectual development for early childhood consisted of lullaby, imaginary world, telling folktales and reading books, and one set of the moral development consisted of local materials and toys. The study showed that the average level of the appropriateness of early child care training model assessed by the experts was very high (\( \bar{X} = 4.61 \)).

The early child care training model was implemented to twenty five elders, and evaluated by the experts and trainees. The findings showed that the average level of the appropriateness of the model assessed by the elders was very high (\( \bar{X} = 4.65 \), S.D. = .50). Regarding the practical application, it was found that the elders made the toys from local materials. The lullaby and tales were also frequently used for childhood development.

KEYWORDS: Childcare Development Centers, Elders
FACTOR ANALYSIS OF SELF-PERCEPTION OF THE ABILITIES IN ICT APPLICATIONS OF UNIVERSITY STUDENTS OF THE BUSINESS ADMINISTRATION PROGRAM

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ABSTRACT

The purpose of the research was to analyze the key factors of self-perception of the abilities in ICT applications of university students of the business administration program through an exploratory factor analysis. The sample was four hundred and eighty five students of the business administration program, the general management program, the international business management program, and the marketing program. The study showed that the key factors of self-perception of the abilities in ICT applications of the students were composed of (1) introduction to computer applications (2) application of database (3) the internet (4) hardware (5) ICT application for presentations (6) application of software (7) virus prevention (8) applications of general applied program (9) technique for information management program.

KEYWORDS: Self-Perception, ICT Applications, Factor Analysis
THE RESULT OF THE STUDY OF A MODEL FOR COMPUTER ALGORITHMS DESIGN SKILLS BY USING WEB TECHNOLOGY 2.0 WITH A MENTOR TECHNIQUE

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ABSTRACT

This research had its aims 1) to study the elements of a model for developing computer algorithms design skills by using the Web technology 2.0 with a mentor technique, and 2) to develop the activities of a model for developing computer algorithms design skills by using web technology 2.0 with the mentor technique. The target group in research was 9 experts with the expertise in assessing the suitability. The tool used in the research was a questionnaire of expertise on the model for developing the skill, activities and tools of activities that the researcher developed. Statistics were an average and standard deviation.

The research results showed that: 1) the elements of the model for developing computer algorithms design skills by using the Web technology 2.0 with the mentoring technique were consisted of five components: 1) related principles, 2) concepts and theories, 3) skill development, 4) information technology and communication, and 5) learning outcomes. The expertise on the elements of the model in average was at the highest level )\( \bar{X} = 4.79, \text{ S.D.} = 0.41 \). 2) The result of the activity development and tools of activities found that the activities were consisted of 3 phases: 1) preparation, 2) skill development, and 3) following-up, and the tools of activities consisted of 1) a manual for mentors, 2) a manual for mentees, and 3) a manual for instructors. The expertise on the activities and tools developed in average was at the highest level )\( \bar{X} = 4.63, \text{ S.D.} = 0.50 \).

KEY WORDS: Skill Development, Computer Algorithm Design, Web Technology 2.0
DEVELOPMENT OF MEDIA PRESENTATION ON LOCAL TRADITION KNOWN AS “HEET 12 KONG 14” WRITTEN IN TWO WRITTEN LANGUAGES AND FOUR SPOKEN LANGUAGES BY USING PARTICIPATORY ACTION RESEARCH INTEGRATED TO TEACHING FOREIGN STUDENTS

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ABSTRACT

This research aimed to 1) develop electronic media presenting the local tradition known as "Heet 12 Kong 14" written in two languages and four spoken languages by using participatory action research, 2) promote the implementation in accordance with the university mission through research of arts and culture to serve the community and integrated teaching for foreign students, and 3) build a community network to promote the knowledge of the local tradition "Heet 12 Kong 14" into the international and ASEAN communities. The research selected one of the local traditions “Boonkoonlan” which was held during on the period of the study from late February to early March. Data was collected at Ban-Can sub-district, Wapi Pathum district, Maha Sarakham Province. The instruments consisted of an in-depth interview form, electronic media, evaluation form and satisfaction questionnaire. The research was conducted as follows: 1) plan the local tradition, time management and target group, 2) design media components, and tools, 3) collect data, 4) develop the media and evaluate them by experts, 5) integrate the knowledge with teaching and also serve the community, and 6) reflect the developed media and publish. The statistics used in the research were mean and standard deviation.

The results of the research showed that: 1) the electronic media of local tradition “Heet 12 Kong 14” was held in late February to early March. The electronic media was written by two languages: Thai and English and four spoken languages: Official Thai, E-sarn dialect, Vietnamese and English. There were six components of electronic media: project, history, rite, activity pictures, videos, and references. The quality evaluation by five experts indicated that: 1) the electronic media were rated at the highest level in appropriateness (X=4.90), 2) the implementation with 18 students under the Faculty of Information Technology including 8 foreign students showed that the students were satisfied with the developed media at the highest level (X=4.62), and 3) the network building with the community to enhance the knowledge of the local tradition ‘Heet 12 Kong 14’ into the international and ASEAN communities was published on the website: www.itrmu.net/GreenIT. According to forty teachers who had participated in the project, they were satisfied with the developed media at the highest level (X=4.70).
The experts, students and service receivers suggested that the Thai traditions and customs known as ‘Heet 12 Kong 14’ should be carry out all the traditions for twelve months and all ASEAN languages in order to enhance E-sarn wisdom through international and ASEAN communities.

KEYWORDS: Media Presentation, Local Tradition, Heet 12 Kong 14, Boonkoonlarn tradition, ASEAN Communities
DEVELOPMENT OF VOLUNTEER CAMPING ACTIVITY DEVELOPMENT FOR eDLTV PROMOTION BY USING SCHOOL BASED ACTIVITIES. CASE STUDY: SCHOOLS IN MAHA SARAKHAM PRIMARY EDUCATION SERVICE AREA OFFICE.

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ABSTRACT

This research had its aims to 1) develop the elements used in the activities of the volunteer camp to diffuse the eDLTV to the community by using the schools as the base, 2) to develop the stages of the activities of the volunteer camp to diffuse the eDLTV to the community by using the schools as the base, 3) to develop the activity manuals of the volunteer camp to diffuse the eDLTV to the community by using the schools as the base, and 4) to evaluate the quality of the elements, stages and manuals developed. The target group included 9 experts from Rajabhat Maha Sarakham University, King Mongkut’s University of Technology North Bangkok, Phranakhon Rajabhat University and Maha Sarakham Educational Service Area Office. These experts were specifically recruited with their expertise in computer technology and eDLTV diffusion. The tools used in this research were 1) an expertise questionnaire on the elements of the volunteer camp, 2) an expertise questionnaire on the stages of the volunteer camp and 3) an expertise questionnaire towards the manual of the volunteer camp. The statistics used in this study were the average (X) and standard deviation (S.D.). The results showed that the elements of the activities of the volunteer camp had 4 aspects: 1) policies, 2) application of ICT for education, 3) concepts of the community development by camping, and 4) cooperative institutes. There were 4 stages of activity: 1) presentation, 2) learning by demonstration, 3) assigned task performance and 4) result discussion. The results of the study of the expertise on suitability of the elements of the volunteer camp in an overall perspective showed that the suitability was in the highest levels (X = 4.67, S.D. = 0.03). The results of the study of the expertise on the suitability of the stages of the volunteer camp in the overall perspective showed that the suitability was in the highest levels (X = 4.72, SD = 0.08). The tools used in the research were the manual for organizing the volunteer camp to diffuse the eDLTV to the community by using the schools as the base. The results of the study of the expertise on the suitability of the tools in the overall perspective showed that the suitability was in the highest levels(X =4.65,SD=0.48).

KEYWORDS: eDLTV Media, Volunteer Camp, Diffusion
STUDENTS’ BEHAVIORS AND SELF DEVELOPMENT CLASSROOM LEARNING ENVIRONMENTS IN RAJABHAT MAHA SARAKHAM UNIVERSITY

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ABSTRACT

The purposes of this study were investigated improving and developing students’ interpersonal behaviors and their self developments of their learning achievements in the course of human behavior and self development (subject code:1200006) in the second semester of the academic year 2013 in Rajabhat Maha Sarakham University with the administered to sample size of 88 students from 4 learning groups; two groups of environment science, computer engineering, and industrial management technology, Using the 3-learning instrument questionnaires of their 3-assessing actual perceptions in three times (in December, January, and February), 12-learning test scores, students’ reporting activities’ scores, student’s work sheets and assignments, and final test score were analyzed and assessed students’ learning achievements in term of students’ grades by the Microsoft excel’s and the SPSS system’s analysis. Statistically significant differences were found between the students’ perceptions of actual 1, actual 2, and actual 3 environments and indicate that validities and reliabilities to student interpersonal behavior and self development in human behavior and self development classes. Associations between students’ perceptions with their learning achievements with the Students’ Learning Achievements Scores (SLAS) also were found. The multiple correlations $R^2$ are significant for the 3-actual questionnaires and considered associations with the student’s value indicates that 18%, 36%, and 59% of the variance in students’ learning achievements. It was concluded that, after students learning, work sheets and assignments well-done, always sat in class, built ideas for reporting activities, and preparing her/his self development to learning, and description with their group, they should ensured and improved themselves in their learning achievement successfully. Based on all findings, suggestion for improving the human behavior and self development class with students’ perceptions are provided and developed students’ learning achievement.

KEYWORDS: Students’ behavior, Self Development, Learning Environment
THE PROBLEMS AND NEEDS FOR IMPROVING COMMUNICATIVE ENGLISH SPEAKING INSTRUCTION PROFICIENCY: ICESIP OF RAJABHAT MAHA SARAKHAM UNIVERSITY STUDENTS

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ABSTRACT

The objective of this study was to investigate the state, and the needs of communicative English speaking proficiency Instruction of Rajabhat Maha Sarakham University undergraduate students, and give suggestions for solving any problems found. It was carried out by using qualitative and quantitative research methods. The population consisted of 4 Head of English Department, 15 English lecturers from the Faculty of Education and the Faculty of Humanities and Social Sciences, and 43 third year students, in Special Education program, Faculty of Education in the first semester, 2014 academic year. The population was selected by the simple random sampling technique. The instruments employed in this study were rating-scale questionnaire, and a structural in-depth interview. The study results revealed that the students had unsatisfactory their English skills as follows: They had problems in speaking, listening, vocabulary, writing, grammar and reading at 97.7%, 90.70%, 83.7 %, 79.1%,76.70%, and 72.09% respectively.

The English proficiency satisfied students were as follow; 1) their English skills proficiency in listening, vocabulary, grammar, writing, and reading were at moderate and low levels (\(\bar{x} = 2.02, 2.19, 2.40, 3.00, 3.07, 2.84,\) and \(3.16\)). 2) Their communicative English proficiency were at a low level, ranged from the lowest to the low level were as follows: they were shy and lacked of confident, they could teach in English, they had opportunity to use English in daily life, they could express their opinion or give some reason, they could communicate with the foreigners in many situations 6) they could speak in and out of their classroom and they could pronounce the words, phrases, and sentences at the low level (\(\bar{x} = 1.16, 1.19, 2.09, 2.14, 2.23,\) and \(2.49\)).

English satisfied the students were as follow; 1) they were interested in practicing English skills, such as speaking, searching information via internet at the highest level (\(\bar{x} = 4.51\); 2) they were aware of recognized the importance of English at a high level (\(\bar{x} = 4.42\); and 3) they continue learning English as life long learning at a moderate level (\(\bar{x} = 2.74\)).

The classroom management satisfied the students were as follow; they liked English lecturers the most at high level at 4.00, they had enjoyed learning English at high level (\(\bar{x} = 3.53\). They satisfied the lecturers’ teaching skills and techniques, classroom atmosphere, learning activities, the evaluation at moderate level (\(\bar{x} = 3.30, 3.23, 3.05,\) and \(3.05\)). Thai and native speaker lecturers satisfied the students at the highest level (\(\bar{x} = 4.56\)), only Thais were at high level (\(\bar{x} = 4.16\)), and the only native speakers lecturers was at moderate level (\(\bar{x} = 3.63\)).

The content of the English course satisfied the students at high level (\(\bar{x} = 4.00\), the learning activities that motivated the students to speak English in classroom, the classroom
atmosphere, funs, and evaluation of English satisfied were at moderate level ($\bar{x} = 3.30, 3.23, 3.12, 3.05$)

The English curriculum content satisfied the students at moderate level as follow; the students could applied the content from the lessons for communication in real situation, it was a modern content, it was useful for studying in higher degree, and it could earn their life ($\bar{x} = 3.60, 3.51, 3.40, 3.21$), and it was used in their daily life was at lowest level ($\bar{x} = 2.95$).

The students’ needs in language skills were: speaking skill at the highest level, ($\bar{x} = 4.51$) and vocabulary, listening skill, reading, writing and grammar were at high level ($\bar{x} = 4.30, 4.28, 3.67, 3.47, \text{ and } 3.37$).

The needs of the high technology and new multimedia which support their learning skills, convenience and easiness of using instructions, learning with variety motivate activities in classroom for improving their speaking skill, and the new instruction model satisfied them at the highest level satisfied the student at the highest level ($\bar{x} = 4.67, 4.53$), and self- study via the internet was at high level ($\bar{x} = 4.00$).

**KEYWORDS:** Improving Communicative English, Instruction, Rajabhat Maha Sarakham Students
APPLYING THE "HANDS-ON" METHOD TO TEACH THE LESSON “REFRACTION OF LIGHT” FOR THE GRADE 9TH IN THE SECONDARY SCHOOL OF VIET NAM

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ABSTRACT

The primary goal of the modern education in the context of the gradual domination of knowledge economy in the world is to bring the world outlook and to instill the passion in the creation activities for students. "Hands-on" is an active and suitable method for organizing the teaching at the primary and secondary education level, which is the early stage of knowledge discovery and formation of basic concepts of the science subjects. The essence of this method is that teacher will support by asking students to do the test by themselves, to observe it, to carry out the paper research or to conduct the investigation in order to find the answer to the problems in their life and then teacher will help them get the real knowledge afterwards.

This approach, which is referred to "la main à la pate" in French and “hands-on” in English, is a scientific method based on the fact-finding and research and is applied to the teaching of the natural sciences. It was initiated by Professor Georges Charpak in 1995 (Nobel Prize in Physics, 1992), tested in France in 1996, 1997 and have been introduced to the other countries since 1998.

Introduced and launched as pilot trial in Vietnam in early 1999, 14 seminars on how to apply it to some lessons have been hold since 2000 by Vietnam teacher’s Association in conjunction with the Department of Education and Training at the Provincial Level. Cities such as Da Nang, Ha Noi, Ho Chi Minh city have tried this model at some Primary Schools and Secondary schools. However, activities have been limited to the pilot scale without mass inclusion in the grass root levels and without establishing a system of designed lessons based on hands-on. [2], [6]; [7]; [8].

Therefore, for this paper, I would like to share the results of the application of this method in teaching an optical lesson- physics of the grade 09th –secondary school.

KEYWORDS: Hand-On Method, Refraction of Light
PREPARATION AND CHARACTERIZATION OF BIODEGRADABLE POLY (L-LACTIDE) FILMS BLENDED WITH HIGH MOLECULAR WEIGHT POLY (PROPYLENE GLYCOL)

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ABSTRACT

Biodegradable poly(L-lactide) (PLA) produced from renewable resources is of interest for using in film packaging applications. However, PLA films with sufficient flexibility can be obtained by plasticizer blending. In this research, PLA with molecular weight of 95,000 g/mol was synthesized by ring-opening polymerization of L-lactide. The PLA was then blended with poly(propylene glycol) (PPG) having molecular weight of 4,000 g/mol in various PPG ratios. The tensile strength and Young’s modulus decreased, whereas the elongation at break increased as the PPG blend ratio increased. Phase separation of PLA/PPG blends induced void formation in PLA film matrix. The glass transition and crystallizing temperatures of PLA slightly decreased but melting temperatures did not change as the PPG was blended. This indicates that PLA/PPG blend films with controllable mechanical properties might be useful candidate as biodegradable films for packaging applications.

KEYWORDS: Biodegradable polymers, Poly (lactic acid), Poly (propylene glycol), Plasticizer
EXACT SOLUTION OF AVERAGE RUN LENGTH FOR SARIMA (P,1,Q) L PROCEDURE

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ABSTRACT

The exponentially weighted moving average (EWMA) control chart is very effective in detecting small shifts in process mean and vastly used in a great variety of practical applications such as economic industry health and in other areas. There are several situations in which the process is serially correlation such as in the chemical and process industries. For example, the dynamics of the process will induce correlations in observations that are closely spaced in time. The Average Run Length (ARL) is a traditional measurement of the performance of control chart. The main purpose of this paper is to derive analytical solutions for the ARL of a EWMA control chart for Seasonal Autoregressive Integrated Moving Average of order P,1,Q process (SARIMA (P,1,Q)L with Exponential white noise. In this paper, the ARL is the unique solution to the Integral Equation under some weak regularity conditions. Checking the accuracy of results, the results obtained from exact solutions with Numerical Integral Equation based on Gauss-Legendre rule were compared. An excellent agreement between the exact solutions and numerical solutions was found. This fact is an additional indication that the exact solutions are sufficiently high accuracy.

KEYWORDS: Seasonal Autoregressive Moving Average, Exponentially Weighted Moving Average (EWMA), Average Run Length (ARL).
FACTORS AFFECTING KNOWLEDGE LEADING TO SAFETY CONSCIOUSNESS OF FIRST LEVEL EMPLOYEES IN INDUSTRIAL FACTORY

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ABSTRACT

Research topic: Factors affecting knowledge leading to safety consciousness of first level employees in industrial factory. The objectives of this study are 1) To study factors affecting knowledge leading to safety consciousness of first level employees in industrial factory. 2) To study problems and obstacles of employee in task performing in industrial factory. 3) To study suggestions from first level employee and management team in industrial factory. Samples composed of first level employees in Navaanakorn industrial estate, Rojana, Bangpoo, and Samutsakorn totally 1600 employees. Questionnaires are the instruments for data collection. Statistics as utilized in data analysis are percentage, average, standard deviation, T-test, F-test and multiple regressions.

Result indicates the following: Factors level affecting knowledge leading to safety consciousness of first level employees in industrial factory which composed of safety realizing, accident protection, safety organization, roles of management towards safety, roles of supervisor towards safety, Psychology in safety motivating, safety training rank in the middle. All factors above have relation with knowledge leading to safety consciousness of first Level employees in industrial factory.

Mental and physical readiness in working, industrial group, task group have no relation with knowledge leading to safety consciousness of first level employees in industrial factory. However, working period in all industrial estates has relation with knowledge leading to safety consciousness. Gender has relationship with knowledge leading to safety consciousness in Navanakorn industrial estate only. Age have no relation with knowledge leading to safety consciousness only Bangpoo industrial estate. Education has relation to knowledge leading to safety consciousness at both Rojana and Bangpoo industrial estate. Average monthly income has relation with knowledge leading to safety consciousness in both Rojana and Samutsakorn industrial estate. Problems, obstacles, and suggestions from employee are details as follows: Safety training for all employee ranks the highest. Second not enough lighting affecting eyesight, third environmental temperature adjusting appropriately and thoroughly.

KEYWORDS: Knowledge Leading to Safety, First Level Employees, Industrial Factory
THEORETICAL STUDY OF ADSORPTION MECHANISMS OF HEAVY METAL COPPER (Cu\(^{2+}\)) ON SEED MATERIALS MADE FROM RED MUD

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ABSTRACT

Seeds of materials made from red mud is good material capable of handling heavy metal pollution in wastewaterigh adsorption capacity, low price, in accordance with the conditions and criteria of adsorbent particles).

In this report we present the results of research mechanisms of adsorbed heavy metal Copper (Cu\(^{2+}\)) on seed material made from red mud style complex \([\text{Cu(H}_2\text{O)}_6\text{]}^{2+}\) interacts with the surface Hydrated -FeOOH (101) through hydrogen bonding.

KEYWORDS: Theoretical study, Adsorption mechanisms, Red mud
OPTIMIZATION OF RICE COATING PROCESS USING RESPONSE SURFACE METHODOLOGY

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ABSTRACT

The objective of this study was to optimize the operating condition of the top-spray fluidized bed coating process on rice and to investigate the effects of coating factors on physical properties of coated rice. The coating factors tested in this work consisted of inlet temperatures (60-80°C), spraying times (5-15 min) and feed rates (6-10 ml/min). Maltodextrin solution (20 °Brix) mixed with red food color was used as coating solution. Response surface methodology was used to describe the effects of all factors with respect to responses including %fissure, %head rice yield (HRY) and chroma. Full factorial design was used for the experimental design with the use of three levels. In addition, the subsequent experimental data was fitted to quadratic regression models to describe the relationship between all factors and each response. The surface plots obtained from the experimental results revealed that all factors reasonably affected the physical properties of the coated rice. The increasing inlet temperature resulted in higher percentage of fissure. The %HRY and chroma was not affected by the inlet temperature. When the spraying time increased, it was found that chroma was higher, while %fissure and %HRY were not affected by this parameter. Furthermore, the coating solution feed rate led to a decrease in %fissure and %HRY, while the chroma increased. With the respect to the regression of determination ($R^2$), the quadratic models were found to be the suitable model for each response with high $R^2$ ranging from 0.83 to 0.93. Based on maximized %HRY and chroma, and minimized %fissure, the maximum desirability of operating condition was 0.51 at feed rate of 8.80 ml/min, spraying time of 10.23 min and inlet air temperature of 60°C.

KEYWORDS: Fluidized-Bed, Coated Rice, Spray Granulation, Desirability, Fissure, Chroma, Head Rice Yield
THE DEVELOPMENT OF ONLINE EXAMINATION SYSTEM FOR THE APPROPRIATENESS OF THE LEARNERS’ KNOWLEDGE BASE LEVEL

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ABSTRACT

The objective of this research is to develop and find the effectiveness of an online examination system. This is so the appropriate learning styles will be set for the learners’ knowledge base. The operation systems approach consist of 5 steps; which are, 1) Analyze 2) Design 3) Development 4) Implement and 5) Evaluation. The target group is experts in information technology specifically 5 professors from computer and information technology group, Science and technology Faculty, Rajabhat Maha Sarakham University. The research tool consist of 1) online examination system for appropriate learning of the learners’ knowledge base 2) Evaluation form for the experts to the online examination system for appropriate learning of the learners’ knowledge base. This has been developing to analyze and find the mean and the standard deviation. It is found that the developed system can classify the level of learners’ knowledge according to their own potential from the lesson learned in class. There are 3 levels that the researcher has been developed; which are low level of knowledge base, average level of knowledge base, and high level of knowledge base. The quality is consider to be in the high level (X=4.40, S.D. = 0.20)

KEYWORDS: Online examination system, Knowledge base management.
ISOLATION AND IDENTIFICATION OF CELLULOLYTIC MICROORGANISMS FROM NGHI YEN LANDFILL – NGHI LOC DISTRICT- NGHE AN PROVINCE

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ABSTRACT

Cellulases are useful in many industrial and environmental applications. They are used to convert cellulosic biomass and cellulosic waste to glucose. Cellulose accounts for about 50% (w/w) of the suspended solids transported to waste water purification plants. It is degraded mainly by aerobic Gram negative bacteria. Cellulolytic bacteria have been isolated and widely studied; for example in soil systems, during degradation of sugar cane stubble, in compost systems and in paper and pulp industry waste water. The recent studies showed that cellulase enzyme from microorganism are greatest potential to be used for natural cellulose. We have isolated nine strains from Nghi Yen landfill which have high cellulase activity. Through measure the enzyme activity, result showed that isolated strains have ability to hydrolyze straw waste, copy paper in high level.

KEYWORDS: Isolation and Identification, Cellulolytic microorganisms
BACTERIAL DISEASES OF CULTURED HYBRID CATFISH
(Clarias macrocephalus x Clarias gariepinus)
IN MAHA SARAKHAM PROVINCE

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ABSTRACT

Study on bacterial diseases in hybrid catfish (Clarias macrocephalus x Clarias gariepinus) was investigated in fish farm, Maha Sarakham Province. Fish samples were collected from 4 farms on August - October 2013. Bacteria were identified as 2 strains of Aeromonas hydrophila, 3 strains of Enterobacter cloacae, 1 strain of Pseudomonas sp. and 1 strain of Vibrio fluvialis. Water quality monitoring was optimum levels for rearing fish except for ammonia value was higher than optimum range.

Efficacy of six antimicrobial drugs against pathogenic bacteria included amoxycillin, chloramphenical, enrofloxacin, oxolinic acid, oxytetracyline and sulphamethoxazole were studied. The results showed that A. hydrophila strains were sensitive to chloramphenical and enrofloxacin. Therefore, E. cloacae strains were sensitive to chloramphenical and enrofloxacin. Otherwise, Pseudomonas sp. and V. fluvialis were sensitive to chloramphenical and enrofloxacin. It can be concluded that enrofloxacin was a best drug for preventing the bacteria in cultured hybrid catfish.

KEYWORDS: Antimicrobial drugs, Bacterial diseases, Hybrid catfish, Maha Sarakham
STUDY ON CONSERVATION OF ENDANGERED SPECIES OF HERBAL PLANTS TO SUPPLY MEDICINAL MATERIALS IN NGHE AN PROVINCE, VIETNAM

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ABSTRACT

Vietnam has a diverse vegetation offering people a valuable medicinal resource. Each Vietnamese ethnic group has its own folk experiences in the use of plants as medicines. It should be noted that these experiences are getting lost and the number of valuable plants is becoming rare, a few number of those are recorded in Vietnam Red Book. Therefore, the investigation of the medicinal plants on the basis of traditional experience of local people including in Nghe An province is urgent action for conservation. Medicinal plants in moutainous areas of Nghe An province were identified as following: 287 species, 204 genera, 87 families and 4 branches. Of these, the dominant branch was Magnoliophyta including 270 species (94.08%). Herbaceous plants were the most frequently used as medicines (93 species, 32.40%); secondary group was shrub (90 species, 31.36 %). The parts of plants which were the most frequently used as medicines were leaf (140 species, 37.94%) the whole of plant (91 species, 24.66%) root (34 species, 9.21%) and stem (33 species, 8.94%). The group of diseases which were treated with medicinal plants were diseases related to digestion (54 species, 18.82%), skin (39 species, 13.58%), bone and muscle (27 species, 9.41%), and health improvement (25 species, 8.72%). Nineteen medicinal species were determined as endangered species and need priority for conservation. The chemical compositions of essential oil of three species (Servenia monophylla, Glycosmis craibii, and Zanthoxylum euvodialfolium) were analyzed. Several essential oil such as b-myrcen, citronellal, a-pinene, b-bisabolene can act as antioxidant, antivirus agents.

KEYWORDS: Medicinal plant, Endangered species, Conservation, Nghe An, Vietnam
SELECTION OF GREEN PAPAYA (Carica papaya) var. SRI RAJABHAT IN MAHA SARAKHAM AREAS

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ABSTRACT

Selection of green papaya (Carica papaya) var. Sri Rajabhat in Maha Sarakham areas aims to study the growth, purity, uniform, yield and ring spot disease resistance. Four papaya varieties Sri Rajabhat, Krang (red flesh), Kaek Dam Kosumpisai and Kaek Dam Kalasinv were investigated. 400 plants cultivated during October 2012 to September 2014. The results showed that, Sri Rajabhat papaya has highest trees and average yield per tree these figures are not consistent with figures in Table 1 average yield per Rai these figures are not consistent with figures in Table 1. The fresh weight of these figures are not consistent with figures in Table 1, the fresh thickness 2.4 cm and, firmness at 8.46 Newton. They have 57% disease and the level of disease at 5.40. Ring spot disease in laboratory test on Krang (yellow flesh) has zero of disease while Kaek Dam Kosumpisai have 98% disease.

KEYWORDS: Firmness, Green Papaya, Height Tree, Selection, Ring Spot Disease
A CONCEPTUAL METAPHOR SEXUAL LOVE IS A UNITY 
IN VIETNAMESE PROVERBS AND FOLK VERSES

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ABSTRACT

Love is an interesting linguistic phenomenon which has attracted the attention of many linguists. It has been subject to a great deal of research. There have been proposed various discussions about the question by different linguists as it has been viewed differently from various perspectives.

Love is embodied in the different categories: patriotic love, parental or family love, love between friends, sexual (erotic) love. Sexual love occurs when physical and sexual attraction bring the participants together. It causes the proverbial sparks to fly, and the people to become romantically or sexually involved. The relationship can be deepen into true love, in which case philos style love comes along to offer companionship as well as romance for the partners, and eventually to a commitment such as marriage and family. Sexual love, especially in Vietnamese proverbs and folk verses, has not been discussed in the perspective of cognitive linguistics.

Proverbs and folk verses are pithy sayings that express some traditionally held truth. They illustrate the wisdom of people in the part and conduct which have become an essential and enduring part of daily conversations. Language and culture are inextricably linked. One way to understand a culture is to look at the language, of which proverbs and folk verses provide an important window to its heritages. Love is one of the nucleus of civilization and the basic unit of society, in which sexual love is the starting point. Therefore, a thorough knowledge of how a sexual love is a unity metaphor is conceptualized in Vietnamese proverbs and folk verses will of theoretical and practical values.

KEYWORDS: Sexual love, Vietnamese proverbs and Folk verses
SYNTHESIS OF AMINO DERIVATIVES OF BENZIMIDAZOLE AND BENZOXAZOLE

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ABSTRACT

Benzoazoles or benzimidazoles can be rapidly and efficiently synthesized from a variety of carboxylic acids with 2-aminophenols or 1,2-phenylenediamines in one simple step, respectively. So the present study describes synthesis of a series of some amino derivatives of benzimidazole and benzoxazole. o-Phenylenediamine and o-aminophenol were condensed with acids in presence of Polyphosphoric acid and solvents POCl₃. All compounds were characterized by physical, chemical, analytical and spectral data. The cascade CeN coupling and intramolecular transamination reaction provided benzimidazole derivatives in high yields up to 90%. This procedure works efficiently at room temperature.

KEYWORDS: Benzimidazole, Benzoazole, Polyphosphoric acid and POCl₃
BUILDING A QUALITY CULTURE IN VIET NAM UNIVERSITIES

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ABSTRACT

The paper was aimed at clarifying the concept of quality culture in Higher Education, the needs to build a quality culture in universities. Then, it proposed solutions to build a quality culture in Viet Nam universities, including: to raise university staff’s awareness of the necessity to build quality culture, to approve and implement rules and regulations on building, developing quality culture in universities. The paper also mentioned the role of quality assurance office in monitoring activities relating to quality culture environment in universities.

KEYWORDS: Quality culture, Quality environment
THE EFFECT OF ELECTRONIC MEDIUM (WEB-BLOG) ON FEEDBACK GIVING IN THE PARAGRAPH WRITING COURSE IN RAJABHAT MAHASARAKHAM UNIVERSITY

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ABSTRACT

This study was conducted by the purposes of 1) investigating the effective of web blog in improving students’ paragraph writing ability in Rajabhat Mahasarakham University and 2) to investigate students’ attitudes toward the electronic medium. The participants were 23 students enrolling in the 1552102 the Paragraph Writing course second semester, 2013 academic year, Rajabhat Mahasarakham selected by purposive sampling method. The participants were asked to create web-blogs and summit 3 paragraphs throughout the semester. Teacher and peers took part in giving feedback in the blogs. The students’ performance in each assignment was investigated to find out the effectiveness of the method. Students’ attitudes toward the method were investigated by a questionnaire. The result showed that web blog was effective in developing students’ performance in writing paragraphs. The analysis from participants’ opinion questionnaire indicated that participants had positive attitudes toward the method of web blog. It could be concluded that web blog as an electronic medium of feedback giving in classes affect positively on students’ writing performance. Therefore, the method could be an interesting alternative to be applied in the writing classrooms.

KEYWORDS: Technology integration, Computer education, EFL Writing, Paragraph Writing
AGAINST TRANSFER PRICING TOWARD FOREIGN DIRECT INVESTMENT (FDI) ENTERPRISES IN VIETNAM WHEN JOINING ASEAN ECONOMIC COMMUNITY

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ABSTRACT

Integration process of ASEAN economic community has led to a large amount of capital from abroad into Vietnam. Besides the positive contribution of ASEAN investment into the process of economic development in Vietnam such as: creating jobs, increasing revenues for the State budget ... There are also negative impacts such as: causing environmental pollution, loss of traditional professions ... and especially the act of "transfer pricing". Transfer pricing action has brought profits to the parent company overseas but it has created fake losses for FDI enterprises in Vietnam. Transfer pricing action also helps enterprises overcome problems in the transfer of profits abroad, therefore, it has created loss of revenue from the State budget, an environment of unfair competition and has caused the trade deficit, etc. So, this is the major problem posed to managers and researchers. We need to analyze and find out appropriate solutions to improve this problem such as: referencing transaction price of all kinds of machinery and equipment, specifying whether the import price of raw materials, conducting price scrutiny and abiding policies of tax laws.

KEYWORDS: Transfer pricing, Integration process, FDI enterprises.
PROBLEMS AND PERSPECTIVES OF PALM LEAF MANUSCRIPT LIBRARIES IN MAHASARKHAM PROVINCE OF THAILAND: A DESCRIPTIVE STUDY

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ABSTRACT

The present study was aimed to conduct the survey of manuscript libraries in Mahasarakham Province of Thailand, to examine nature of collection, its organization, management, manpower, infrastructure including digitization efforts. Some of the findings were clarified through an interview with a project coordinator of palm leaf preservation in Northeastern Thailand. The review of literature was undertaken to find out various efforts and attempts made to preserve, conserve and digitization of the palm leaf manuscripts. The study found that the palm leaf libraries funded by the government and are under the supervision of the university are much better organized, preserved and disseminated compare to the palm leaf manuscripts libraries maintained at temples. There is general lack of fund, trained manpower or expertise to maintain the palm leaf manuscript libraries located in temples. Also with regards to digitization, efforts are happening in bits and pieces as a whole in the country, and so is the research. The study also found that palm leaf collection is highly distributed among the temples, more so the experts and expertise for processing, preservation and conservation including digitization of palm leaf manuscripts. The interview with a project coordinator was to find out the answer for some of the finding like- why some of the palm leaf libraries, particularly those housed in temples, are not maintained or preserved properly? Why digitization efforts are not up to the expectation? The answer that we got was that there is a lack of fund, infrastructure and interest among youngsters. Most important finding (both from interview with the coordinator and general conversation with monks) is that temples are not interested give-out the manuscript; temples have possessiveness on manuscript as a cultural prestige of the temple.

KEYWORDS: Palm Leaf manuscripts, Achieve digitization
ASEAN Economic Community: Development and Experience Lesson to Vietnam

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Abstract

ASEAN Economic Community (AEC) is proceeding of cooperation programs within ASEAN. ASEAN Trade in Goods Agreement (ATIGA), ASEAN Comprehensive Investment Agreement (ACIA) and ASEAN framework agreement of service trade (AFAS) together hundred of methods in general plan for execution of ASEAN Economic Community till 2015 have created dynamic developing economic community step by step. This paper analyze and evaluate remarkable points, opportunities and challenges of ASEAN last years, then giving solutions for development of ASEAN Economic Community in the future. For example, the first target layer is in short and medium term: continuing to give priority to achievement and completion of ASEAN Community by 2015 with the realistic and achievable goal. This is the goals of ASEAN, which can be surely executed, suitable to the nature, level, current development model of ASEAN. The second layer is in long term: including big ideals and targets, which ASEAN should try to gain in next decades after 2015. These targets play role of orientation, momentum for development of ASEAN. From that, we will mention about experience lessons for Vietnam.

Keywords: ASEAN, Economic Community, Vietnam, Development
A PRELIMINARY STUDY ON CONCEPTUAL METAPHOR
“FRIENDSHIP IS A PLANT” IN ENGLISH AND VIETNAMESE

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ABSTRACT

Friendship is a universal issue in most countries over the world. However, concepts of friendship in different cultures seem not to be identical. On the theoretical background of cognitive linguistics, we investigate the conceptual metaphor FRIENDSHIP IS A PLANT in English and Vietnamese with an aim to explain the underlying mechanism with which the speakers map a more concrete concept (plant) on a more abstract concept (friendship). We also expect to find out the similarities and differences of this conceptual metaphor in English and Vietnamese to better the teaching and learning English as a foreign language to Vietnamese learners.

KEYWORDS: Friendship, Conceptual metaphor, Universal, Domains, Culture
A MODEL FOR ECONOMIC COMMUNITY DEVELOPMENT BASED ON THE PHILOSOPHY OF SUFFICIENCY ECONOMY: A CASE STUDY OF KHAMBORN VILLAGE, BORABUE DISTRICT, MAHA SARAKHAM PROVINCE, THAILAND

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ABSTRACT

The objectives of this research were to analyze problems and needs for economic community development based on the philosophy of sufficiency economy in Khamborn Village, Borabue District, Maha Sarakham Province, to design a model for the economic community development based on the philosophy, to implement and evaluate the model. The target population was eighty four families leaders who participated voluntarily in the economic community development project. The instrument was two sets of a questionnaire. The statistics used were frequency, mean, standard deviation, MANOVA (Repeated Measure). The research findings were summarized as follows:

1. The finding showed that the main problems in community were lack of occupational knowledge and skills of farmers, bad crop harvest including low income. The needs of people in community were development of occupation knowledge and skills and extra income.

2. The sufficiency economy activities in community included mushroom farm, raising frog, duck, pig, fish, chicken, cow, cricket, making organic fertilizer, growing chili, papaya, eggplant and lemongrass.

3. Regarding the implementation of the model, it was found that the number of sufficiency economic activities based on sufficiency economy performed by people in community before and after the economic community development were significantly different at the .05 level. In addition, the average level of the satisfaction of the participants with the model before and after the economic community development was significantly different at the .05 level. The finding indicated that the people who participated in the research project earned more income and satisfaction with their better life.

In conclusion, the model for the economic community development based on sufficiency economy is composed of six steps: 1) building community relations, 2) a study trip to the best practice community development model, 3) contextual study and needs analysis, 4) participatory needs analysis and activities selection, 5) action, and 6) knowledge transfer to community.

KEYWORDS: Sufficiency economy, Economic community development
A MODEL OF COMMUNITY ECONOMIC DEVELOPMENT FOR SUSTAINABLE ECONOMIC SELF-SUFFICIENCY: A CASE STUDY OF BAN NONGNAMKHUM, BAN YUAK SUB-DISTRICT, NAM SOM DISTRICT, UDONTHANI PROVINCE

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ABSTRACT

This research on a study of Ban NongNamkhun, Ban Yauk Sub-District, Nam Som District, Udon Thani Province, has three following objectives: (1) To survey the current conditions, problems and needs of its community economic development for the sustainable economic self-sufficiency, (2) To design a model of community economic development for the sustainable economic self-sufficiency, and (3) To put to the test on the model of community economic development for the sustainable economic self-sufficiency.

The research process was divided into three phases:

(1) The pre-research phase, focused on building relationships among the researcher, community leaders, family leaders and government officials from various agencies, generated the following activities: 1) The researcher visited the research site to make an acquaintance with the people participating in the research, 2) The survey and analysis dealt with the current situations, problems and needs of the community, and 3) The preparation for building collaborative networks to move the research forward involved making arrangements of three groups of people; members of the community, developers and research staff.

(2) The research phase, focused on the study and analysis of the data collected in the first phase, led to the discussion of the problems, the exchange of ideas among the villagers on the individual and group bases to pinpoint the problems and needs of the community and assess the feasibility and the resource potentials for determining the model of community economic development for the sustainable economic self-sufficiency. The activities were; 1) the study and analysis of the community problems, and 2) the review of the construction of development activities.

(3) The implementation and evaluation phase of the model were involved with the experimental groups in relation to the achievement in the implementation of the model of community economic development for the sustainable economic self-sufficiency based on six dependent variables --- family income, family expense, amount of crops, numbers of live stocks, amount of consumer goods and the people satisfaction. The MANOVA (Repeated Measure) was employed for the comparison of the pre-and post-experimental results.

The research findings were the two major point as follows

1. As a result of workshops and deliberation of the community representatives, academics and the researcher, the model of community economic development for the economic sustainable self-sufficiency stood its ground in ten activities: a study visit, frog raising, catfish raising, organic farm produce cultivating, mushroom germinating, Barbary duck raising, native poultry raising, organic fertilizer making, organic agriculture and lovely home landscaping. This result was brought about during the second phase.
2. The result of implementing the model along with the outcomes of the pre-and post-experimental periods indicated that the community economic development for the sustainable economic self-sufficiency was verified by the better achievements in the post-experimental period during the third phase of the research. Each of the six variables, compared between the two intervals, bore the .05 level of statistical significance. The findings indicated the remarkable betterment of value and numbers related to the variables after the attempt of the model be they, family income, family expense, amount of crops, numbers of live stocks, mushroom germinating, and amount of consumers’ products. As for the satisfaction factor towards the application of the model, it showed a marked increase and yielded the conclusion in accordance with the prior hypothesis.

**KEYWORDS**: Sustainable, Economic Self-Sufficiency
PLANNING MANAGEMENT FOR STRATEGIC MARKETING IN BUSINESS OF CONVERTED ORGANIC BROWN RICE GOODS INSIDE PRODUCER GROUP AT CHUMCHON BANMAKHA, AMPHUR KANTARA WICHAI, CHANGWAT MAHASARAKHAM.

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ABSTRACT

This first phase of longitudinal research and development paper was sited at Ban Makha Community, Makha Sub-District, Mahasarakham Province during January 1,2013-September 30, 2013. It was aimed on converted organic brown rice goods business inside the local producer group with sequentially purposes as 1.) To study related internal context, 2.) To study related external context, 3.) To analyse those compiled data from the two mains to planning and management for strategic marketing, 4.) To possible implement the gained plan following with evaluation. Qualitative data was collected and crystallized while running this process in the target area via both primary data and secondary data which were collected from related documents written by related groups anizations, surveying, interviewing, observed recording and specific narrators. Inductive content analysis was applied leading to descriptive presentation connected among each of related issues. The results were as follows ;

1.) According to related internal context when focusing on management of products, marketing and finance, strength and weakness were found. The strength comprised components as being a fertile area, good raw material management, adequate product procedure plan, having steps for producing, applying proper material, equipment and techniques yielding high productivity averagely, directly goods distribution to consumers, Moreover, there were lower goods prices comparing to competitors, having commercial alliance and high funding with systematically producing plan of capitation. The weakness revealed as no quality control, residual chemical substance left in contaminated sand, having no brown rice reservoir, high capitation, commercial channel fluctuation. In addition , there were lacking of development and convention for goods from brown rice, lacking advertisement and public relation, plan for marketing with advisors and supporting fund from outside units while only small amount gained from government ones.

2.) According to related external context, the enterprise group struggled along on three main areas of marketing competition, supports from government and private sectors and technological changes. Firstly of marketing competition, they were on the lacking of tangible brown rice breed development, marketing mediators, marketing concepts and customer providing, customers behaviour and attitude from no converted products and no own brand and tasting of brown rice which not in common mode as it should. Secondly of the supports, the struggles were on no policy of brown rice pawn, no supports reaching neither converted products promotion. Thirdly, there were issues in lacking of community network building, active public relation and technological knowledge.

3.) According to planning and management for strategic marketing after the compilation, there were strategies on production leader, resource development, product
innovation and lowering capitation, marketing management via lowered product price than competitors’, sale promotion and keep stable price, marketing development and market expansion, budgets management, IT development, financial innovation management ,financial innovation development and capitation development.

4.) If the gained plan was possible implemented within the next 4 years, following evaluation, there will be positive performance changes. The average products will be more than 3,000 kilograms/month (50% of sale income more than before as from 66,000 Baht/month up to 105,000 Baht/month) although sale price (19 Baht/kilogram for sub sale and 48 Baht/Kilogram for whole sale) is lower than competitors’ (averagely at 70 Baht/kilograms from ranging between 60-80 Baht/kilogram) but higher sale quantity. The group will save expenses more in chemical fertilizer using (2,100 Baht/rai/time) and will be able to select brown rice breed with the breed expansion reserve for the next following year. A disadvantage will be by having commercial mediators as they will do credit wholesaling between 18-20 Baht/Kilogram for further packing for sale price at 50-60 Baht/Kilogram. This will lead to disadvantage from being lesser sale price for the group. It is important that the group will face on no own direct market which will lessen around 30-40% of their sale income as a whole.

KEYWORDS: Strategic Marketing, Organic Brown Rice Goods, Producer Group
EMPIRICAL REFLECTION OF COMMUNICATIVE LANGUAGE TEACHING IN EFL CLASSROOM AT THE UNIVERSITY OF PHAYAO, THAILAND

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ABSTRACT

This academic paper aimed at exploring Communicative Language Teaching approach (CLT) and its effectiveness and constraints in EFL classroom setting of the University of Phayao, Thailand. To make contents of this paper more comprehensive, qualitative data were from interview with 5 participants who were experienced instructors at University of Phayao responsible for EFL non-English major students and they conducted their teaching based on CLT principles and techniques in academic year 2013. The data were collected and analyzed to find out CLT effectiveness and limitation of CLT after implementation. According to analytical data from actual practices revealed by 5 EFL instructors, CLT in Thai context works effectively in terms of supporting instructors to be a class facilitator, manager and moderator and encourage students to be autonomous learners. However, CLT works in passive way in some circumstances; class environment, time limitation, large class, students’ learning style, motivation and cooperation.

KEYWORDS: Empirical Reflection, CLT, EFL Classroom, Non-Majored Students, Learning Style
THE MARGINALIZATION WITH STIGMATISING OF DRUG USERS

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ABSTRACT

In this article, it is examine the ways in which risk is constructed and managed by those involved in the addict who use drugs. It is discuss how constructions of risk influence maternal care outcomes and the understanding of marginalization, often in the form of stigmatization. In this research, it is collected data from a qualitative research that was conducted in Maha Sarakham Province in which was interviewed 10 drug users. In this article, it is shown how the everyday risk construction of addict is compounded significantly by drug use and the stigmatization and marginalization.

The results show that the phenomena of drug users has taught us how problematic the marginal and stigma attached to drug users for everyone-from the individual addict to the members of the society at all. It is our position that such stigma of social problems. We believe that punitive social policies such as the current drug laws are self-defeating. All of the problems related to marginal and stigma, such as general societal labeling, and ignorance, social reduced opportunities for drug users but increased stress and dislike social interactions, are more likely to promote groups segregation and resource deprivation than to deter the activity which leads to addiction.

KEYWORDS: Marginalization, Stigma and Drug Users
BELIEFS AND CULTURAL ASPECTS OF MAHA SARAKHAM SCULPTURES

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ABSTRACT

The present research study discusses the beliefs and cultural aspects of Maha Sarakham sculptures. This research was used by the Ban Mo people to present about data. The beliefs of producing and using healing sculptures was common in local. The practice encompasses certain archaic beliefs prior to movement from Dan Kwian Korat to Ban Mo Maha Sarakham held by the Ban Mo peoples which also resonate with various ecological, historical, and cultural themes. This research used qualitative methods, including the main target of providing information at the individual level who knows in the local distributor of boiler that produces sculptures. This result showed, sculpture as pottery pot a symbol of an indicator to determine the identity, beliefs and tell local history that continues to hold at present. Distinctive sculptural pottery pots, also reflects the relationship of gender, that is woman through marriage only to convey the wisdom of pottery.

KEYWORDS: Sculpture, Ban Mo People, Beliefs, Cultural
The building of ASEAN Economic Community (AEC) in 2015 is running in correct direction and schedule. To take the full advantage given by AEC, Government and companies of Vietnam need to select rational policies and solutions. This paper analyzes role of AEC, economic real situation, opportunities and challenges of Vietnam before joining AEC; then hints some policies. Now countries in the region have been realizing many activities to prepare for the establishment of AEC and so far they have finished about 80% quantities of works according to the schedule.

**KEYWORDS:** ASEAN, Economic community, Vietnam
APPLIED FOLKLORE IN VIETNAM

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ABSTRACT

Folklore study in Vietnam has recently focused on basic researches and introduction of the intangible cultural heritages. However, there is a need of a new direction in this study, which is applied folklore study.

The report uses the theory of applied folklore, and particularly applies the practical survey method in mountainous areas in the North of Vietnam. This method is combined with participatory observation and analysis of phenomenon of contemporary folklore. From then the report proposes new issues in researching folklore in Vietnam such as moving from basic research to applied folklore research; or from studying ancient cultural heritages to studying issues of the contemporary folklore. It is significant to apply folklore knowledge and methods in order to solve practical issues in society such as developing tourism in ethnic minority communities, and connecting tourism in ASEAN. In addition, the new way of studying folklore helps to explore urban folklore, use cultural heritages in poverty reduction process, and apply the folklore management mechanism as well as indigenous knowledge in disaster prevention. This report aims to propose new issues in research fields, subjects, and methods of applied folklore study in the case of socio-economic situation in Vietnam.

The applied folklore study is a sub-sector of the folklore study. Application of theories, and research methods of this sub-sector is a new direction in folklore study and contributes significantly for practical issues in modern life.

KEYWORDS: Culture, Folklore, Applied folklore
TENDENCY OF SEA AND ISLAND TOURISM DEVELOPMENT IN THE WORLD AND EXPERIENCE LESSONS FOR VIETNAM

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ABSTRACT

Although Vietnam with many different features goes behind the times in this field, it is also difficult to deviate from development rule of tourist markets which countries have been experiencing. Especially in the open world with such easy traveling and exchanging opportunities as at present, tendencies of the world are quickly known and applied in Vietnam. This is not only the ways for management, operation, organization, administration and business of tourism, which are applying by the world; but also from interests, psychology from demand imported into Vietnam. Thus to develop maximally potentials and advantages of own sea and island tourism, Vietnam needs to catch its development tendency in the future and propose strategic solutions.

KEYWORDS: Tendency, Tourist, Vietnam
WATER SYMBOL IN THAI CULTURE IN THE NORTH WEST OF VIETNAM

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ABSTRACT

In this article we study water icons in Thai culture in Northwest Vietnam in terms of: The concept of cultural icon in country, folk literature of the Thai people in Northwest Vietnam; Origins and metabolism of water from cultural icons to Thai folklore; Learn the basic characteristics of water icons in Thai folklore, for example: the basic form of expression in water symbol, the basic meaning and relationships between them; Especially function of water symbol in folklore ethnic Thai in Northwest Vietnam.

KEYWORDS: Water symbol, Thai culture
OVERVIEW OF VIETNAM’S LABOR EXPORT IN THE INNOVATION AND INTEGRATION

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ABSTRACT

Nowadays, there are about 400,000 Vietnamese employees and professionals working in over 40 countries and territories with more than 30 different industry categories. These numbers of labors have been sent to the country annually significant amount of foreign currency, giving labor exports in Vietnam to become one of the industry to join "the club" 1 billion dollars (average from 1999 to 2003, the number of foreign currency of labor sent over $1.5 billion/year). Putting labors to export to help the State reduce investment costs of training and creating new jobs for labors. Employees will be ensured vocational training to fit the actual situation of production and business activities and so their workers would return countries when they would have certain qualifications, skills and could apply the knowledge to serve their own country. Foreign currency revenues obtained from exported labors had a profound effect on the development of many labor-export countries. In addition, some countries have taken remittances from labor export in calculating national income. These issues force us to acknowledge positive roles and the changes due to labors export has brought the total revenues of the national economy contributing to promote relations between the countries in the world. Labor exports contribute to expand external relations, cooperation in the field of labor export is extremely important, since the relationship between the labor supply and labor-receiving countries become more intertwined and create good relations between the two countries giving important information on interested issues and unifying mutual benefits.

Therefore, Vietnamese labor exports to abroad which would be one of the paths has not only created jobs for some unemployed workers but also facilitated enterprises in-depth investment, enhanced competitiveness in the integration period.

KEYWORDS: Labor exports, Integration period, Foreign currency, Competitiveness, Labor-Export countries
AN ECONOMY OF TANTANOT (PALMYRA) IN PETCHABURI: PRODUCTION COST AND ECONOMIC PROFIT OF COMMUNITYWISEDOM

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ABSTRACT

Tantanot is a crucial cash crop and also an important factor that contributes returns to the community in Phetchaburi, Thailand where it was investigated and evaluated by financial and economic analysis methods. Accordingly, the 120 questionnaires were selected through purposive sampling as tools of the study in a focused area in the period from 2011-12. The study found that production of Palmyra sugarcake and jelly seed of Palmyra fruit gained the highest NPV of 3,226,369.65 Baht. The lowest gained was Palmyra handicraft at 81,688.35 Baht. IRR was the highest at 28.50% for Palmyra sugarcake and the lowest value went to Palmyra handicraft at 9.75%. The B/C ratio of all producers was positive. The highest ratio of benefit was also to Palmyra sugar cake production at 11.92. The Palmyra handicraft was very low at 2.53. Hence, all products of Tantanot contributed and accumulated profit. A dominant fundamental factor and indicator of investment for producers is the capital and equipment for applied production, whereas conservation of a skilled workforce and its transfer to the new generation, including additional Palmyra cultivation is necessary in order to create value added product in the long run to ensure improvements for the community.

KEYWORDS: Tantanot, Value Added Product, Production Cost and Economic Profit
Poster Presentation Abstract
DEVELOPMENT OF WEB-BASE INFORMATION SYSTEM IN EDUCATIONAL QUALITY ASSURANCE THOUGH THE PDCA PROCESS FOR THE FACULTY OF INFORMATION TECHNOLOGY, RAJABHAT MAHA SARAKHAM UNIVERSITY

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ABSTRACT

This research aims to: 1) develop the information system of web-base educational quality assurance through the PDCA process for the Faculty of Information Technology, Rajabhat Maha Sarakham University, 2) promote the implementation in accordance with the mission statements in management of the university according to the quality standards of educational quality assurance, and 3) to be the prototype for developing the information system for the web-base educational quality assurance at the faculty level of Rajabhat Maha Sarakham University through the PDCA process. The samples used in this research consisted of 35 persons including of boards, lectures and staffs of the Faculty of Information Technology and 30 educational quality assurance personnel of Rajabhat Maha Sarakham University. The tools used in this study were: 1) the information system of educational quality assurance website, 2) the evaluation form of the website’s contents of educational quality assurance, and 3) the satisfaction questionnaire towards using the website of information system of educational quality assurance. The statistics used were basic statistics.

The results showed that (1) a result of the development of the information system of educational quality assurance through the PDCA process of the Faculty of Information Technology of Rajabhat Maha Sarakham University led to acquire the system that was consistent with the criteria of educational quality assurance correctly based on the Office of the Higher Education Commission and the Office for National Education’s standards and quality assessment, consisting 5 systems: document module, KPI module, faculty module, user interface module and report module. The expertise on the system developed was at highest level (\( \bar{X} =4.35, SD. = 0.78 \)). (2) As the result of promoting the implementation according to the mission statements in management of Rajabhat Maha Sarakham university with the quality standards in accordance with educational quality assurance, it was found that due to collaborative work on the development of the quality assurance system of personnel and related officials and inserting the data into the system developed to be consistent with the time limit through the information system developed, the opinion of the system users on its appropriateness was at the high level (\( \bar{X} =4.54, SD. = 0.58 \)). This led the 9th quality assurance indicator to be at the highest level, score = 5 points, and an overall assessment score was at highest level (4.54) and (3) the result of system development led the system developed to be a prototype for developing the information system of web-base educational quality assurance through the PDCA process at the faculty level of Rajabhat.
Maha Sarakham University. The satisfaction of the information system developed was at highest level ($\bar{X} = 4.55$, SD. = 0.81).

**KEYWORDS:** Information system, Web-Base educational quality assurance, PDCA process
DEVELOPMENT LEARNING ACTIVITY USING MIND-MAPPING TECHNIQUE ON THE COURSE TOPIC FRONTAGE RECEPTION FOR VOCATIONAL CERTIFICATE STUDENTS, ROI – ET VOCATIONAL COLLEGE

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ABSTRACT

This research had the following objectives: 1) To develop learning activity using mind mapping technique on the course topic of frontage reception for vocational certificate students of Roi – Et Vocational College based on the 80/80 efficiency criterion; 2) To study the effectiveness index of learning activity using mind mapping technique on the course topic of frontage reception for vocational students of Roi – Et Vocational College; 3) To compare pre-test and post-test of the achievement test score using mind mapping technique course topic frontage reception for Vocational certificate students of Roi – Et Vocational College and 4) To study the satisfaction toward learning activity using mind mapping technique on the course topic of frontage reception for vocational certificate students of Roi – Et Vocational College.

The samples were 30 Vocational certificate students, Second semester, academic year 2013. The purposive sampling technique was used. The instruments used in this research were 1) ten (10) learning activities on the course topic of frontage reception; 2) four points scale of achievement test with 30 questions and 3) thirty-item questionnaires for the satisfaction of learning activity. The statistics used in analyzing data were percentage, mean, standard deviation and t-test (Dependent Sample).

The results of research were:
1. Learning activity using mind mapping technique on the course topic of frontage reception for Vocational certificate students, Roi – Et Vocational College had 85.10/88.17 efficiency which was higher than the efficiency criterion.
2. The effectiveness index value of learning activity using mind mapping technique on the course topic of frontage reception for vocational certificate students, Roi – Et Vocational College was 0.7605.
3. Learning achievement of students after learning was statistically higher than before learning at .01 level of significance.
4. Satisfaction toward learning activity using mind mapping technique of course topic of frontage reception for vocational certificate students, Roi – Et Vocational College in general was at the very much level (X = 4.57, S.D. = 0.34).

KEYWORDS: Mind Mapping Technique, Vocational Certificate
NEEDS ASSESSMENT OF THE STATES AND NEEDS FOR INSTRUCTION MODEL ENCOURAGING THE CRITICAL THINKING BASED ON READING LITERACY FOR GRADE 10 STUDENTS

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ABSTRACT

This study aimed to clarify needs of assessment of the states and needs for instruction model of encouraging the critical thinking based on reading literacy for Grade 10 students. The samples included 293 teachers who work in schools under the 25th office of secondary school educational area (Khon Kaen). The research instrument was questionnaire, developed by the researcher. The reliability of the 24 items questionnaire was 0.9497 Cronbach’s alpha coefficient. The statistic for data analysis include mean, standard derivation and PNI modified index. The result of research revealed that

1. The perspective of teacher of the state for instruction model encouraging the critical thinking based on reading literacy was at the medium level for the overall ($\bar{x} = 2.95$) and needs for instruction model encouraging the critical thinking based on reading literacy was at the high level ($\bar{x} = 4.01$ for the overall).

2. Teachers with different genders and experiences had no significantly (.05) different holding overall of state needs for instruction model encouraging the critical thinking based on reading literacy.

3. The result of needs analysis for instruction model encouraging the critical thinking based on reading literacy for Grade 10 students. It was found that content and learning media requirements needed by an index by the number 1 (PNI = 0.37), followed by the measurement and assessment of learning (PNI = 0.35) and the learning management model (PNI = 0.33)

KEYWORDS: Needs assessment, Critical thinking, Reading literacy
DEVELOPMENT OF TEACHERS' POTENTIAL IN FLIPPED CLASSROOM TEACHING OF THE INFORMATION TECHNOLOGY & COMMUNICATION COURSE OF MATHAYOMSUEKSA V LEVEL, OFFICE OF SECONDARY EDUCATION SERVICE AREA 25

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ABSTRACT

This research aimed to (1) study problems in teaching and learning of the Information Technology & Communication Course, Mathayomsueksa V Level, Office of Secondary Education Service Area 25; 2) study guidelines for solving problems in teaching and learning management of the Information Technology & Communication Course of Mathayomsueksa V Level, Office of Secondary Education Service Area 25. This study was conducted by using mixed methodologies of quantitative and qualitative research, and the instruments used for collecting data was a survey questionnaire for studying problems and needs assessment for Development of Teachers' Competency in Flipped Classroom Teaching of the Information Technology & Communication Course of Mathayomsueksa V Level, Office of Secondary Education Service Area 25. Regarding scope of the study, (1) the sample group consisted of the following subjects from secondary schools under Office of Secondary Education Service Area 25, purposively selected to participate in the study: 2 educational supervisors, 84 teachers of the Information Technology & Communication Course, and 15 Mathayomsueksa V students, 5 students selecting from the school size: large, medium and small; (2) the research area included secondary schools under the Office of Secondary Education Service Area 25, KhonKaen Province; and (3) the duration of research was the academic year 2014. The statistics used in analyzing data were frequency, percentage, mean, and standard deviation; and study results were descriptively analyzed and presented.

Findings of the study are as follows:
1) Problems found in teaching and learning of the Information Technology & Communication Course, Mathayomsueksa V Level, Office of Secondary Education Service Area 25, can be described as (1) problems in teaching and learning with learner-centered focus, revealing that instructional management to increase students' potential in flipped classroom learning was found at the highest level, (2) lacking a variety of instruments for measuring and evaluating learning achievement, students were not informed and given feedback to improve their performance, and these problems regarding evaluation and learning with real practice were found at the highest level, and (3) lacking various use of instructional media and technological learning resources such as web-based learning, PPT, VDO, email, Internet, e-learning, etc., and this problem was found at the highest level.

2) Regarding needs assessment for Development of Teachers' Potential in Flipped Classroom Teaching of the Information Technology & Communication Course of Mathayomsueksa V Level, Office of Secondary Education Service Area 25, findings are as follows: (1) the teachers need a training on the curriculum and syllabus, teaching and learning management, measurement and evaluation of learning achievement, and
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instructional media & resources that are relevant to the contents and learning quality standards, to apply in their teaching, and this need accounts for 80%, which is the highest level; (2) the teachers also need training in Flipped Classroom teaching at the highest level; (3) the duration of training should be 1-3 days on weekdays from 8.00-16.00, which is also at the highest level; (4) the training venue should be easy and convenient to access.; (5) the guest speaker or trainer should be a well-known Thai with new techniques of presentation, and training experience in teaching information technology and communication; and the teachers' need for this is also at the highest level.

KEYWORDS: Development of Teachers' potential, Flipped classroom
THE DEVELOPMENT OF ENGLISH READING COMPREHENSION USING A SET OF PRACTICES ON AMAZING MUANG LOEI ENGLISH READING SERIES OF FOREIGN LANGUAGE STRAND (ENGLISH) FOR GRADE 9 STUDENTS

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ABSTRACT

The purposes of this research were 1) to develop a set of reading comprehension practices on Amazing Muang Loei English Reading Series performance criteria of 75/75 2) to examine the effectiveness index of a set of reading comprehension practices, 3) to compare the students’ English reading comprehension achievement before and after learning through use of reading comprehension practices on Amazing Muang Loei, and 4) to study the students’ satisfaction with learning by using a set of reading comprehension practices on Amazing Muang Loei. The samples group consisted of 35 Grade 9 students from 3/1 class studying in the second semester of the academic year 2013 at Chumchon Sris-Ad (Municipality 1) School, obtained by using Cluster random Sampling. The instruments used in this research were instructional plans, a set of practices on Amazing Muang Loei English Reading Series, an achievement test of English reading comprehension, and a questionnaire for assessing students’ satisfaction with learning by using a set of reading comprehension practices. The statistics used in analyzing data for this research were percentages, mean, standard deviation, and t-test (Dependent Sample).

The results of this research are as follows:
1. The efficiency index for the development of a set of reading comprehension practices on Amazing Muang Loei English Reading Series for Grade 9 students was 79.14/78.57, which was in line with the established criterion.
2. The effectiveness index of learning by using a set of reading comprehension practices on Amazing Muang Loei was 0.6783, which that the percentage was 67.83.
3. The students’ average score in English reading comprehension before and after learning by using a set of reading comprehension practices on Amazing Muang Loei were significantly different at the .01 level.
4. The students’ satisfaction with learning by using a set of reading comprehension practices on Amazing Muang Loei was found at the high level (\( \bar{x} = 3.90, \text{S.D.} = 0.97 \)).

KEYWORDS: Reading Comprehension, Practices on Amazing
THE INTELLECTUAL COMPETENCE DEVELOPMENT OF THE 2nd KINDERGARTEN STUDENTS WITH THE EDUCATIONAL GAME BY TEAM-PAIR-SOLO TECHNIQUE.

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ABSTRACT

These research objectives were 1) to develop a set of the experience learning to be effective ratio of 80/80 2) to study the effectiveness index of the intellectual competence development and 3) to study the learning behavior of the kindergarten 2 students to learn with the educational game by Team Pair and Solo technique. The sample of this research were 30 students of the kindergarten 2 of Anuban Loei school in the second semester of 2013 academic year. The instruments used in this study were six units of the experience learning plan with the educational game by Team Pair and Solo technique, the achievement test to measure the intellectual competence of the Kindergarten 2 students and the learning behavior observation. The statistics used to analyze data, including; Index of Item Objective Congruence, Percentage, Mean, and Standard Deviation.

Research findings can be concluded as follows:

1. The efficiency of the developed set of experience learning with the educational game by Team Pair and Solo technique of the kindergarten 2 students were 81.31/80.78.

2. The effectiveness index of the intellectual competence development of the kindergarten 2 students with the educational game by Team Pair and Solo technique were 0.6872 or progressively increased 68.72 percent.

3. The learning behavior of the kindergarten 2 students on learning with the educational game by Team Pair and Solo technique were at a high level. Considering according to each factor; it was found that reasoning, language, mathematics and space relation showed high learning behavior respectively.

KEYWORDS: Intellectual Competence Development, Educational game, Team-Pair-Solo Technique
The purposes of this research were to 1) develop learning management in Mathematics area through CIPPA Model and Skill Exercises on Fraction for Mathayomsuksa 1 students to meet a requirement of 75/75 standard criterion were used efficiency 2) the effectiveness index of students with through CIPPA Model and Skill Exercises on Fraction 3) compare learning achievement before and after treatments on using learning achievement in Mathematics through CIPPA Model and Skill Exercises on fraction 4) investigate students satisfaction on CIPPA Model and Skill Exercises on Fraction and 5) find out students stability after using CIPPA Model and Skill Exercises on Fraction. The target group was 22 students from Ban Wanghai Nonsombun, Wangsapung district under the Office of Loei Educational Service Area 2 in the 2/2013 academic year. Researcher instruments were 1) 7 CIPPA Model and Skill Exercises on Fraction, most appropriate (X̄ = 4.78, S.D. = 0.40) 2) 7 mathematic exercises of Fraction 3) test of students achievement using 4 multiple choices on Fraction 4) Satisfaction toward CIPPA Model and Skill Exercises on Fraction with the 15 items showed. Statistics used was percentage, mean, S.D. and t-test (dependent sample).

The research results were as follows:
1. The efficiency of Mathematics through CIPPA Model and Skill Exercises on Fraction for Mathayomsuksa 1 students was 79.89/77.27 as the setting criteria.
2. The efficiency index of students with through CIPPA Model and Skill Exercises on Fraction was at 0.5890.
3. The post-test of student achievement after through CIPPA Model and Skill Exercises on Fraction was higher than the pre-test with the statistical significance at the level of .01.
4. Satisfaction toward the CIPPA Model and Skill Exercises on Fraction was at the highest (X̄ = 4.55, S.D. = 0.50).
5. The post-test of student retention after using CIPPA Model and Skill Exercises on Fraction with the scores after 14 days showed no indifference.

KEYWORDS: Development of learning achievement, CIPPA Model, Skill exercises
THE DEVELOPMENT OF LEARNING ACHIEVEMENT ENTITLED “WORLD AND CHANGES” OF SCIENCE AREA FOR MATTHAYOMSUKSA 2 STUDENTS THROUGH 7E INQUIRY CYCLE WITH MIND MAPPING

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ABSTRACT

This study aimed to develop learning activities entitled “World and Changes” of science area, for Matthayomsuksa 2 students using 7E inquiry cycle with mind mapping in accordance with the set criteria as E₁/E₂ at 80/80, to determine learning effectiveness index, to compare pretest and posttest achievement score, and to determine students’ satisfaction toward the developed learning activities. 22 students in Matthayomsuksa 2 of Salaiwittayakhom School, Wangsapung district, Loei province in academic year 2013 under the supervision of the office of secondary educational area 19, were selected as sample groups. The research instruments were 1) eight lesson plans 2) 30 item multiple choice achievement test 3)20 item five- scaled students’ satisfaction questionnaire. Statistics employed in the study were mean, standard deviation, and Dependent Samples t- test.

The findings were that the efficiency of learning activities entitled “World and Changes” through 7E Inquiry cycle with mind mapping was 80.19 / 80.15 with was higher than the set criteria 80/80. The effectiveness index of lesson plan was 0.6090 or was the percentage of 60.90. The posttest achievement scores of the students learning through 7E inquiry cycle with mind mapping were higher than pretest achievement average scores at the .01 level of significance and the students who learned through 7E inquiry cycle had satisfaction toward learning as a whole at the highest level.

KEYWORDS: Achievement, 7E Inquiry cycle, Mind Mapping
A STUDY ON COUNTRY IS A UNITY IN VIETNAMES AND ENGLISH

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ABSTRACT

Rationale

Nowadays, the demands for the proficiency of using a language is created for its power and usefulness in many fields. Language is regarded as a useful means for humans to communicate with one another. Researching a language must focus on linguistic competence, Vietnamese are not outside that goal. It forces the author to choose the study “primary Vietnamese concept of country through some Vietnamese poems” because of the reasons below.

Each word in Vietnamese are usually defined in the dictionary but the nature of the word is that it is always linked to the desires and feelings of users. In each word, there is always symbol, image and concept. Therefore, to aid in learning, teaching and translating, we will use the concept. Normally, each word has some meanings, one is concrete concept and another is abstract one(s).

Country is a word that has not only physical meaning but also abstract meaning. Especially, country is a concept which is holy as well as closely, both simple and meaningful. Therefore, this is researched and used in education, teaching and translation.

Purposes of the study

The purposes of study are as follows:
- To provide reader, English learners with fundamental understanding about cognitive linguistic, concept, taxonomies, partonomies and meanings of some words.
- To study the meanings of country in Vietnamese. To understanding the cultures, customs language of Vietnamese about country in their concepts.
- To offer some techniques in teaching and translation and suggested exercises in learning country concepts.

KEYWORDS: Study on Country, A Unity in Vietnamese
EMPLOYING GENRE-BASED SPEAKING APPROACH FOR ENGLISH MAJOR STUDENTS A CASE OF VINH UNIVERSITY –VIETNAM

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ABSTRACT

Genre-based teaching approach presents its effectiveness in English teaching and learning to develop communicative competence along with the social requirements for better teaching outcomes, especially in teaching speaking. The employment of genre-based speaking approach into English teaching, however, still a new method at universities in Vietnam, including Vinh University. This paper thus aims to clarify the effectiveness of employing genre-based speaking approach into English teaching contexts at Vinh University under the consideration of linguistics, psycholinguistics and sociolinguistics views in teaching and learning. Recommendations for English teachers of speaking or other courses (i.e writing) at Vinh University and at other English institutions are thus also deduced from this paper to create useful and valuable teaching lesson plans in varied teaching contexts.

KEYWORDS: Genre-based approach, Communicative competence
THE PREFERENCES OF MYANMAR CITIZENS CONCERNING AEC OPPORTUNITIES

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ABSTRACT

This study aims at ranking the preferences of intellectual Myanmar citizens concerning AEC opportunities and providing recommendations on developing policy for ASEAN countries. The focus of the research is on intellectual Myanmar citizens in Mandalay. Quantitative research has been employed. Questionnaires are used to collect data by using 136 samples from Myanmar intellectual citizens in Mandalay city. Descriptive statistics are mean, mode, and percentage.

The results of the research revealed that the preferences of intellectual Myanmar citizens concerning AEC opportunities on 10 aspects was Singapore with 6 aspects ranked as first place. These were: (1) Education hub, (2) Health care and hospital, (3) Economic Investment, (4) Sport training hub, (5) Technology, and (6) Transportation. Thailand was the 2nd most preferred country with 4 aspects ranked as first place. These were: (1) Tourism destination, (2) Recreation, (3) Culture Exchange, and (4) Agriculture business. Malaysia was 3rd most preferred in Tourism destination, Education hub, Health care and hospital, Economic Investment, Technology, and Transportation.

For Thailand, the following can be further developed to improve competitiveness: (1) Education hub, (2) Health care and hospital, (3) Economic Investment, (4) Sport training hub, (5) Technology, and (6) Transportation. There should be strong public policies for each of these aspects so that it can become one of the leading countries in ASEAN when the AEC begins in 2015.

KEYWORDS: Preferences of Myanmar Citizens, ASEAN Economic Community (AEC)
ABSTRACT

The purposes of this study were to studying the characteristic and the requirement of the public as well as the multimedia production to promote Maha Sarakham province with community participation by using augmented reality multimedia (AR). The tourist attractions in Maha Sarakham province that were sampled to production the augmented reality multimedia in this study were Ku San Tarat and Dun Lauphan Wildlife Sanctuary. The operations of multimedia production to promote Maha Sarakham province with community participation by using augmented reality multimedia (AR) was divided into 4 stages: characteristic analysis, footage and editing, published and evaluate. The opinions to augmented reality multimedia productions were considered with statistics by using mean and standard derivation.

The results showed that, 1) the two effective augmented reality multimedia for promote Ku San Tarat and Dun Lauphan Wildlife Sanctuary were obtained and 2) the opinion of sample toward the augmented reality multimedia was high (X = 4.30, SD = 0.60 for Ku San Tarat and X = 4.21, SD = 0.60 for Dun Lauphan Wildlife Sanctuary). From this study suggesting that augmented reality multimedia (AR) is one attractive way to public relations the tourist attractions.

KEYWORDS: Augmented reality (AR), Tourist attraction, Multimedia product
A MODEL FOR DEVELOPMENT OF PREVENTION AND CONTROLLING EFFICIENCY OF DENGUE HAEMORRHAGIC FEVER OF VILLAGE HEALTH VOLUNTEER IN ROI ET PROVINCE

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ABSTRACT

This research aimed to study factors affecting the efficiency of Prevention and Controlling of Dengue Hemorrhagic Fever of Village Health Volunteer and to formulate a developed model of Prevention and Controlling of Dengue Hemorrhagic Fever of Village Health Volunteer. The research also evaluated the efficiency of developed model of Prevention and Controlling of Dengue Hemorrhagic Fever of Village Health Volunteer. The research was conducted by using quantitative and qualitative approaches. The research found that the developed causal factors showed harmony with the empirical data. Four causal factors affecting the efficiency of Prevention and Controlling of Dengue Hemorrhagic Fever of Village Health Volunteer in Roi Et Province were ranked from high to low: team working > participation > perception role > leadership. The developed model of the efficiency of Prevention and Controlling of Dengue Hemorrhagic Fever of Village Health Volunteer in Roi Et Province consisted of 9 activities. According to the evaluation results, it was found that the efficiency of Prevention and Controlling of Dengue Hemorrhagic Fever of Village Health Volunteer in Roi Et Province was higher than prior to implementation of model as whole and in 2 aspects. Breteau Index (B.I.) value and a number of patient with Dengue Hemorrhagic Fever decreased at the 0.05 level of statistical significance.

KEYWORDS: Casual factors, Efficiency, Village health volunteer, Dengue hemorrhagic fever disease
A MODEL OF DEVELOPMENT IN SAVING BEHAVIOR FOR STUDENTS IN ROI–ET PRIMARY SCHOOLS UNDER ROI-ET PRIMARY EDUCATIONAL AREA SERVICE 1

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ABSTRACT

The purposes of this research were (1) to investigate the reasonable research factors that affect on morality of saving behavior of students in Roi-Et primary school, Primary Educational Service Area Office. (2) to make a model of development in saving behavior for students in Roi-Et primary schools, and (3) to trial test and evaluate a model of development in saving behavior for students in Roi-Et secondary schools. The methodology was separated into 3 stages. The first stage investigated the reasonable research factors that affect on morality of saving behavior for students in Roi-Et primary schools. The second stage was qualitative research. The third stage was experimental research. The sample was 40 students in Roi-Et primary schools selected by using purposive sampling. The data were collected by survey questionnaire. Statistics were analyzed through analytical software, and the results were presented as follows.

1. Personnel, family, and community surrounding and school surrounding factors affected on saving behavior of students in Roi-Et primary schools. There was statistically significant at level 0.05.
2. Results of making a model of development in saving behavior for students in Roi-Et primary schools consisted of 8 saving behaviors.
3. Results of assessment in terms of development in saving behavior for students in Roi-Et primary schools were found the difference in statistical significance at level 0.05.

KEYWORDS: Development, Saving behavior, Students
THE EFFECTIVE ADMINISTRATION COMPETENCY DEVELOPMENT OF THE SUB-DISTRICT ADMINISTRATION ORGANIZATION EXECUTIVES, MAHA SARAKHAM PROVINCE

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ABSTRACT

This research aimed to 1) identify effective administration competency of the executives of the sub-district administrative organizations, 2) analyze the factors affecting the administrative competency of the executives of the sub-district administrative organizations, and 3) to design a model for administrative competency development of the executives. This study was conducted in Maha Sarakham. The samples of the quantitative research were two hundred and ninety five executives of the sub-district administrative organization in Maha Sarakham, consisting of chief executives, chief administrators and deputy chief administrators, and government officials of the administration division under the sub-district administrative organizations, Maha Sarakham in 2013. The statistics used were frequency, percentage, mean, standard deviation, Pearson Product Moment Correlation and Multiple Linear Regression Analysis. The target population of the qualitative approach was twenty participants, consisting of experts in local administration and administration competency development, chief executives, chief administrators, deputy chief administrators, executives of local administrative organizations. They were selected by purposive random sampling technique. Workshops and content analysis were employed for the study.

Results of the research were as follows:

1. The findings showed that the average level of the administrative competency of the executives of the sub-district administration organization was at a high level (X = 4.05, SD=0.35). Regarding the administrative competency, it was found that the medium to high administration competency was at a highest level (X = 4.24, SD=0.48), and the beginning administration competency was at a high level (X = 3.86, SD=0.37) respectively.

2. The factors affected the effective administration competency of the executives of the sub-district administrative organization were the administrative behavior, the communication and decision making, the organizational culture, the educational level, the salary and the gender. The indices of the regression coefficients of raw score were 0.574, 0.226, 0.105, 0.092, 5.681 and 0.053. The indices of the regression coefficients of standard score were 0.561, 0.178, 0.142, 0.091, 0.090 and 0.071. These variables could predict the administration competency for effective leadership of the executives of the sub-district administration organization for 71.30% (R^2= 0.713, F=119.325) at the .05 level of statistical significance.

3. The model of the effective administration competency development consisted of the public policies on human resource development policy, planning the strategies for personnel development, the driving mechanism to implementation, the administrative behavior, the communication and decision, the organizational culture and the
personal characteristics of administrators. These factors could improve the administrative competency for effective leadership of the executives.

KEYWORDS: Development, Administrative competency, Effectiveness
LEARNING AND TEACHING MANAGEMENT TO ENHANCE THE GLOBAL EDUCATION FOR SECONDARY SCHOOL STUDENTS

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ABSTRACT

The research was completely conducted as the first phase. The purpose of the study was to survey the problems and needs for the patterns of learning and teaching management to enhance the global education in the secondary schools. Samples used in this study were 70 school administrators, 10 supervisors, 175 teachers of Social Studies, Religion and Culture Learning Group and 382 students under the Secondary Educational Service Area Office 25.

The learning and teaching management for the Social Studies, Religion and Culture Learning Group to enhance the global education for secondary school students were administered in four areas: curriculum, learning management, measurement and evaluation and learning materials and resources.

For the school administrators, it was found high level of problem in the curriculum, moderate in the learning management, high in the measurement and evaluation and high in the learning materials and resources.

For the supervisors, it was found moderate level of problem in the curriculum, highest in the learning and teaching management, high in the measurement and evaluation and high in the learning materials and resources.

According to the teachers, it was found the highest level of problem in the curriculum, highest in the learning and teaching management, high in the measurement and evaluation and same as the learning materials and resources. For the students, it was found that students showed their interests to the global education at high to highest level.

Comments for the learning and teaching management to enhance the global education were: both school and supervisors should have all concerned personnel participated in the learning and teaching development trainings to enhance the global education for the secondary students; and teachers should be promoted the knowledge and teaching skills on a regular basis; should provide more ICT materials for learning and teaching and should provide budget for technological learning materials as well as the budget for school activities.

KEYWORDS: Teaching management, Enhance
IMPLEMENTATION OF PHRAPARIYATTIDHAMMA SCHOOLS OF GENERAL EDUCATION DIVISION IN MAHA SARAKHAM PROVINCE UNDER THE NATIONAL OFFICE OF BUDDHISM

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ABSTRACT

This research aimed to 1) study the implementation of Phrapariyattidhamma Schools of General Education Division in Maha Sarakham Province under the National Office of Buddhism, and 2) study suggestions for management improvement of the Phrapariyattidhamma Schools in Maha Sarakham Province under the National Office of Buddhism. The population for this study consisted of 114 administrators and teachers from 10 Phrapariyattidhamma Schools in Maha Sarakham Province, and the instrument used for collecting data was a questionnaire of 0.35-0.474 discrimination power and reliability of .97. The statistics used in analyzing data were frequency, percentage, mean and standard deviation.

Research findings can be concluded as follows:
1. The overall opinion of administrators and teachers towards implementation of Phrapariyattidhamma Schools in Maha Sarakham Province was found at the moderate level, and their opinions regarding specific aspects revealed that general administration and academic administration were found at the high level while budget management and personnel administration were both found in the moderate level.

2. Subjects’ suggestions for improvement in management of Phrapariyattidhamma Schools in Maha Sarakham Province were 1) grouping classes of the same level to solve problems of lacking teachers, 2) promoting continuous academic development and training to increase teachers' academic capabilities, 3) promoting collaboration with communities, agencies, and local government organizations in supporting and providing educational materials and instructional media technology, 4) increasing extra remuneration for teachers with outstanding performances for morale and retention of qualified personnel, and 5) encouraging public participation in curriculum development of these schools.

KEYWORDS: General education division, National Office of Buddhism
MOBILE LEARNING SYSTEM USING SOCIAL NETWORK MULTIMEDIA CONTENTS FOR FLIPPED CLASSROOM SUPPORTING

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ABSTRACT

This paper presents a mobile learning system which can support and reinforce an effectiveness of flipped classroom for computer and information technology learning course such as programming and networking or related fields. The researcher used an Extensible Markup Language (XML) to publish and use as a data source to contain multimedia address from social network. In addition almost student who has a smart phone and internet infrastructure can use it to reduce limitations of location and times for learning. For this useful utilities and advantages, student can prepare for learning in advance which can use as a very important tool to support and reinforce flipped classroom learning process which can improve effectiveness 64 of 97 sampling (representing 69.07% improved) students who enrolled computer programming and computer networking course. The evaluation of the system’s performance was conducted by expert and general users. The Average Mean and Standard Deviation results from expert users were 4.44 and 0.51 respectively. The Average Mean and Standard Deviation results from general users were 4.61 and 0.49 in order. In summary, the results of the evaluation indicate that the developed system’s performance has good level and it can be adapted to work efficiently.

KEYWORDS: Mobile learning, Social network, Flipped classroom
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EFFECT OF SEASON OF THE YEAR ON RAW MILK QUALITY UNDER A SMALLHOLDER FARMING SYSTEM

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ABSTRACT

Many factors have affected on raw milk quality such as cow breed, cow age, lactating stage, type of feed and season. Among the season is one of main factor to milk yield and milk quality. These are associated with ambient temperature, feed and feeding. The different feed resources are related to the food regime and observed in variation of season. Understanding the seasonal factor to the raw milk quality is importance. Therefore, the objective of this study was to evaluate the seasonal variation on raw milk quality under a smallholder farm. A total of 38 farms from Kokkor’s dairy farm corporative group of Mahasarakham province were interviewed and collected raw milk composition data during two years period (2012 to 2013). Milk composition and microbical load were divided to 3 seasons as cool season (November to February), hot season (March to June) and rainy season (July to October). Therefore, season were assigned to 3 treatments of completely randomized design (CRD). The result found that in cool and hot season, the shorted of green chop and roughage source were found. The concentrate feedstuffs were not varied by different season. Data suggested that the season change had significantly affected on milk fat content (p<0.05). Rainy season was higher percentage of milk fat than cool and hot season. While, another milk compositions and microbial load were not significant difference by the season change. Therefore, this study indicated that season change had affected on milk composition especially milk fat content.

KEYWORDS: Cool season, Hot season, Rainy season, Milk composition, Microbial load
BACTERIAL CONTAMINATION IN DRINKING WATER FROM THE VENDING MACHINES

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ABSTRACT

Bacterial contamination is the condition occurrence when bacteria occurred in a location where it is not should be. Contaminant with bacterial in drinking water has potential effects on human health. This study examines the drinking water quality by determination of total coliform and fecal coliform (MPN) and the presence of Escherichia coli. A total of 55 samples were collected from the vending machines in Mahasarakham municipal areas from March 2014 to May 2014. The results showed that 15 of 55 water samples (27.27%) were positive with coliform bacteria with MPN of total coliform index ranged from 1.1-1,600 MPN/100ml. 11 of 55 water samples (20%) were positive with fecal coliform bacteria with MPN of fecal coliform index ranged from 0-31 MPN/100ml. Three water samples (5.45%) were positive with E. coli, the bacteria which habit in the large intestine of warm-blooded animals and well known as the indicator for sanitary quality of water. However, drinking water standard (Ministry of health, Thailand) recommended that there should be less than 2.2 MPN/100ml of coliform bacteria and no contamination of E. coli in drinking water. The data of bacterial contamination in RO water is a negligent subject so results from this study are useful for purpose the quality of drinking water which has the potential to cause water borne diseases.

KEYWORDS: Drinking water quality, Coliform bacteria, Fecal coliform bacteria, Escherichia coli
A FIRST ANALYSIS OF NUCLEOLAR ORGANIZER REGIONS (NORS) IN RACCOON BUTTERFLYFISH, CHAETODON LUNULA (PERCIFORMES: CHAETODONTIDAE)

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ABSTRACT

In the present study, nucleolar organizer regions (NORs) and standardized karyotype were firstly described in raccoon butterflyfish, Chaetodon lunula from Thailand based on specimens two males and two females collected from the Institute of Marine Science, Burapha University, Chon Buri Province. The chromosomes were directly prepared from kidney tissues and then were stained by conventional staining and Ag-NOR banding techniques. The results revealed that the diploid chromosome (2n) was 48 chromosomes and the fundamental number (NF) was 48 in both sexes. Heteromorphic sex chromosomes were not observed. The standardized karyotype consists of 22 large telocentric and 26 medium telocentric chromosomes. The NOR-bearing chromosomes are the chromosome pair no. 20 and the NOR position is the region adjacent to the centromere or subcentromeric NOR. The karyotype formula for this species is as follows: 2n (48) = L^{t}_{22} + M^{t}_{26}

KEYWORDS: Chaetodon lunula, Nucleolar Organizer Regions (NORs), Karyotype
MATHEMATICAL MODEL SUITABILITY FOR THIN-LAYER DRYING OF BEEF SLICES UNDER GAS INFRARED DRYER

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ABSTRACT

The aimed of this study was to determine the thin layer drying behavior of beef slices. The drying experiment performed of 50, 60, 70, and 80°C, drying air velocity of 0.5 m/s was investigated in a gas infrared dryer. The increase in air temperature significantly reduced the moisture content and the drying time of the beef slices. The Page model was found to satisfactorily describe the drying behavior of beef slices, with good agreement obtained with the experimental data the highest value of R² (0.9983-) and the lowest values of MBE (-0.0007-0.00412), RMSE (0.00063-0.01135) and χ² (0.0000019-0.000223) respectively. The moisture transfer from beef slices was describes by applied the Fick’s diffusion model. The effective moisture diffusivity varied from 9.517×10⁻¹¹ to 2.906×10⁻¹⁰ m²/s and increased with the temperature. An Arrhenius relation with an activation energy value of 25.94 kJ/mol expressed effect of temperature on the diffusivity.

KEYWORDS: Beef slices, Effective moisture diffusivity, Activation energy
ABSTRACT

This research aims to 1) the application development for assess the quality of the applications of knowledge folk wisdom 2) the satisfaction of the user applications and applications. The target group is a first year student in the field of information technology on 30 persons. The sample is focus group. The research tools used such as the testing “The Application Development present the knowledge folk wisdom ”. The experiment meets that the quality of applications developed the knowledge folk wisdom Average is the highest level (mean = 4.54 and standard deviation = 0.65). Considering the article found that the average level in the highest (mean = 4.33 - 4.67 and standard deviation = 0.58 - 01.15).The like to assess satisfaction of students. The experiment meets that average is the highest level (mean = 4.51 and standard deviation = 0.06). Considering the article found that the average level in the highest (mean = 4.43 - 4.60 and standard deviation = 0.50 - 0.68) were used in data analysis were percentage mean ( X ) standard deviation (S.D.). The results were as follows.

1. The Application Development present the knowledge folk wisdom with the highest quality mean = 4.54 and standard deviation = 0.65

2. The satisfaction of users is at the highest level, mean = 4.51 and standard deviation = 0.06.

KEYWORDS: Learning integrating, Offer local knowledge
THE FACTORS AFFECTING TO LEARNING ACHIEVEMENT OF STUDENTS IN TECHNOLOGY MANAGEMENT PROGRAM OF RAJABHAT MAHASARAKHAM UNIVERSITY

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ABSTRACT

The purpose of this study was investigation the factor affecting to learning achievement of students in Technology Management Program. The participants of the study were 31 first year students of Information Technology Faculty Rajabhat Mahasarakham University who were studying in the first semester in 2004 academic year. The instruments were used in the study, they were the set of questionnaires of factors affecting to learning achievement of students in Technology Management Program which were investigated, corrected, and improved. This study statistics were arithmetic mean and standard deviation.

The result of the study shows that the student of Technology Management comment for the factors affecting to the learning achievement as in the high extent (the arithmetic were 4.50 to 4.49) were 7 factors. They commended that the factors affecting to the learning achievement as in the very high extent (the arithmetic were 4.50 to 5.00) were 5 factors. And the participants commended that the quality of the instruction of the teachers was the factors as very high extent, the arithmetic was 4.87 and the standard deviation was 0.34.

KEYWORDS: Factors, Learning achievement
THE EFFECTS OF CLOUD LEARNING MODEL TO ENHANCE
THE CRITICAL OF USING INFORMATION TECHNOLOGY

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ABSTRACT

The purpose of this study was to study the effects of using cloud learning model to enhance the critical of using information technology. The target groups were 29 undergraduate learners in the first year who were enrolled in 7010101 Information Technology Fundamentals. The instruments were achievement test and assessment form. The statistics used for analyzing the collected data were mean, and standard deviation. The results of the study were as follows:

1. The learners’ learning achievements were higher than the set criteria at the .05 level of significance.
2. The learners’ critical of using information technology were in high level.

KEYWORDS: Cloud learning, Information technology
A DFT INVESTIGATION ON STRUCTURES OF BIS-THIOUREA DERIVATIVE FUNCTIONALIZED GRAPHENE NANOSHEET AND ITS COMPLEXES WITH ANIONS

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ABSTRACT

The structures of bis-thiourea receptor (L), and its complexes with anions were obtained using DFT method. While the structures of bis-thiourea functionalized graphene nanosheet (L-GNS) and its complexes with anions were computed using the two-layered ONIOM(MO:MO) method. The binding energies of complexes of receptors with anions and their charge transfers were obtained using the DFT method. The results showed that receptors L and L-GNS can form the strong complexes with anions via hydrogen bonding interactions. Both receptors L and L-GNS show the strongest binding complexes with fluoride ion.

KEYWORDS: Anions, Bis-thiourea Derivative, DFT, Graphene nanosheet, Functionalization, ONIOM
THE DEVELOPMENT OF THE SIMULATE APPLICATION OF THE COMPUTER FOR LEARNING BY CLOUD COMPUTING SYSTEM

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ABSTRACT

The purposes of the study aims for the development of the simulate application of the computer for learning by cloud computing system in order to improve the quality and to study the users’ satisfaction toward this application. The sample group are “the student at technology computer and communication in equipment computer preservation field : 7041103” total 30 persons by choose the purposive sample. The tool that use in the research; 1) A quality test for the development of application the simulate of computer for learning by cloud computing system (The average is 4.60 and the standard deviation is 0.5). 2) the contentment questionnaire of a student on the average stay in the level most. (The average is 4.65 and the standard deviation is 0.50).

The statistics that used in the data analysis includes; percentage, means and standard deviation. The results will be following:

1. The application that develop for present the development of application the simulate of computer for learning by cloud computing system. Meet that the requirement of the locality well most

2. The application that development is a good quality.

3. The contentment generally of the user is in the most level.

KEYWORDS: Simulate application, Cloud computing system
THE DEVELOPMENT OF DIRECTION RECOMMENDATION APPLICATION FOR ANDROID BY THE USE OF SATELLITE NAVIGATION

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ABSTRACT

The propose of this study was developed the direction recommendation application for android by the use of satellite navigation. The case study was Rajabhat Maha Sarakham University. The extension of the buildings in Rajabhat Maha Sarakham University caused that there are more routes during buildings. It effected to the outside persons who come here to connect with the University. Further were feel confuse about the directions inside and cannot find out the positions of the buildings. For this problem, the direction recommendation application of android by the use of stale life navigation was developed to solve this problem by the use of GPS system on android to present the user position together with Google Map API. It service to present application map which present the data of the building in institutes. And it can recommend the direction from the user position of the wanted building direction. It effects reduce mistake of finding out direction and extremely reduce the time to journey. The result of the satisfactions investigating found that the arithmetic mean was 4.16 and the standard deviation was 0.64. It shows the system quality was very high extent.

KEYWORDS: Mobile application, GPS, Geographic information system, Google Map API
ATTITUDES AND BEHAVIOR OF MAHASARAKHAM UNIVERSITY STUDENTS TOWARD THE PURCHASE OF READY-TO-EAT FOODS AT CONVENIENCE STORE

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ABSTRACT

The purpose of this study was to investigate the factors affecting attitude and behavior of Mahasarakham University students towards the ready-to-eat food purchased at the convenience stores. The data were collected from 414 students by using questionnaire. The reliability of questionnaire was tested and Cronbach’s alpha coefficient was 0.946. A factor analysis was applied to extract factors affecting consumer attitude into 12 principal components. Factor scores were computed and the cluster analysis was performed using factor scores which were grouped those items into 3 groups. Group 1 (153 students), the students in this group mostly satisfied with healthy food provided in the convenience store, but they were less likely to try newly produced ready-to-eat foods. Group 2 (142 students) was mostly food neophobia and unsatisfied with food quality and food packaging. Group 3 (124 students) was likely to try newly produced ready-to-eat foods but was unlikely to consume healthy food at the convenience stores.

KEYWORDS: Attitude, Behavior, Ready-to-eat food, Convenience store, Mahasarakham University
STRENGTH-WEAKNESS-OPPORTUNITY-THREAT OF HOSPITAL PHARMACY PROFESSION ON ASEAN FRAMEWORK AGREEMENT OF PHARMACEUTICAL SERVICES

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ABSTRACT

The objectives of this research were to investigate opinions of Thai hospital pharmacists on ASEAN Framework Agreement of Pharmaceutical Services (AFAS) and to perform a SWOT analysis (strengths, weaknesses, opportunities and threats) of AFAS on the profession. Questionnaires were used as a tool in this research. Opinions were divided into 5 different levels. Samples included 198 pharmacists from hospitals under the Ministry of Public Health, private hospitals with more than 100 beds in Bangkok Metropolitan Region. The results from 167 respondents revealed that the opinions towards AFAS were at moderate level (3.08±0.51), AFAS were both opportunity (3.61±0.58) and threat (3.80±0.62) at high level, and that Thai hospital pharmacy profession had more strength (3.81±0.51) than weakness (3.47±0.46).

KEYWORDS: Hospital pharmacy profession, ASEAN Framework Agreement, Pharmaceutical Services
PHOTON INTERACTION STUDY ON BUILDING MATERIALS IN THAILAND FOR RADIATION SHIELDING MATERIALS APPLICATION

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ABSTRACT

The radiation attenuation properties of gamma-ray have been studied for building materials containing with barium carbonate (BaCO\textsubscript{3}). The raw building material have cement, sand and stone in the ratio 1 : 2 : 4. The composition of sample material was analyzed by energy dispersive X-ray fluorescence spectrometer (EDXRF). The raw material was mixed with 30\% of BaCO\textsubscript{3} to be used as the sample material. WinXCOM software was employed to determine the values of mass attenuation coefficient for the samples in the photon energy band from 1 keV to 100 GeV. The obtained values were shown graphically and compared with that of standard shielding concretes. It was found that the values of this parameter were changed with photon energy and concentration of 30\% BaCO\textsubscript{3} that mixed to cement, sand and stone.

KEYWORDS: Building material, Mass attenuation coefficient, Photon, Radiation properties
SCREENING AND POTENTIAL OF ANTAGONISTIC FUNGI FOR BIOLOGICAL CONTROL OF CHILLI ANTHRACNOSE

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ABSTRACT

The Screening and Potential of Antagonistic Fungi for Biological Control of Chilli Anthracnose, caused by Colletotrichum spp. was examined. Four isolates of fungi (Rhizopus sp., Emericella sp. and Eurotium sp.) were obtained from rhizosphere soil of chilli plants from agricultural field in Maha Sarakham province, Thailand and tested for against mycelial growth and sporulation of C. acutatum F04 by bi-culture antagonistic test. Results showed that Rhizopus sp. S11 isolate significantly (P≤0.05) inhibited mycelial growth and sporulation of C. acutatum F04 at 69.75% and 84.35%, respectively compared to the control, followed by Eurotium sp. and Emericella sp. It is proved that Rhizopus sp., Emericella sp. and Eurotium sp. become the promising antagonistic fungi as a biological agent against plant pathogenic fungi.

KEYWORDS: Anthracnose, Antagonistic fungi, Biological control
A STUDY OF THE APPROPRIATE PROPORTION OF PLANT NUTRIENT FROM WATER HYACINTH ORGANIC COMPOST CONTRIBUTED TO GROWTH AND YIELDS OF BROCCOLI

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ABSTRACT

Water hyacinth is a hydro-surface growing plant which is propagated uncontrollably so that the plant is appropriate to be utilized as material for fertilizer composing. This research’s objectives were to study the appropriate rate of water hyacinth compost usage towards implantation and results of the compost utilizing towards growth and yield rates of broccoli implantation. The Completely Randomized Design consisted of 6 treatments with 4 replications as described 1) no compost usage (control), 2) chemical fertilizer as in the rate suggested by Department of Agriculture, 3) using water hyacinth compost at 500 kilogram per rai, 4) using water hyacinth compost at 1,000 kilogram per rai, 5) using water hyacinth compost at 1,500 kilogram per rai, and 6) using water hyacinth compost at 2,000 kilogram per rai. Broccoli was used as a test plant; data were collected every 7 days, 8 times of records in total.

The results of the research showed that the broccoli which implanted in the pots used fertilizers differently, indicated that, when harvested after 56 days of implantation, using proportion of fertilizer differently had statistically significant difference. As in the T3 (water hyacinth compost at 500 kilograms per rai) composing of plant nutrient N P and K equates to 0.01%, 70.94% and 47.76% respectively with average height of 25.50 centimeter and numbers of leaves at 12.25 leaves per one plant. This led to the largest size of the broccoli flower of 11.47 centimeters, 144.11 grams of fresh weight with 17.85 grams of dried weight.

KEYWORDS: Bloccoli, Water Hyacinth, Compost fertilizer, Plant nutrient
THE DEVELOPMENT OF LEARNING ACTIVITIES INTEGRATING TO PROMOTE A STRONG ACADEMIC STUDENTS IN THE LOCAL COMMUNITY

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ABSTRACT

The purposes of this study were: 1) to compare learning achievement, creative thinking of the students between before and after-learning; 2) to examine students’ satisfaction with the courseware; 3) to study the behavior of teachers and students in the local community towards the multimedia education CD. Operations research is divided into 2 phases. Phase 1 activities, according to the constructivism learning theory and the sample group toward the leaning activities including 34 of the third-year undergraduate students majoring in Technology Multimedia and Animation, Faculty of Information Technology. Phase 2 activities to promote the use of media tablet computers for teachers and students in the local community and the sample group was teachers and students in the local community. Research tools for this study included 1) the learning outcome assessment form 2) student’s satisfaction evaluation form and 3) teachers and students ‘s satisfaction evaluation form.

The outcomes were presented as follows.

1. The students who learned using the courseware by using constructivism learning theory showed gains in their learning achievement and creative thinking from before learning at the .05 level of significance.
2. The students showed their satisfaction with learning by using the courseware as a whole at a highest level.
3. Teachers and students in the local community have been distributed multimedia education CD showed their satisfaction at a more level.

KEYWORDS : Tablet, Project base, Multimedia, Collaborative, Learning
ENVIRONMENTAL GRAPHIC DESIGN FOR PROMOTE IDENTITY RAJABHAT MAHASARAKHAM UNIVERSITY TO GREEN UNIVERSITY

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ABSTRACT

The objectives for this research are 1) to analyze Uniqueness Rajabhat Mahasarakham University 2) to Creative Environmental Graphic Design for promote identity Rajabhat Mahasarakham University to Green University 3) to representative sample the satisfaction for Environmental Graphic Design for promote identity Rajabhat Mahasarakham University to Green University. Sampling group for this research is Guest in Rajabhat Mahasarakham University have to 2 Sampling group is the sample in response to an interview the samples were 50 persons and the evaluation of satisfaction the samples were 100 persons.

The research result has been found that 1) the creative Environmental Graphic Design for promote identity Rajabhat Mahasarakham University to Green University 2) the result of interview in an identity Found that attitudes towards identity is 2.1) signet 52% 2.2) green color and res color 76% 2.3) flame of the forest 94% 3) the result to representative sample the satisfaction for Environmental Graphic Design for promote identity Rajabhat Mahasarakham University to Green University is very height.

KEYWORDS: Environmental graphic design, Identity
DEVELOPMENT OF THE LEARNING ACTIVITY IN THE PROJECT-BASED ON THE COOPERATE WITH THE COMMUNITY BY USING THE INFORMATION TECHNOLOGY, THROUGH THE CLOUD COMPUTING SYSTEM

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ABSTRACT

This research aims for “Development of the Learning Activity in the Project-based on the Cooperate with the Community by using the Information Technology, through the Cloud Computing System. This approach was expected to meet the 80/80, in order to seek out the Effectiveness Index (E.I) and to examine the satisfaction of students. The outcomes were as follows:

1. Development of the Learning Activity in the Project-based on the Cooperate with the Community by using the Information Technology, through the Cloud Computing System, indicated 80.66/85.66

2. An Effectiveness Index of the classroom management for Development of the Learning Activity in the Project-based on the Cooperate with the Community by using the Information Technology, through the Cloud Computing System was 0.7894. This effectiveness index that the students learning achievement had been increased for 78.94 %

3. The student who attended the development of the learning activity in the project-based on the cooperate with the community by using the information technology, through the cloud computing system showed higher learning achievement for post learning with significance .01

4. The satisfaction of the student who attended the development of the learning activity in the project-based on the cooperate with the community by using the information technology, through the cloud computing system with student-centered classroom was at the highest level, with mean = 4.59 and standard deviation = 0.80

KEYWORDS: Learning activity, Project-based, Cloud computing system
THE DEVELOPMENT OF BLENDED LEARNING MODEL ON COMPUTER NETWORK

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ABSTRACT

The purpose of the study are 1) to develop Blended learning on Computer Network Model and 2) to investigate the use of Blended learning on Computer Network Model with the experimental group. The sample group of this research are twenty professors of Faculty of Information Technology Rajabhat Mahasarakham University 2) three experts in the research instruments and research methodology assessment and 3) thirty students of Faculty of Information Technology Rajabhat Mahasarakham University.

The research methods are 1) the sets of questionnaires of the method to develop blended learning on computer network model 2) the blended learning on computer network model 3) the set of achievement tests 4) the set of satisfaction questionnaires. The research statistics are t-test, mean and standard deviation.

The result of the research shows that 1) the expert had the attitude toward blended learning on computer network model at a very high extent (mean score is 0.41) 2) the participants’ learning achievement posttest is higher than pretest at 0.05 significantly and 3) the participants are satisfied toward the blended learning on computer network model at a very high extent approximately. Mean is 4.79 and standard deviation is 0.41.

KEYWORDS: Blended Learning Model, Computer network
THE EVALUATION OF PROBLEMS AND NEEDS FOR SCIENTIFIC TEACHING MODEL ACCORDING TO PISA FOR STUDENTS MATTAYOMSUOKSA 3

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ABSTRACT

The objective of this study is to evaluate problems and needs for scientific teaching model according to PISA for students Mattayomsuksa 3 in secondary school educational service area 31. The sampling in this study are teachers and student in the secondary school service area 31 included 64 teachers and 336 students and instrument for correcting data is a questionnaires with 36 item. The reliability coefficient of Cronbach’s alpha of the whole questionnaire was 0.89. The statistic for data analysis were mean, standard derivation, t-test and PNI modified index for setting priorities of importance which the result of the study reveals that

1. The perspective of teachers and students problems in scientific teaching model along PISA was in medium ($\bar{x} = 2.94$) and the need of using scientific teaching model along PISA was in medium ($\bar{x} = 3.21$)

2. There was a difference between teachers and students problems in scientific teaching model along PISA for Mattayomsuksa 3. Teachers had got problems and needed to have more scientific teaching model along PISA than the students.

3. The result of needs analysis for scientific teaching model along PISA revealed that there were 5 parts of PISA framework which were prioritized by PNI modified index. It was found that three were 3 parts of them needed to be developed which were 1) attitude to science 2) context 3) test of PISA and the two parts left which were ability of science and knowledge of science did need to be development.

KEYWORDS: Problems and Needs Assessment, Child Centered Teaching
THE DEVELOPMENT ABILITY OF ENGLISH READING COMPREHENSION SKILL BY USING COOPERATIVE LEARNING STAD TECHNIQUE AND MIND MAPPING OF GRADE 9 STUDENTS

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ABSTRACT

The objectives of the research were to: 1) develop the instructional plans for teaching English Reading Comprehension Skill by Using Cooperative Learning STAD Technique and Mind Mapping of Grade 9 Students. 2) compare their pretest and post-test achievement. 3) effectiveness Index and 4) studying learners satisfaction with English under the instructional plans for Development Ability of English Reading Comprehension Skill by Using Cooperative Learning STAD Technique and Mind Mapping. Subjects for this research were 18 of Grade 9 students of Ban Khumuang School who were studying in the second semester of the academic years 2013. They were selected by purposive sampling. There were 4 instruments used in this study: 6 instructional plans for teaching English Reading Comprehension Skill by Using Cooperative Learning STAD Technique and Mind Mapping of Grade 9 Students; English reading comprehension ability test; the achievement test in reading English; a rating scale questionnaire for studying learners satisfaction. The statistics used for analyzing the data were mean, percentage, standard deviation and t-test.

The results are as follows:

1. The effectiveness of The Development Ability of English Reading Comprehension Skill by Using Cooperative Learning STAD Technique and Mind Mapping of Grade 9 Students was at 76.20/78.52 which was higher than the set criterion.

2. The English Reading Comprehension proficiency post-test of the student learning through the Cooperative Learning STAD Technique and Mind Mapping was significantly higher than that of the pre-test at the .01 level.

3. The value of the effectiveness index indicator of the learning by Using Cooperative Learning STAD Technique and Mind Mapping of Grade 9 Students was 0.6923.

4. The satisfaction with The Development ability of English Reading Comprehension Skill by Using Cooperative Learning STAD Technique and Mind Mapping of Grade 9 Students was high (X = 4.50, S.D. = 0.49).

KEYWORDS: English reading comprehension, Cooperative learning STAD technique, Mind mapping
THE DEVELOPMENT OF THAI LANGUAGE LEARNING PLANS ON CREATIVE WRITING FOR PRATHOMSUUKSA 4 STUDENTS BY USING PACKAGES ON CREATIVE WRITING SKILLS

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ABSTRACT

The purposes of this research were 1) to develop Thai language learning plans on creative writing by using packages on creative writing skills for Prathomsuuksa 4 students based on efficiency criterion of 80/80, 2) to examine the effectiveness index of learning activities on creative writing skills by using packages on creative writing skills for Prathomsuuksa 4 students, 3) to compare the students’ creative writing of Thai language before and after learning through use packages on creative writing skills and 4) to study the students’ satisfaction with learning by using a set of creative practices skill. The samples group consisted of 20 Prathomsuuksa 4 students studying in the second semester of the academic year 2013 at Loei Tad Noon Pattana School. The instruments used in this research were packages on creative writing skills, learning plans, a creative writing test, and a questionnaire for assessing students’ satisfaction. The statistics used in analyzing data for this research were percentages, mean, standard deviation, and t-test (Dependent Sample)

The results of this research were as follows:

1. The efficiency of Thai language learning plans on creative writing for Prathomsuuksa 4 Students by using packages on creative writing skills was 91.63/88.63, which was higher than efficiency criterion of 80/80.
2. The effectiveness index of creative writing learning by using packages on creative writing skills was 0.7513 or 75.13%.
3. The creative writing ability after using the packages on creative writing skills was significantly higher than before using them at the level of significance .05
4. The students’ satisfaction with creative writing learning by using packages on creative writing skills found at the high level ( X̄ = 2.47, S.D. = 0.24).

KEYWORDS: Thai Language learning plans, Creative writing skills
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THE DEVELOPMENT OF LESSON PLANS FOR PRATHOMSUEKSA 3 STUDENTS LEARNING TO WRITE WORDS NOT FOLLOWING SPELLING RULES BY USING WRITING SKILL-PRACTICE EXERCISES OF THE THAI CONTENT STRAND

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ABSTRACT

This research aimed to: 1) develop lesson plans for Prathomsueksa 3 students learning to write words that do not follow spelling rules by using writing skill-practice exercises that meet the efficiency value of 80/80, 2) examine the effectiveness index of the students' learning how to write words not following the spelling rules by using the writing skill-practice exercises of the Thai Content Strand, 3) compare the students' achievement before and after learning to write words not following the spelling rules by using the writing skill-practice exercises, and 4) investigate the students' satisfaction toward learning to write words not following the spelling rules by using the writing skill-practice exercises of the Thai Content Strand. The sample consisted of 13 Prathomsueksa 3 students studying in the second semester of the academic year 2013 at Ban Pu Din School under Roi-et Office of Primary Education Service Area 2. The instruments used for data collection in the study were 10 lesson plans for teaching Prathomsueksa 3 students to write words not following the spelling rules by using the writing skill-practice exercises, 10 sets of writing skill-practice exercises for writing words not following the spelling rules, a four-multiple choice achievement test with 30 items, and a 10-item questionnaire for assessing the students' satisfaction toward learning to write words not following the spelling rules by using the writing skill-practice exercises of the Thai Content Strand. The statistics used for data analysis were percentage, mean and standard deviation. Dependent Samples t-test was used for testing hypothesis.

Findings of the study were as follows:
1. The efficiency value of the lesson plans for teaching Prathomsueksa 3 students to write words not following the spelling rules by using the writing skill-practice exercises was 82.77/89.74, which was higher than criterion;
2. The effectiveness index of the students' learning to write words not following the spelling rules by using the writing skill-practice exercises was 0.81, indicating that the students' learning achievement increased 81.00 %;
3. The students' posttest achievement in learning to write words not following the spelling rules by using the writing skill-practice exercises was higher than that of the pretest at the .05 level of significance; and
4. The students' satisfaction toward learning to write words not following the spelling rules by using the writing skill-practice exercises of the Thai Content Strand was found at a high level.

KEYWORDS: Instructional plans, Writing words, Writing Skill-Practice
THE DEVELOPMENT OF LEARNING ACHIEVEMENT AND CRITICAL THINKING ABILITY ON THE TOPIC OF “SOUND AND AUDIBILITY” THROUGH INQUIRY LEARNING CYCLE APPROACH, PRATHOM 5 STUDENTS

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ABSTRACT

This research is aimed to: 1) develop inquiry learning with the theme of “Sound and Audibility” to gain efficiency value of 80/80; 2) study effectiveness index (E.I.) of learning by using Prathom 5 students learned by using inquiry learning; 3) Compare science learning achievement of Prathom 5 students through inquiry learning; and 4) Study critical thinking ability of Primary 5 students learned by using inquiry learning. The target group used in the research was 31 Prathom 5 students, obtained through purposive sampling technique. in semester 2, academic year 2013, Ban Fang Wittaya School, Kranuan District, Khon Kaen Province, The tools used in research were 1) 10 science lesson plans basically on inquiry learning with the theme of “Sound and Audibility”, 2) science learning achievement test with the theme of “Sound and Audibility” comprising 30 items, and 3) critical thinking ability test with 21 items. This research was one-group pre-test-posttest design. The statistics used to compare the data were mean, percentage, standard deviation and Dependent Samples t-test was use for testing hypothesis.

The findings were:

1. Lesson plans basically on inquiry learning with the theme of “Sound and Audibility” gained the efficacy equals 91.16/80.97 which was higher the criterion prescribed 80/80.
2. The indicators of Prathom 5 students’ learning effectiveness learning through inquiry learning was 0.6350
3. Prathom 5 students’ learning achievement learning through inquiry cycle gained post-test score higher than pretest score at the.01. level of significance.
4. Critical thinking ability gained from inquiry learning of Prathom 5 students, both before and after learning, was different at the.01. level of significance.

KEYWORDS: Learning achievement, Critical thinking sound
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ABSTRACT

The objectives were: 1) to develop the Electronic Picture Story Book for students with learning disabilities, Secondary school with the efficiency value of 70/70; 2) to study effectiveness index of learning with Electronic Picture Story Book for students with learning disabilities, secondary school. 3) to study satisfaction of secondary school students with learning disabilities towards learning by using Electronic Picture Story Book. The targets group are M. 1-3 students with learning disabilities, their reading comprehension level is of in normal intelligence and without multiple disabilities. The participants were 15 students in Bankokpapu-wittayaschool under the Office of Khon Kean Educational Service Area 2 in 2nd Semester, academic year 2013. Instruments used in the research consisted of (1) electronic picture story book 3 stories, (2) 15 lesson plans, 1 hour each and (3) a reading comprehension skills test with 20 questions. The statistics used for data analysis were percentage, mean and standard deviation. The research findings found as follows:

1. The Electronic Picture Story Book for the students with learning disabilities, secondary school was efficient in 86.22/79.33 which is higher than the specified performance criteria.

2. The efficiency index of learning with the Electronic Picture Story Book for the students with learning disabilities was 0.68 or 68 percent.

3. The students satisfaction towards learning by using the Electronic Picture Story Book was at a very good level.

KEYWORDS: Reading comprehension, Learning disabilities, Electronic picture story book
DEVELOPING LEARNING ACHIEVEMENT ON THE NEW WORDS IN THAI LANGUAGE, ANALYTICAL THINKING, AND LEARNING RETENTION OF PRATHOMSUUKSA 1 STUDENTS THROUGH BRAIN – BASED LEARNING ACTIVITY.

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ABSTRACT

The purposes of this research were 1) to determine the efficiency of learning management on the new words in Thai language through brain–based learning activity based on the 80/80 standardized criteria, 2) to compare the learning achievement on the new words in Thai language, and analytical thinking of Prathomsuksa 1 students between before and after learning through brain–based learning activity, 3) to determine the learning retention of students after learning through brain–based learning activity. The subjects used in this research consisted of 15 Prathomsuksa 1 students studying in the second semester of 2013 academic year at Ban Phudin school under the office of Roi-et elementary educational service area 2. The research instruments were lesson plans on the new words in Thai language through brain–based learning activity, the learning achievement test, and the analytical thinking test, the data was analyzed by using percentage, mean, standard deviation, and t-test (dependent samples).

The research results were as follows:

1. The efficiency of learning management on the New Words in Thai language through brain–based learning activity yielded 89.29/86.33 efficient which was higher than the 80/80 criteria established.
2. The learning achievement on the New Words in Thai language, and analytical thinking of Prathomsuksa 1 students after learning through brain–based learning activity was significantly higher than that before at the level of .05
3. The students had learning retention on the New Words in Thai language after learning through brain – based learning activity.

KEYWORDS: Developing learning achievement, New Words, Retention
THE DEVELOPMENT OF MATHEMATICAL READINESS BY PROVIDING COOPERATIVE EXPERIENCE FOR ANUBAN 2 STUDENTS

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ABSTRACT

This research aims to 1) develop the provision of cooperative experience to be more efficient following the 80/80 set criterion. 2) assess Mathematical Effectiveness Index for Anuban 2 students before and after providing cooperative experience. 3) study learning behaviors for Anuban 2 students which respond to cooperative experience.

Target group used for this research is Anuban 2 students, semester 2, academic year 2013 of Wangsaphung Municipality School 1, Wangsaphung, Loei, Education Division, Wangsaphung Municipal Office, 28 people totally. Research instruments are cooperative experience, mathematical assessment form, and learning behavior assessment form for Anuban 2 students after providing cooperative experience. Statistical data analyses are Validity, Percent, Average, and Standard Deviation.

The results showed that;

1. The efficiency of providing cooperative experience for Anuban 2 students is 98.33/96.73 which is higher than the 80/80 set criterion.
2. Mathematical Effectiveness Index for Anuban 2 students, the students are ready before providing cooperative experience for 0.8630 which means they get more development for 86.30 percent.
3. Learning behavior of whole Anuban 2 students after providing cooperative experience is excellent.

KEYWORDS: Mathematic, Cooperative
THE MATHEMATICAL READINESS PREPARATION USING L.T. LEARNING TECHNIQUE FOR KINDERGARTEN 2

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ABSTRACT

The purposes of this research were; 1) to develop performance experience plan readiness on mathematics through for using L.T. Learning Techniques for Kindergarten 2 towards the determined standard efficiency criterion of 80/80 2) to study the effectiveness index of readiness on Mathematics through using L.T. Learning Techniques for Kindergarten 2 3) to study the students’ learning behavior towards the development of readiness on Mathematics towards using L.T. Learning Techniques for Kindergarten 2.

The Sample used in this study were students from kindergarten 2/1 Ban Nongbuakumsaen School under the Office of Nong Bua Lamphu Primary Education Service Area 2. 2 semester 2013 Academic year, 30 People. Tool used in this study were; the learning experience Plans with Using L.T. Learning Technique for Kindergarten 2 20 plans The Mathematical Readiness Preparation Test of the early child hoods 35 items and satisfaction assessment behavior of young children 1 issue. The data were analyzed by percentage, mean, and standard deviation.

1. Performance experience plan readiness on mathematics through for using L.T. Learning Techniques for Kindergarten 2 Students values were 88.66/87.80 higher than the criterion.

2. Effectiveness index of readiness on Mathematics through for using L. T. Learning Techniques for Kindergarten 2 was 0.589. That is progressive increased 59 percent.

3. The students’ learning behavior for using experience plan readiness on mathematics through by using L.T. Learning Techniques for Kindergarten 2 was rated at high level. A mean of 2.76 and standard deviation equal to 0.38.

KEYWORDS : Mathematical readiness preparation, L.T. Learning Technique
A DEVELOPMENT OF PRATHOMSUHSA II STUDENTS’ ACHIEVEMENT ON LEARNING CONSONANT CLUSTER WORDS THROUGH STAD ACTIVITIES AND SKILL PRACTICE EXERCISES OF THE THAI CONTENT STRAND

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ABSTRACT

The research aimed to develop the plans of learning organization for Prathom suksa II students on learning consonant cluster words through STAD activities and the skill practice exercises of the Thai content strand at the 80/80 efficiency criterion, to determine the effectiveness index of the students' learning to compare the students' achievement scores between before and after the teaching process through STAD activities and the skill practice exercises, and to assess the students' satisfaction on learning. The sample group consisted of 30 Prathom suksa II students, obtained by using the simple random sampling technique from Ban Chard Community School. During the 2013 academic year, semester 2. The instruments of the study included the plans of learning organization, 8 sets of skill practice exercises, a 20-item achievement test, and a 10-item questionnaire for satisfaction assessment. The collected data were analyzing by using mean, standard deviation, and t-test (Dependent Samples). The findings revealed the following:

1. The plans of learning organization for Prathom suksa II students on learning consonant cluster words through STAD activities and the skill practice exercises of the Thai content strand had a general effectiveness index of 83.92/84.14, which met the established 80/80 efficiency criterion.

2. The effectiveness index of students' learning consonant clusters words through activities and the skill practice exercises was 0.6865, indicating that the students' achievement increased 68.65%.

3. The Prathom suksa II students as a whole showed gains in achievement score through STAD and the skill practice exercises of the Thai content strand after teaching higher than that of the achievement score before teaching at the .05 level of statistical significance.

4. The students’ satisfaction on learning through STAD activities and the skill practice exercises of the Thai content strand was found at the high level

KEYWORDS: Learning Achievement, Clusters, STAD Activities, Skill practice exercise
THE DEVELOPMENT OF MATHEMATICS READINESS BY USING THAI FOLK PLAY AMONG KINDERGARTEN-2 CHILDREN

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ABSTRACT

This study aimed were (1) to improve Thai folk games holding which intended to promote kindergarten-2 students’ Mathematics readiness to be effective as the standard criteria 80/80, (2) study the effectiveness index, and (3) study kindergarten-2 students’ learning behavior towards the development of their Mathematics readiness by using Thai folk games. The sample group were 21 kindergarten-2 students (room 2/1) from Baanwangmuang School (semester 2 and academic year 2013). The sample group was selected by simple random sampling. The instruments used in the study were (1) a learning experience plan using Thai-folk-game activities, (2) the assessment form of Mathematics readiness of which the validity was 0.80 to 1.00, and (3) the observation form of students’ learning behaviors towards Thai-folk-game activities to improve their Mathematics readiness. The statistics used to analyze the data were validity, percentage, mean, and standard deviation.

The analysis reported that
1. The effectiveness of the learning experience plan to improve students’ Mathematics readiness among kindergarten-2 students was 83.03/81.42 which was as the established 80/80 criterion.
2. The effectiveness index of Mathematics readiness to create the Thai-folk-game activities for the kindergarten-2 students was 0.6000, and this means the students improved 60%,
3. The overall image of the students’ learning behaviors towards Thai folk games was in a high level.

KEYWORDS: Mathematics, Thai Folk Play
LEARNING ACTIVITY MANAGEMENT DEVELOPMENT BY APPLYING EDUCATIONAL GAME IN ORDER TO SUPPORT THE ANALYTICAL ABILITY FOR THE KINDERGARTEN 2

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ABSTRACT

This research were to 1. Develop the learning activity management development by applying the educational game in order to support the analytical ability for the kindergarten 2 students that had the standard efficiency at 80/80.  2. Study the effectiveness index of the analytical ability of the kindergarten 2 students. 3. Compare the analytical ability of the kindergarten 2 students in the pre and post instruction by applying the educational game.  4. Study the learning behavior of the 8 kindergarten 2 students by arranging learning activity in order to support the analytical ability by applying the educational game, in the second semester of academic year 2013 at Ban Non Rae School, Po Phan Sub district, Na Chuak District, Maha Sarakham Province, Maha Sarakham Primary Education Service Area 2, by the Purposive Sampling. The tools used in this research were 1. The learning activity management by applying the educational game  2. The analytical ability test  3. The learning behavior observing form used in the data analysis including mean, standard deviation, percentage, and the t-test (Dependent sample)

The result was found that
1. The learning activity management by applying educational game in order to support the analytical ability of the kindergarten 2 students had 89.25/88.75 which was higher than the appointed standard.
2. The effectiveness index of the educational game in order to support the analytical ability of the Kindergarten 2 students was equal to 0.67.
3. The analytical ability of the kindergarten 2 students after the activity by applying the educational game increased with the statistical significance level at .05.
4. The learning behavior of the learning activity management by applying educational game in order to support the analytical ability of the kindergarten 2 students was at the good level. ( X = 2.65, S.D. = 0.48)

KEYWORDS: Learning activity management, Applying educational game
THE LEARNING ACTIVITY DEVELOPMENT BY APPLYING THE PRACTICAL PROCESS ON HERBAL DRINKS FROM VEGETABLES AND FRUITS, OCCUPATION AND TECHNOLOGY DEPARTMENT, PRATHOMSUKSA 5

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ABSTRACT

This research objective were to 1) develop the learning activity by applying the practical process on herbal drinks from vegetables and fruits, Occupation and Technology Department, Prathomsuksa 5 to have efficiency according to the standard 80/80 2) study the effectiveness index of the learning activity by applying the practical process on herbal drinks from vegetables and fruits, Occupation and Technology Department, Prathomsuksa 5 3) compare the learning achievement of the Prathomsuksa 5 students between the pre and post instruction by the learning activity by applying the practical process on herbal drinks from vegetables and fruits, Occupation and Technology Department, Prathomsuksa 5 4) study the practical skill by the learning activity by applying the practical process 5) study the satisfaction of the Prathomsuksa 5 students toward the learning by applying the practical process. The target of this research was the 18 students in Prathomsuksa 5, the second semester of academic year 2013, at Ban Non Kha School, Phu Khiao District, Chaiyaphum Primary Education Service Area 2. The tools used in this research were the learning plan, evaluation test, practical skill test, and satisfaction questionnaire. The statistics used were mean, percentage and standard deviation, and learning achievement comparison between pre and post instruction by applying t-test statistics (Dependent Sample)

Research findings were as follows:
1. The learning management’s efficiency on herbal drinks from vegetables and fruits, Occupation and Technology Department, Prathomsuksa 5 was equal to 81.30/83.15, as the appointed standard.
2. The learning management’s effectiveness index on herbal drinks from vegetables and fruits, Occupation and Technology Department, Prathomsuksa 5 was equal to 0.624.
3. The learning achievement after the learning management by applying the practical process on herbal drinks from vegetables and fruits, Occupation and Technology Department, Prathomsuksa 5 was increased after the instruction with the statistical significance level at .01
4. The students had the practical skill of herbal drinks making from vegetables and fruits, and the overall was at the hightest level. (\( \bar{X} = 4.75, \text{S.D.}= 0.44 \))
5. The students’ satisfaction toward the learning management on herbal drinks from vegetables and fruits, Occupation and Technology Department, Prathomsuksa 5, and the overall was at the hightest level. (\( \bar{X} = 4.75, \text{S.D.}= 0.69 \))

KEYWORDS: Learning activity development, Practical process
THE DEVELOPMENT OF MATHEMATICAL READINESS BY USING COGNITIVE GAMES FOR KINDERGARTEN 1 STUDENTS

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ABSTRACT

The purposes of this research were 1) to manipulate students’ learning experiences by using cognitive games in order to develop the mathematical readiness in learning for kindergarten 1 students based on 80/80 standardized criteria efficiency, 2) to examine the effectiveness index of experience managements by using cognitive games, 3) to study students’ achievement on experience managements through use cognitive games to development the Mathematical readiness for kindergarten 1 students. The mathematical readiness in learning for kindergarten 1 students consisted of 20 kindergarten 1 students studying in the second semester of the academic year 2013 at Bung Ta Kai School, Loei Primary Educational Service Area Office 2. The instruments used in this research were 16 experience managements plans consist of vegetables, toys, flowers and fruits, 20 item mathematical readiness test, and the students' observable behavior. The statistics used in analyzing data for this research were percentages, mean, standard deviation and E1 / E2.

The results of this research are as follows:

1. The efficiency index of the experience managements on development of mathematical readiness by using cognitive games for kindergarten 1 students was 81.02/88.00, which was higher than standardized criteria of 80/80.
2. The effectiveness index of the experience managements on development of mathematical readiness by using cognitive games for kindergarten 1 students was 0.7391, which that the percentage was 73.91.
3. The students’ behavior on development of mathematical readiness by using cognitive games for kindergarten 1 students was found at the high level.

KEYWORDS: Mathematical readiness, Cognitive games, Kindergarten 1 students
THE DEVELOPMENT OF LEARNING ACTIVITIES BASED ON CIPPA MODEL FOR OCCUPATION AND TECHNOLOGY LEARNING STRAND GROUP ENTITLED BUYING GOODS AND COMMUNICATION.

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ABSTRACT

This study aimed to 1) develop learning activities based on CIPPA Model entitled Buying Goods and Communication of Occupation and Technology Learning Strand Group for Mattayomsuksa 2 to meet the effectiveness criteria 80/80. 2) Study the efficiency index of CIPPA model learning activities entitled Buying Goods and Communication. 3) Compare students' learning achievement before and after learning entitled Buying Goods and Communication through CIPPA model. 4) Study students' responsibility behaviors after learning. 5) Study students' satisfaction towards learning activities. The sample used in the study was a class of 32 Mattayomsuksa 2 students at Sawatheepittayasan School under The Secondary Educational Service Area Office 25 in 2013 academic year. The sample was obtained by group randomized sampling. The study instruments included 1) 6 CIPPA model learning plans entitled Buying Goods and Communication. 2) 30 achievement test items 3) 10 students' responsibility test items 4) 15 items of students' satisfaction towards CIPPA model learning activities 5 rating scale questionnaire. The statistics used for analyzing data were percentage, means, standard deviation and t-test (Dependent samples) was employed to test hypotheses.

The results of the study were as follows:

1. Learning through CIPPA model learning activities entitled Buying Goods and Communication of Vocation and Technology group subjects for Mattayomsuksa 2 met the criteria, (85.04/83.43)
2. The efficiency index of learning through CIPPA model learning activities entitled Buying Goods and Communication of Occupation and Technology learning strand group for Mattayomsuksa 2 was 0.6653.
3. Learning achievement through CIPPA model learning activities entitled Buying Goods and Communication after learning was at the level of .01 which was significantly higher than pretest.
4. Students' responsibility after learning through CIPPA model learning activities as a whole was at the high level (X = 3.73 , S.D. = 0.10)
5. Students' satisfaction towards CIPPA model learning activities entitled Buying Goods and Communication on the whole, was at the high level (X = 4.12 , S.D. = 0.85)

KEYWORDS: CIPPA Model, Occupation, Technology learning strand group
DEVELOPMENT OF LANGUAGE READINESS ON LISTENING AND READING FOR THE KINDERGARTEN 2 THROUGH THE USE OF PICTURED STORIES

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ABSTRACT

The purposes of this research were 1) to develop a set of experience management applied by picture stories for language readiness development on listening and reading for kindergarten 2, gearing towards the determined standard efficiency criterion of 80/80. 2) to study the effectiveness index of the language readiness focus on listening and reading of the students who received the experience management and 3) to study learning behavior of students through the use of experience management applied by picture stories. The research samples used were 30 kindergartens, Class 2/2, of Ban Erawan School, under the Office of Loei Provincial Primary Education, enrolled in 2014 academic year, and selected by Purposive sampling. The research instruments used included the set of experience management applied by picture stories for language readiness development on listening and reading with validity between 0.60 and 1.00; the language readiness on listening and reading test with validity between 0.60 and 1.00; and, learning behavior of students toward the set of experience management with validity between 0.60 and 1.00. The statistics used for the data analysis were validity, mean, standard deviation, and t-test (Dependent samples).

The research results were as follows:

1. The efficiency of the experience management for language readiness development on listening and reading by using picture stories for the kindergarten 2 were 89.06/87.78, both of which were significantly higher than those of the determined standard efficiency criterion of 80/80.

2. The effectiveness index of the language readiness on listening and reading applied by picture stories for the kindergarten 2 was 0.6244.

3. The learning behavior of students toward the set of experience management applied by pictured stories for language readiness development on listening and reading for kindergarten 2 in an overall picture, was at the good level.

KEYWORDS: Language Readiness, Pictured Stories
DEVELOPMENT OF READING AND WRITING SKILLS IN REGULARLY AND IRREGULARLY WORDS SPELLING THROUGH MIND MAPPING AND COOPERATIVE LEARNING, STAD (STUDENT TEAM ACHIEVEMENT DIVISION) IN THAI LEARNING AREA, PRATHOMSUKSA 2

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ABSTRACT

The objectives of this study were to; 1) develop lesson plans of reading and writing skills in regularly and irregularly words spelling through mind mapping and cooperative learning, STAD in Thai learning area, Prathomsuksa 2 with the required efficiency of 80/80, 2) identify the effectiveness index of lesson plans of reading and writing skills in regularly and irregularly words spelling through mind mapping and cooperative learning, STAD in Thai learning area, Prathomsuksa 2, 3) compare the achievement between pretest and posttest score, and 4) study reading and writing skills in regularly and irregularly words spelling through mind mapping and cooperative learning, STAD in Thai learning area, Prathomsuksa 2. 32 Prathomsuksa 2 students in Nikhom Kuchinarai Moo 2 school, academic year 2013 were selected as sample group using cluster random sampling technique by classroom random unit. Research instruments were; 1) 8 lesson plans of reading and writing skills in regularly and irregularly words spelling through mind mapping and cooperative learning STAD in Thai learning area, Prathomsuksa 2, 2) 20 items of 3 alternatives multiple choices achievement test, 3) 40 items of reading and writing skills test through mind mapping and cooperative learning, STAD in Thai learning stand, Prathomsuksa 2. The statistics used to analyze the collected data were means, percentage, standard deviation, and t-test (Dependent Sample).

The results of the study were as follows:

1. The efficiency (E₁/E₂) of the lesson plans of reading and writing skills in regularly and irregularly words spelling through mind mapping and cooperative learning, STAD in Thai learning area, Prathomsuksa 2 was 84.91/82.50 which was higher than the determined criterion of 80/80.

2. The effectiveness index of lesson plans of reading and writing skills in regularly and irregularly words spelling through mind mapping and cooperative learning, STAD in Thai learning area, Prathomsuksa 2 was 0.6327.

3. Posttest score of students who was taught by the lesson plans of reading and writing skills in regularly and irregularly words spelling through mind mapping and cooperative learning, STAD in Thai learning area, Prathomsuksa 2 was statistically significant higher than the pretest score at the level of 0.5.

4. Having been taught by the lesson plans of reading and writing skills in regularly and irregularly words spelling through mind mapping and cooperative learning, STAD, the average score of reading skills was at the percentage of 82.97 and the percentage of students whose reading score was at the percentage of 80 or more was 87.50 whereas the average score of writing skills was at the percentage of 81.72 and the percentage of students whose writing score was at the percentage of 80 and above was 81.25.

KEYWORDS: Irregularly words, Cooperative learning
DEVELOPMENT OF LEARNING MANAGEMENT USING PROJECT LEARNING ACTIVITY TITLE PRODUCTION OF BIO – FERMENTED FERTILIZER FROM THE SHELLY SHELLS UNDER SUBJECT AREA CAREER WORK AND TECHNOLOGY FOR PRIMARY 6 CLASS

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ABSTRACT

This research had the following objectives: 1) develop learning management using activity learning project under topic production of bio – fermented fertilizer form the shelly shells under subject area career work and technology for primary 6 class; based on the 80/80 effective criteria; 2) compare the management results of learning management using project learning activity before and after learning of students learning by using project learning activity title production of bio – fermented fertilizer of subject area career work and technology for primary 6 class and 3) study students’ satisfaction toward learning management results using activity learning project under title production of bio-fermented fertilizer from the shelly shells under subject area career work and technology for primary 6 class. The target group used in this research was 28 primary six students from Konrieb Anukoon School under the office of Kalasin Educational Service Area Zone 1, second semester of the school year 2013 using the purposive random sampling technique. The instruments used in this study were project learning management plans with the total number of 7 plans. The validity values ranged form 0.80 – 1.00. The achievement test composed of 30 questions. The difficult indexes ranged from 0.25 – 0.67. The discrimination indexes ranged from 0.50- 0.90. The total value of reliability was 0.87. The satisfaction questionnaire composed of 20 questions with the discrimination indexes ranged from 0.30 – 0.69 and the total value of reliability was 0.81. The statistics used in this study were percentages, means, standard deviations and t-test (Dependent Samples).

The findings were as follows:
1. Project learning management title the production of bio – fermented fertilizer from the shelly shells and learning area group vocation and technology for primary six class had 83.83/82.26 effectiveness.
2. The results of learning after learning using project learning activity under title the production of bio – fermented fertilizer after learning was higher than before learning statistically significance at the .05 level.
3. Students were satisfied with learning by using project learning activity under title the production of bio – fermented fertilizer in general was in the much level (X = 2.73, S.D. = 0.65)

KEYWORDS: Learning management, Activity learning project
DEVELOPMENT OF LEARNING ACHIEVEMENT RESULTS USING COOPERATIVE STAD TECHNIQUE WITH ADDITIONAL READING BOOKS FOR PRIMARY FOUR CLASS TOPIC BUDDHISM, LEARNING AREA GROUP SOCIAL, RELIGION AND CULTURE

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ABSTRACT

This research had the following objectives: 1) To study the effectiveness of learning management results using cooperative STAD Technique with additional reading books for primary four class under topic Buddhism, Learning area group social, religion and culture based on the 80/50 effective criteria, 2) To study learning index of primary 4 students who studied by using cooperative STAD Technique with additional reading books; 3) To compare learning achievement results before and after learning for primary 4 students by using cooperative STAD Technique with additional reading books topic Buddhism under learning area group social, religion and culture and 4) To study satisfaction of primary four students who studied by using cooperative STAD Technique with additional reading books title Buddhism under learning area group social, religion and culture. The target group was 12 primary 4 students from Takdad Sutham Prachasan school under Roi – Et Office of primary Educational Service Area 2. The instruments used in this study were: 1) Twelve (12) learning plans using cooperative learning technique; 2) Ten (10) additional reading books; 3) Four (4) Choices of multiple learning achievement test with thirty (30) questions and 4) questionnaire for asking level of satisfaction toward learning by using cooperative Stad Technique with additional reading books for primary four students under topic Buddhism under learning area group social, religion and culture with fifteen (15) questions. The statistics used in analyzing the data were percentages, means, standard deviations and t-test for testing statistics (Dependent Sample).

The Results of research were as follows:

1. The effectiveness results of learning by using cooperative STAD Technique with additional reading books for primary four students topic Buddhism under learning area group social, religion and culture was 86.67/84.44 effectiveness.

2. Learning efficiency index of primary four students by using cooperative STAD Technique with additional reading books was 0.7083 or 70.83 percents.

3. Learning achievement result after learning by average was higher than before learning statistically significance at the .01 level.

4. Primary four student’s satisfaction toward learning by using cooperative STAD Technique with additional reading books under topic Buddhism, learning area group social, religion and culture, in general was in the very much level ($\bar{x} = 4.66$, S.D. = 0.54)

KEYWORDS: Learning Achievement, STAD Cooperative Learning
DEVELOPMENT OF MATHAYOMSUUKSA 1 STUDENTS’ ACHIEVEMENT IN LEARNING BUDDHIST DHAMMA PRINCIPLES THROUGH STAD WITH LEARNING PACKAGE IN SOCIAL STUDIES, RELIGION AND CULTURE

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ABSTRACT

This research aimed to 1) develop instructional plans for Mathayomsuksa 1 students learning Buddhist Dhamma Principles through STAD activities with a learning package that meet the 80/80 efficiency criterion, 2) determine the effectiveness index of the students' learning through use of STAD and the learning package, 3) compare the students' learning achievement before and after learning with STAD and the package, and 4) assess the students' satisfaction toward learning through these activities. The sample group for this research consisted of 23 Mathayomsuksa 1 students studying in the second semester of the academic year 2013 at Ban Poe Huay School under Surin Office of Primary Education Service Area 2 obtained through purposive sampling. The instruments used in this study were 1) 12 instructional plans for Mathayomsuksa 1 students learning Buddhist Dhamma Principles through STAD activities, 2) a learning package of 6 topics, 3) a 40-item learning achievement test, 4) and a 12-item questionnaire for assessing the students' satisfaction toward learning through STAD activities and the learning package. The statistics used in data analysis were percentage, mean, standard deviation and t-test (Dependent Samples).

Findings of the study are as follows:

1. The efficiency index of the instructional plans for Mathayomsuksa 1 students learning Buddhist Dhamma Principles through use of STAD and the learning package was 82.86/83.37, which met the established 80/80 efficiency criterion.
2. The effectiveness index of Mathayomsuksa 1 students' learning through use of STAD and the learning package was 0.7367, indicating that the students' learning achievement increased 73.67%.
3. Mathayomsuksa 1 students who learned Buddhist Dhamma Principles through use of STAD and the learning package had higher posttest achievement than that of the pretest at the .05 level of statistical significance.
4. The satisfaction of Mathayomsuksa 1 students of Ban Poe Huay School who learned Buddhist Dhamma Principles through use of STAD and the learning package in Social Studies, Religion and Culture was found at the highest level (X = 4.68, S.D. = 0.47).

KEYWORDS: Learning achievement, Buddhist Dhamma principles
THE DEVELOPMENT OF COMPREHENSION READING ABILITY BY USING LEARNING ACTIVITY PACKAGE WITH COOPERATIVE LEARNING, CIRC TECHNIQUE IN FOREIGN LANGUAGE STRAND FOR MATTHAYOM SUESA 3 STUDENTS

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ABSTRACT

The purposes of this research were 1) to develop lesson plans using cooperative learning technique (CIRC) in foreign languages learning substance group for Matthayomsuksa 3 students based on the 75/75 standard. 2) to determine the effectiveness index of the lesson plans using cooperative learning technique (CIRC). 3) to compare students’ reading competency between before and after learning with cooperative learning technique (CIRC). 4) to determine the satisfaction of Matthayomsuksa 3 students toward learning with cooperative learning technique (CIRC). The subjects used in this research consisted of 35 Matthayomsuksa 3 students studying in the second semester of academic year 2013 at Konsarnwittayakom School, Konsarn district, Chaiyaphum Province, under the secondary educational service area 30. The research instruments were eight lesson plans using cooperative learning technique (CIRC), eight sets of learning activities using cooperative learning technique (CIRC), 30-item achievement tests of English reading comprehension, 20 items of questionnaires asking students’ satisfaction toward learning with cooperative learning technique (CIRC). The data were analyzed by using percentage, mean, standard deviation and hypothesis testing using t-test (dependent samples).

The results were as follows:
1. The efficiency of the lesson plans was 80.99/78.76.
2. The effectiveness index of the lesson plans equaled 0.6214.
3. The students who learned with cooperative learning technique (CIRC) had higher reading ability with statistically significance at .05 levels.
4. Matthayomsuksa 3 students were overall satisfied with cooperative learning technique (CIRC) which had high level of satisfaction $\bar{X} = 4.28$, S.D. = 0.20.

KEYWORDS: Comprehension reading, Cooperative learning, CIRC Technique
DEVELOPING ABILITY IN THAI LANGUAGE CRITICAL READING, PROBLEM SOLVING THINKING, AND SELF–CONFIDENCE OF MATHAYOM SUKSA 3 (GRAD 9) STUDENTS BY USING COOPERATIVE LEARNING, NHT TECHNIQUE WITH DISCUSSION ACTIVITY.

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ABSTRACT

The purposes of this research were 1) to compare the ability in Thai language critical reading, problem solving thinking, and self hyphen confidence of Mathayom Suksa 3 (Grad 9) students before and after learning by using cooperative learning, NHT technique with discussion activity, 2) to determine the correlation among the abilities in Thai language critical reading, problem solving thinking, and self hyphen confidence of Mathayom Suksa 3 (Grad 9) students. The subjects used in this research were of 10 Mathayom Suksa 3 (Grad 9) students studying in the second semester of 2013 academic year at Thajoy Nongsra school under The Office of Roi-et Elementary Education Service Area 2. They were selected by using cluster random sampling. The research instruments were lesson plans in Thai language by using cooperative learning, NHT technique with discussion activity, a test of the ability in Thai language critical reading using, problem solving thinking test and self hyphen confidence test, The data were analyzed by using mean, standard deviation, pearson product moment correlation and t-test). Dependent Samples.

The research results were as follows:

1. The abilities in Thai language critical reading and problem solving thinking of Mathayom Suksa 3 (Grad 9) students after learning by using cooperative learning, NHT technique with discussion activity was significantly higher than that a test of Thai language critical reading ability of the pre-test at the level of .01 and the level of self hyphen confidence was at a high level.

2. The abilities in Thai language critical reading, problem solving thinking, and self hyphen confidence of Mathayom Suksa 3 (Grad 9) students after learning by using cooperative learning, NHT technique with discussion activity were significantly correlated among them at the .05 level.

KEYWORDS : Thai Language, Solving Thinking
RESULTS OF LEARNING MANAGEMENT BY USING THE SKILL PRACTICING FROM PERFORMANCE PROCESS UNDER TOPIC THE REST MATERIAL INVENTION IN LEARNING AREA GROUP VOCATION AND TECHNOLOGY FOR MATTAYOMSUUKA 3

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ABSTRACT

This study had the following objectives: 1) Develop the results of learning management by using the skill practicing form under topic the rest material invention of learning area group vocation and technology for Matayomsuksa 3 students which were qualified the 80/80 efficiency criteria; 2) examine the efficiency index of learning management by using the process of skill practicing form under topic the rest material invention; 3) Compare the results of the pre-test and post-test achievement by using the skill practicing form under topic the rest material invention; 4) investigate the level of students’ satisfaction toward learning management by using the rest material invention. The sample groups were 46 Matayomsuksa 3 students of Suwannaphumpitayapisan School under the office of secondary Educational service area 27 by using group random sampling technique. The instruments used in this study were: 1) six (6) learning plans; 2) six (6) sets of skill practicing form; 3) the achievement test of learning results with 40 numbers of questions; 4) the questionnaire for asking the level of satisfaction of students with the total number of 15 items. The standard deviation and the t-test (Dependent Sample).

The Results of research were as follows:

1. Learning management by using the skill practicing form under topic the rest material invention of the learning area group vocation and technology of Matthayomsuksa 3 students had the 80.28/85.87 efficiency level which was higher than the criteria constructed;

2. The efficiency index of learning management results by using the skill practicing form performance process under topic the rest material invention was 0.7263.

3. The achievement of students after learning was higher than before learning statistically significant at the .05 level.

4. The students were satisfied with learning by using the skill practicing form in general was in the most level (X = 4.79, S.D. = 0.042)

KEYWORDS: Performance Process, Skill exercises
THE DEVELOPMENT OF LEARNING ACTIVITIES USING PROGRAMMED LESSONS WITH CARTOONS FOR HEALTH PROMOTION, HEALTH AND PHYSICAL EDUCATION LEARNING STRAND GROUP FOR GRADE 4 STUDENTS

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ABSTRACT

This study aimed to: 1) develop programmed lessons with cartoons with a set criteria of efficiency at 80/80, 2) to study the effectiveness index of the learning activities using programmed instruction with cartoons for health promotion, health and physical education for grade 4 students, 3) to study the satisfaction of grade 4 students to learn a lesson with cartoons on series of health promotion, group learning of health and physical education. Sample group consists of 30 students of class 4/1 at 2 semester of the academic year 2013, Dunsat Community School, Kranuan District, Khon Kaen Province, under the Office of Elementary Education Area 4. The samples were selected by cluster random sampling technique. Research tools included lessons with cartoons, 7 sets of Health Plan, 7 books on health plan, multiple-choice achievement test with four choices in 30 items. The item discrimination was 0.32 - 0.84 with the reliability of 0.82 and a measure of satisfaction of the programmed instruction with cartoons, consisted of 10 items; each item has 5 levels, with the discriminative item ranging from 0.35 -0.87 and the reliability of 0.91. The statistics used in data analysis were percentage, mean and standard deviation.

The results showed that

1. Programmed lesson with cartoons on series of health promotion, group learning of health and physical education for grade 4 students gained the efficiency of 84.57 / 83.00, which was higher than the set criteria (80/80).
2. The effectiveness index of the learning activities using programmed lessons with cartoons on series of health promotion for grade 4 students is equal to 0.7371 or 73.71%.
3. Grade 4 students with learning activities using programmed lesson with cartoons on series of health promotion had the overall satisfaction at the highest level (X = 4.51, SD = 0.20).

KEYWORDS: Learning Activities, Cartoon
DEVELOPING LEARNING ACHIEVEMENT ON ANALYTICAL READING AND COMMUNICATIVE WRITING OF PRATHOM SUKSA 4 (GRAD 4) STUDENTS BY USING MIND MAPPING AND BBL ACTIVITY

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ABSTRACT

The purposes of this research were 1) To develop learning management on the analytical reading and communicative writing in Thai language of Prathomsuksa 4 (grad 4) students by using mind mapping and BBL activity based on the 80/80 standardized criteria, 2) To compare the analytical reading and communicative writing in Thai language of Prathomsuksa 4 (grad 4) students between before and after learning by using mind mapping and BBL activity. The subjects used in this research consisted of 30 Prathomsuksa 4 (grad 4) students studying in the second semester of 2013 academic year at Mueang Phumratt school under the office of Roi-Et elementary educational service area. The research instruments were lesson plans on the analytical reading and communicative writing in Thai language by using mind mapping and the analytical reading test, and, the communicative writing test. The data was analyzed by using percentage, mean, standard deviation, and dependent T-test.

The research results were as follows:

1. The efficiency of learning management on the analytical reading and communicative writing in Thai language of Prathomsuksa 4 (grad 4) students by using mind mapping and BBL activity was 83.76/81.11

2. The analytical reading and communicative writing in Thai language of Prathomsuksa 4 (grad 4) students after learning by using mind mapping and BBL activity was significantly higher than that before at the level of .01

KEYWORDS: Analytical Reading, Mind Mapping, BBL Activity
THE DEVELOPMENT OF READINESS ON MATHEMATICS THROUGH CREATIVE ART ACTIVITIES FOR KINDERGARTEN 2

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ABSTRACT

The objectives of this study were: 1) to develop readiness on mathematics through creative art activities for kindergarten 2 at the specified efficiency 80/80, 2) to examine the effectiveness index of readiness on mathematics through creative art activities for kindergarten 2, and 3) to explore students’ learning behaviors towards creative art activities for kindergarten 2. The target population of this study was 22 kindergarten 2 students of Ban Lao School, enrolled in the second semester of 2013 academic year. Research tools employed in this study included: the instructional plan of creative art activities for kindergarten 2, assessment test of the readiness on mathematics, and assessment test of students’ learning behaviors towards creative art activities for kindergarten 2. The statistics used to analyze data were percentage, average, and standard deviation.

Based on the results of the study, it found that:

1) the creative art activities used to develop readiness on mathematics for kindergarten 2 had efficiency as 90.60/93.85 which was higher than the specified criterion of 80/80.

2) the effectiveness index of kindergarten 2’s readiness on mathematics was 0.9035 indicated the development of students as 90.35 percent.

3) The overall learning behaviors of Kindergarten 2 students towards the creative art activities for kindergarten 2 were in a very high level which its’ average value was 2.80 and its’ standard deviation value was 0.42.

KEYWORDS: Mathematics, Creative Art
THE DEVELOPMENT OF LEARNING ACHIEVEMENTS ENTITLE “WORD WITH AND WITHOUT (ะ) VOWEL THROUGH COOPERATIVE GROUP ACTIVITIES; STAD AND DRILLINGS, THAI AREA FOR PRATOMSUksA 4 STUDENTS”

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ABSTRACT

The objectives of this study were to; 1) develop lesson plans entitle “word with and without (ะ) vowel through cooperative group activities; STAD technique and drillings, Thai area for Pratomsuksa 4 students with the required efficiency of E1/E2 (80/80), 2) study the effectiveness index of learning activities of Pratomsuksa 4 students entitle “word with and without (ะ) vowel through cooperative group activities; STAD technique and drillings, 3) compare the learning achievement between posttest and pretest score, and 4) study Pratomsuksa 4 students’ satisfaction on the developed learning activities entitle “word with and without (ะ) vowel through cooperative group activities; STAD technique and drillings. 30 Pratomsuksa 4/1 students of Chumchon Banchad school in 2nd semester of academic year 2013 were selected as sample group using cluster random sampling technique. Research instruments were; 1) 8 lesson plans entitle “word with and without (ะ) vowel through cooperative group activities; STAD technique and drillings, 8 skill drillings, 30 items of learning achievement test, and 15 items students’ satisfaction questionnaire. The statistics used to analyze the collected data were means, percentage, standard deviation, and t-test (Dependent Samples)

The results of the study were as follows:

1. The efficiency of lesson plans entitle “word with and without (ะ) vowel through cooperative group activities; STAD technique and drillings, Thai area for Pratomsuksa 4 students was 82.32/84.90
2. The effectiveness index of learning activities entitle “word with and without (ะ) vowel through cooperative group activities; STAD technique and drillings was 0.7161 or at the percentage of 71.61
3. Post test achievement score of students who learned with lesson plans entitle “ word with and without (ะ) vowel through cooperative group activities; STAD technique and drillings were higher than pretest achievement score at the .05 level of significance.
4. Having learned with lesson plans entitle “word with and without (ะ) vowel through cooperative group activities; STAD technique and drillings, Thai area for Pratomsuksa 4 students, students’ overall satisfaction was at “highest” level

KEYWORDS: Achievements, STAD Activity
THE DEVELOPMENT OF SOCIAL READINESS OF KINDERGARTEN 2 STUDENTS THROUGH THAI FOLK GAMES FOR CHILDREN

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ABSTRACT

The purposes of this research were 1) to develop Thai folk games management plans for kindergarten 2 students through children’s folk games with a set criteria of efficiency 80/80, 2) to study the effectiveness index of social readiness of kindergarten 2 students and 3) to study the students’ learning behaviors following the implementation of the Thai folk games management plans.

The target group of this research was 21 kindergarten 2 students of Ban Raipuay Mittrapap No 18 School, enrolled in the second semester of 2013 academic year. The research instruments were Thai folk games management plans, a test of social readiness and behavioral assessment of children’s learning to manage of Thai folk games activities. The statistics used for the data analysis were percentage, mean and standard deviation.

The research results were as follows:
1. The efficiency of Thai folk games management plans was 87.98/86.66 higher than the set criteria.
2. The effectiveness index of social readiness of kindergarten 2 was 0.7798 or 77.98% which implied that the social readiness was increased.
3. The overall learning behavior of the kindergarten 2 students was at the high level.

KEYWORDS: Social readiness, Thai folk games
THE DEVELOPMENT OF ACADEMIC ACHIEVEMENT BY USING THE COMPUTER ASSISTED LEARNING ON HEREDITY LESSON IN SCIENCE LEARNING GROUP FOR MATHAYOMSUUKSA 3 STUDENTS OF BAN NON SCHOOL

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ABSTRACT

The purposes of this study were (1) to develop and find the efficiency of The Computer Assisted Learning on Heredity lesson in Science Learning Group for Mathayomsuksa 3 students according to standard criterion of 80/80 ; (2) to find the effectiveness index of The Computer Assisted Learning on Heredity lesson in Science Learning Group for Mathayomsuksa 3 students ; (3) to compare the difference of the student achievement scores earned before and after using The Computer Assisted Instruction on Heredity lesson in Science Learning Group for Mathayomsuksa 3 ; and (4) to find satisfaction of students who learned from The Computer Assisted Learning on Heredity lesson in Science Learning Group for Mathayomsuksa 3 students. The research sample consisted of 22 students from Mathayomsuksa 3 students during the first academic year 2012, Ban Non School, Maha Sarakham Educational Service Area Office 2. The instruments used were (1) The Heredity lesson plans; (2) The Computer Assisted Learning on Heredity lesson; (3) A learning achievement test on Heredity lesson ; and (4) A questionnaire on student satisfaction towards The Computer Assisted Instruction on Heredity lesson in Science Learning Group for Mathayomsuksa 3. The collected data were analyzed by the statistical methods of mean, percent, standard deviation and t-test (Dependent Sample).

The findings were as follows:

1. The Development of Academic Achievement by using The Computer Assisted Learning on Heredity lesson was found efficient at the level of 88.84/84.55 and higher than the standard criterion of 80/80.

2. The effectiveness index of The Computer Assisted Learning on Heredity lesson was 0.6746 which showed that the student's knowledge gained from The Computer Assisted Instruction on Heredity lesson were increased at 67.46 percent.

3. The students who learned from The Computer Assisted Instruction on Heredity lesson got higher academic achievement after the post-test achievement than the pre-test, statistically significant at level .01.

4. The students were satisfied with learning by using The Computer Assisted Learning on Heredity lesson in Science Learning Group for Mathayomsuksa 3 at the highest level.

KEYWORDS: Achievement, Heredity Lesson, Science learning group
THE DEVELOPMENT OF READING COMPREHENSION SKILLS BY USING READING SUPPLEMENTARY BOOKS IN THAI LANGUAGE LEARNING GROUP FOR PRATHOMSUKSA 1 STUDENTS

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ABSTRACT

The objectives of this study were as follows: 1) to develop reading comprehension skills by using reading supplementary books in Thai Language Learning Group for Prathomsuksa 1 students according to the standard criterion of 80/80; 2) to find effectiveness index of the development of reading comprehension skill by using reading supplementary books in Thai Language Learning Group for Prathomsuksa 1 students; 3) to compare Thai language reading comprehension skills of the students before and after using reading supplementary books in Thai Language Learning Group for Prathomsuksa 1 students; and 4) to find satisfaction of students who learned by using reading supplementary books in Thai Language Learning Group for Prathomsuksa 1 students. The sample used in this research consisted of 24 students from Prathomsuksa 1 students during second semester of Academic year 2012, Khokrai School, WapiPathum District, MahaSarakham Educational Service Area Office 2. The instruments used in this research were reading comprehension skill lesson plans, reading supplementary books for developing reading comprehension skills, reading comprehension skills’ test which provided 20 questions with 3 multiple choices for each question, and the questionnaire of evaluating Prathomsuksa 1 students’ satisfaction. The statistical methods used in this research were mean, standard deviation and t-test.

The results were as followed:
1. The Development of Reading Comprehension Skills by using Reading Supplementary Books in Thai Language Learning Group for Prathomsuksa 1 Students was found efficient at the level of 83.83/84.67 according to the standard criterion of 80/80.
2. The effectiveness index of reading supplementary books for developing reading comprehension skills in Thai Language Learning Group for Prathomsuksa 1 students was 0.7374. This result indicated that students who learned by using reading supplementary books for developing reading comprehension skills in Thai Language Learning Group for Prathomsuksa 1 students made progress on their learning with 73.74 percent.
3. The post-test achievement was higher than the pre-test and, statistically significant at level .01.
4. Students were satisfied with learning by using reading supplementary books for developing reading comprehension skills in Thai Language Learning Group for Prathomsuksa 1 at a very good level.

KEYWORDS: Reading comprehension skills, Reading supplementary books

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DEVELOPMENT OF MATHAYOMSUESA II STUDENTS’ ACHIEVEMENT IN LEARNING SCIENCE ENTITLED “EARTH AND CHANGES” THROUGH THE INQUIRY PROCESS AND MIND MAPPING ACTIVITIES

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ABSTRACT

This research aimed to 1) develop instructional plans for Mathayomsueksa II students learning science entitled "Earth and Changes" through use of the Inquiry Process and Mind Mapping activities that meet the 80/80 criterion, 2) compare the students' achievement in science entitled "Earth and Changes" before and after learning through the Inquiry Process and Mind Mapping activities, and 3) study the students' satisfaction toward learning science through the Inquiry Process and Mind Mapping activities. The sample group for this research consisted of 35 Mathayomsueksa II students of Nong Soong Samakee Witaya School, Mukdahan Province who were obtained by using cluster sampling. The instruments used in this study were 6 instructional plans using the Inquiry Process and Mind Mapping activities, a 40-item achievement test, and a questionnaire for assessing the students' satisfaction. The statistics used in data analysis were percentage, mean, standard deviation and t-test (Dependent Sample).

Findings of the study are as follows:

1. The efficiency index of the instructional plans for developing Mathayomsueksa II students' achievement in science entitled "Earth and Changes" by using the Inquiry Process and Mind Mapping activities was 88.67/89.43, which was higher than the established 80/80 criterion.
2. The post-test achievement of Mathayomsueksa II students learning science entitled "Earth and Changes" through use of the Inquiry Process and Mind Mapping activities was higher than that of the pretest at the .05 level of statistical significance.
3. The students' overall satisfaction with learning through use of the Inquiry Process and Mind Mapping activities was found at the high level.

KEYWORDS: Earth and Changes, Mind mapping activities
THE DEVELOPMENT OF WRITING READINESS OF PRE-SCHOOL STUDENTS
BY USING GROUP ACTIVITY FOR CREATIVE ART

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ABSTRACT

The purposes of this research were 1) to compare the pre-school students’ writing readiness between before and after learning by using group activity for creative art and 2) to compare the pre-school students’ writing readiness between the learning by using group activity for creative art and the learning by using conventional approach. The subjects used in this research were kindergarten 1 students studying in the first semester of academic year 2013 at Srikosumwittayamittapab 209 school under The Office of Maha Sarakham Primary Educational Service Area 3. They were divided into experimental group consisted of 25 kindergarten 1 students taught by using group activity for creative art, and control group consisted of 25 kindergarten 1 students taught by using conventional approach. The research instruments were experiences organization plans, students’ writing readiness test. The data were analyzed by using percentage, mean, standard deviation and t-test (Independent Sample)

The research results were as follows:
1. The pre-school students’ scores of writing readiness after learning by using group activity for creative art was significantly higher than that before learning at the level of .05.
2. The pre-school students taught by using group activity for creative art had scores of writing readiness significantly higher than the kindergarten 1 students taught by using conventional approach at the level of .05.

KEYWORDS: Pre-School Students, Group activity, Creative art
ABSTRACT

The objectives of this research were to: 1) construct and develop learning management plan for Food and Subsistence by using Inquiry Approach with mind mapping to include the efficiency as the specified criterion 80/80, 2) the effectiveness index as the specified criterion, 3) to compare the learning achievement between pretest and posttest and to 4) study the students’ satisfaction on learning management for Food and Subsistence with Inquiry Approach with mind mapping on the Science Learning Substance Group for Pupils in Matthayomsuksa 2. The target groups included 20 Matthayomsuksa 2 pupils of Bandonchang School under the Office of Khonkaen Fundamental School Educational Service Area 1 in the 2 semester of the 2013 academic year. The selected by Purposive Sampling. The instruments using in this research included: Learning management plan for Food and Subsistence 7 plans on the Science Learning Substance Group for Student of Matthayomsuksa 2 are amount 7 plans, achievement test with was multiple-choice with 30 items and students’ satisfaction questionnaire. The statistic for data analyzing included validity value, difficulty value, discrimination value, reliability value, percentage, mean, standard deviation and T test in The Wilcoxon signed ranks test.

The results are as follows:
1. The efficiency of learning management plan on Food and Subsistence by using Inquiry Approach with mind mapping on the Science Learning Cluster for Pupils in Matthayomsuksa 2 was at 86.34/81.50, which was be in line with standard that fix 80/80.
2. The effectiveness index of learning management plan on Food and Subsistence by using Inquiry Approach with mind mapping on the Science Learning Cluster for Pupils in Matthayomsuksa 2 was at 0.. It showed that the students processed their learning at 0.6542.
3. Learning achievement of the pupils on Food and Subsistence by using Inquiry Approach with mind mapping, their averages value of learning achievement from the posttest were at .01 significant level.
4. The pupils’overall satisfaction on learning management for Food and Subsistence by using Inquiry Approach with mind mapping, was in high level.

KEYWORDS: Learning activities, Inquiry approach
THE DEVELOPMENT OF LEARNING ACTIVITIES FOR CREATIVE MATHEMATICAL THINKING IN SECONDARY STUDENTS

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ABSTRACT

The objectives of the research are to develop learning activities with creative mathematical thinking in secondary students and to study the efficiency of creative mathematical thinking in secondary students. The study is a research and development process. Also the questionnaire, studying opinion toward the development of learning activity management, to support creative mathematical thinking in secondary students. The population for this study consists of 3,024 secondary students of the 53 schools under the project of Expanding Opportunities for Education, under Khon Kaen Office of Primary Education Service Area 2, and 64 Mathematics teachers of secondary schools which are under the project of Expanding Opportunities for Education, with the responsibility of Khon Kaen Office of Primary Education Service Area 2. The research location is the Khon Kaen Office of Primary Education Service Area 2. The duration of the research is the academic year 2014. The statistic for data analysis are, frequency, percentage, mean, and standard deviation.

This presentation refers to the first period of the research and found that:

1. The current situation and the need of the learning activity for creative mathematical thinking of the students in the schools under the responsibility of Khon Kaen Office of Primary Education Service Area show that the 6th content of Mathematics learning, no. 6.1 the capability of solving problems 5.98%. The point of no.6.2, giving reasons, is 100%, and the point of no.6.3, communication and mathematical data presentation, is 3.12%. The content no. 6.4, the ability to link mathematical knowledge to other related fields, is 6.56%. And the content no.6.5, creative thinking skill, is 0.57%, which is lower than the national average score. It is urgent this the issue be solved.

2. The need of learning activities with for creative mathematical thinking, in order to improve creative thinking skills among mathematics teachers, is found at highest level (\( \bar{X} = 4.81, \text{S.D.} = 0.67 \))

KEYWORDS: Learning activities, Creative mathematical
SATISFACTION OF GRADUATE STUDENTS TOWARDS EDUCATIONAL SERVICE PROVIDED BY THE DEPARTMENT OF CURRICULUM AND INSTRUCTION, FACULTY OF EDUCATION, RAJABHAT MAHA SARAKHAM UNIVERSITY

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ABSTRACT

The objectives of this study were to: 1) study the satisfaction of graduate students to education service provided by Department of Curriculum and Instruction, Faculty of Education, Rajabhat Mahasarakham University, 2) to study ways to improve and development of educational services provided by Department of Curriculum and Instruction, Faculty of Education, Rajabhat Mahasarakham University. The samples used in this study was 177 graduate students in Department of Curriculum and Instruction, Faculty of Education, Rajabhat Mahasarakham University that registered and attend the classroom in 3rd semester, educational year 2013. The samples were selected by simple random sampling. Tool used in research is the satisfaction questionnaire. Statistics used were percentage, mean, standard deviation, analysis and descriptive statistics.

The results showed as follows:

1. The analysis of the personal information of the respondents from 177 samples group, It was found that most graduate students are female of 77.40 percent. When classified by age, most are between 30 - 39 years with 44.63 percent. When classified by legal status, majority has marital status of 69.50 percent. When classified by occupation, it appears that most graduate students have careers as government officers of 54.80 percent.

2. For data analysis on the level of satisfaction for students, it was found that graduate students are satisfied with the education services a whole at the high level ($X = 4.38$). When consider for individual aspect, it was found that students have maximum satisfaction with educational services on the personal aspect ($X = 4.47$), followed by service quality aspect ($X = 4.34$). While the students have minimum satisfaction of the educational services on the facility aspect ($X = 4.21$).

3. On the results of the analysis regarding the guideline to improve and development of the educational service system in Department of Curriculum and Instruction, Faculty of Education, Rajabhat Mahasarakham University, the results of data analysis revealed the following information:

   3.1 Personnel aspect, most students were agreed with consistent comments. That is the number of staff should be increased sufficiently to the task. Each officer has divided of responsibilities. Staff should receive clear information, improve the system for easy and fast.

   3.2 Media and information aspect, most of the students consistent with comments including that there are less books, documents, textbooks and journals, are out of date and insufficient. Advanced technology should be bought to assist in the service, in order to facilitate quick and
3.3 The facility aspect, most students have a consistent opinion that should include more waiting seats for those who come to obtain services, cramped offices are not convenient for contacting. Property places should be managed proportionally to each task. There should be a clear chart of the agency, which should be made clear for which unit does each task.

3.4 Service quality aspect, most of the students have a consistency opinion that the board should be included, in order to provide news of instruction and academic information clearly. The steps of the service request should be presented. There should have modern tools for educational services, more coordination with the office of graduate student, for convenience of students and reduces the steps of many contacting to be centered on the same place.

**KEYWORDS:** Satisfaction, Educational service
THE HANDOUT DEVELOPMENT ON KUNMING OF LOEI, OCCUPATION AND TECHNOLOGY DEPARTMENT, MATTHAYOMSUUKSA 3

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ABSTRACT

This study is to 1) develop and find the efficiency of the handout on Kunming of Loei, Occupation and Technology Department, for the Matthayomsuksa 3 students to have the standard efficiency at 80/80 2) Compare the learning achievement on Kunming of Loei during the pre and post instruction 3) study the satisfaction of the Matthayomsuksa 3 students toward the learning by using the handout on Kunming of Loei. The population studied was 22 students of Ban PuanPhu School, in the second semester of the academic year 2013. The instrument used in this research was the 6 handouts on Kunming of Loei, Occupation and Technology Department, for the Matthayomsuksa 3 students, as well as 12 learning plans, 30 items of 4-choice learning achievement test, and the satisfaction questionnaire of the Matthayomsuksa 3 students toward the handout on Kunming of Loei, Occupation and Technology Department. The statistics used in data analysis was percentage, mean, standard deviation, and hypothesis test by t-test (Dependent Sample).

The research result was found that

1. The efficiency of the handout on Kunming of Loei, Occupation and Technology Department, for the Matthayomsuksa 3 students was 87.00/84.69, higher than the standard.
2. The students instructed with the handout on Kunming of Loei, Occupation and Technology Department, for the Matthayomsuksa 3 students had the increased learning achievement after the instruction and had the average progressive score at 42.11%.
3. The satisfaction of the students instructed with the handout on Kunming of Loei, Occupation and Technology Department, for the Matthayomsuksa 3 students, was at the good level, with 4.55% of mean.

KEYWORDS: Handout development, Kunming of Loei
The purposes of this research were to 1) develop a cooperative learning activities with a skill practice on spelling Thai subject for Prathom Suksa 2 to reach the standard efficiency criteria of 80/80 2) evaluate the effectiveness index of cooperative learning activities with a skill practice on spelling, Thai Language Department 3) compare learning achievement of the students before and after learning of cooperative learning activities with a skill practice on spelling, Thai Language Department and 4) survey students’ satisfaction on the cooperative learning activities with a skill practice on spelling, Thai Language Department. The research target group was 31 Prathom Suksa 2 students at Koodjikwittayakan School, Thakunto District, Karasin Province, in the second semester of 2012 academic year, use purposive sampling. The research tools included lesson plans based on a cooperative learning activities with a skill practice on spelling totally 9 copies, skill practice on spelling totally 9 copies, A learning achievement test including 30 item on Multiple Choice question was 3 choice and a questionnaire on students’ satisfaction totally 15 items. The statistic used for data analysis of the research study percentage, mean, standard deviation and used t-test (Dependent Sample) for different verification.

The research results were:

1. The Cooperative learning activities with a skill practice on spelling, Thai Language Department for Prathom Suksa 2 had the efficiency of 88.05/86.12 which high than the standard criteria 80/80
2. The Effectiveness Index of Cooperative Learning Activities with a skill practice on spelling Thai Language Department for Prathom Suksa 2 was 0.7658.
3. The learning achievement mean score of the students after learning the Cooperative learning activities with a skill practice on spelling, Thai Language Department was higher than before learning at .01 significant level.
4. Students satisfied with the learning based on the Cooperative learning activities with a skill practice on spelling, Thai Language Department at very high level as a whole

KEYWORDS: Cooperative learning, Skill Practice
THE DEVELOPMENT OF LEARNING ACHIEVEMENT FOR PRATOMSUKSA 6 STUDENTS ENTITLE “EQUATION AND SOLVING THE EQUATION” THROUGH TEAM GAME TOURNAMENTS (TGT) TECHNIQUE

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ABSTRACT

The objectives of this study were to: 1) develop learning activities through Team Game Tournaments (TGT) technique entitle “Equation and Solving the Equation” for PratomSuksa 6 students to attain the required efficiency of E1/E2 (75/75), 2) study the effectiveness index of learning of students who learned with TGT technique, 3) compare the learning achievement between posttest and pretest score, and 4) identify students’ satisfaction on the developed learning activities through TGT technique entitle “Equation and Solving the Equation”. 21 Pratomsuksa 6/1 students of Wat Nue Municipal School, Muang Roi-Et municipal, Roi-Et in 2nd semester of academic year 2013 were selected as target group. Research instruments were; 1) 10 TGT technique lesson plans, 2) 30 items of learning achievement test; difficulty (p) was 0.20-0.80, discriminating (B) was 0.20-1.00, reliability was 0.89, and 3) 20 items of students’ satisfaction questionnaire. The statistics used to analyze the collected data were means, percentage, standard deviation, and t-test (Dependent Sample)

The results of the study were as follows:

1. The efficiency of learning activities through TGT technique entitle “Equation and Solving the Equation” was 82.24/80.95 which was higher than the setting criteria (E1/E2), 75/75.
2. The effectiveness index of learning activities through TGT technique entitle “Equation and Solving the Equation” was 0.7163 or at the percentage of 71.63
3. Post test achievement score of students who learned with learning activities through TGT technique entitle “Equation and Solving the Equation” were higher than the pretest achievement score at the.05 level of significance.
4. Having learned with learning activities through TGT technique entitle “Equation and Solving the Equation”, students’ overall satisfaction was at “highest” level (x = 4.69, S.D.= 0.44)

KEYWORDS: Cooperative learning, Team Game Tournament (TGT)
THE DEVELOPMENT OF READING AND CRITICAL THINKING USING MIND MAPPING IN THAI LEARNING SUBSTANCE GROUP FOR MATTHAYOMSUUKSA 6 STUDENTS

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ABSTRACT

The study aimed to 1) develop lesson plans on reading and critical thinking using Mind Mapping with a set criteria of efficiency at 80/80, 2) determine learning effectiveness index of lesson plans using Mind Mapping, 3) compare pre and post reading and critical thinking performance of students learning through Mind Mapping, and 4) determine students’ satisfaction toward the learning of reading and critical thinking using Mind Mapping. Samples were 37 Matthayomsuksa 6/1 students in the second semester of the academic year 2013 of Nong Hin Wittayakhom School, under the supervision of the Office of Secondary Education Area 19. They were selected by Cluster Random Sampling. Research instruments included 1) 6 lesson plans on the topic reading and critical thinking using Mind Mapping for Matthayomsuksa 6 students, 2) 30-item reading and critical thinking achievement test with 4 choices, having discrimination value of each item ranging between 0.32 to 0.81 and reliability equaling 0.80, and 3) 10 items of five-scale satisfaction questionnaire, having discrimination value of each item ranging between 0.43 to 0.89 and reliability equaling 0.92. Statistics used in the study were percentage, mean, standard deviation, and t-test Dependent Samples.

The results show that
1. The efficiency ($E_1/E_2$) of lesson plans on reading and critical thinking using Mind Mapping for Matthayomsuksa 6 students was 86.48/84.05 higher than the specified criteria 80/80.
2. The effectiveness index of lesson plans using Mind Mapping for Matthayomsuksa 6 students was 0.7386 or 73.86%.
3. After learning, the reading and critical thinking performance of Matthayomsuksa 6 students who learned through Mind Mapping was higher at the .01 level of significance.
4. Matthayomsuksa 6 students, who learned reading and critical thinking using Mind Mapping, had satisfaction on learning as a whole at the high level ($\bar{X} = 4.45$, S.D. =0.21).

KEYWORDS: Reading, Critical thinking, Mind mapping
THE DEVELOPMENT OF LEARNING ACTIVITY WITH THE OBJECTIVE OF DEVELOPING THINKING SKILLS TO SOLVE MATHEMATICAL PROBLEMS AMONG PRATHOMSU KSA 6 STUDENTS

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ABSTRACT

The objectives of the research are to study the basic information and the need of the development of the learning activity with the objective of enhancing thinking skills to solve mathematical problems among Prathomsuksa 6 students and to build up the learning activity with the objective of enhancing thinking skills to solve mathematical problems among Prathomsuksa 6 students. Also the expectation is to be able to apply the research with the learning activity with the objective of enhancing thinking skills to solve mathematical problems among Prathomsuksa 6 students by using the method of research and development. Instruments of the research include the survey of the current situation and the need of the learning activity with the objective of enhancing thinking skills to solve mathematical problems. The population are 795 students and teachers of Prathomsuksa 6, the group of Phu Krajarn School, under the responsibility of Educational Service Area 4, Sri Saket. The sample group consists of 370 students and teachers, which are selected by cluster sampling, from the group of Phu Krajarn School, under the responsibility of Educational Service Area 4, Sisaket. The research locations are the Educational Service Area 2 and 3 of primary education, Khon Kaen. The research duration is during the academic year 2014. The instrumentations utilized for the research are statistic for data assessment, frequency value, percentage average, and standard deviation.

This presentation refers to the first phase of the research and found that:

1. The current situation and the need of conducting learning activity with the objective of enhancing thinking skills to solve mathematical problems among Prathomsuksa 6 students, Baan Ta Loy Nongkhan School, show that the result of the mathematics skills test, under the objective of capability of solving mathematical problems is still in a low level. And the scores are still lower than other capacities, which is the scores do not reach the average of 50\% since the academic year 2008 to 2011. The scores are at the average of 35.20\%, 43.16\%, 39.54\%, 42.93\%, accordingly.

2. The current situation and the need of conducting learning activity with the objective of enhancing thinking skills to solve mathematical problems is at the highest level of necessity which is ($\bar{X} = 4.57$, S.D. = 0.32.)

KEYWORDS: Learning activity, Thinking skills, Mathematical problem
THE DEVELOPMENT OF THAI LANGUAGE LEARNING ACHIEVEMENT TOWARDS DIPHTHONGS AND SELF-EFFICACY THROUGH BBL LEARNING ACTIVITY PACKAGE FOR GRADE-3 STUDENTS

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ABSTRACT

The present research aimed to: 1) examine the efficiency of Thai language learning instructional plan towards Diphthongs and Self-efficacy through BBL Learning Activity Package following the determined standard (80/80), 2) to compare grade-3 students’ learning achievement between before and after learning, and 3) to explore self-efficacy of grade-3 students. The samples of this study were 10 grade-3 students from Ban Bungmennongduu School under the office of Khon Khan Primary Educational Service area 5 studying in the second semester of academic year 2013 and were chosen by cluster sampling. The research tools employed in this study included: 1) 8 instructional plans of diphthongs and self-efficacy through BBL Learning Activity Package, 2) 3 multiple choices of learning achievement test including 30 items, and 3) 10 items of self-efficacy test using the 3-point Likert scale. The statistics used to analyze data consisted of percentage, mean, standard deviation, and dependent t-test.

The results showed that

1. The efficiency of Thai language learning instructional plan of Diphthongs and Self-efficacy through BBL Learning Activity Packages was 85.58/84.33 which was higher that the determined standard (80/80).

2. Grade-3 students had learning achievement after studying higher than before studying with statistical significance (p< .01).

3. The students had overall self-efficacy in a very high level (X = 2.47).

KEYWORDS : Self-efficacy, BBL
CRITICAL READING ACHIEVEMENT DEVELOPMENT, SELF-CONFIDENCE AND ABILITY ON SOLVING THINKING OF PRATHOM 6 STUDENTS USING 4 MAT MODEL ACTIVITY PRACTICING PACKAGE

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ABSTRACT

The purposes of this study are: 1. To compare the critical reading achievement in reading of Prathom 6 students using 4 MAT Model Activity Practicing Package between, pre and post learning. 2. To compare the self-confidence of Prathom 6 students using 4 MAT Model Practicing Package between, pre and post learning. 3. To compare Prathom 6 students’ ability of problem solving, learning through 4 MAT Model Activity Practicing Package, between, pre and post learning. The sampling group consists of 19 students including Prathom 6 students of the second semester, academic year 2013, Network Center students of Semasicomphu School, the Office of Primary Education Service Area Region 5. Gain by group sampling. Instruments used for collecting data are: 12, 4MAT-Thai Lesson Plans, 4 choice critical reading achievement test, 30 items, 4 leveled rating scale self-confident test, 25 items and 4 choice critical thinking achievement test, 40 items.

The research outcomes were found that:
1. Prathom 6 students post learning achievement is higher than the pre one with statistical significance at the level of .05
2. Prathom 6 students gain self-confident in post learning higher than the pre one with statistical significance at the level of .05
3. Prathom 6 students gain the ability of critical thinking in post learning higher than the pre one with statistical significance at the level of .05

KEYWORDS: Critical reading, Self-Confidence, Solving thinking, 4 MAT
THE DEVELOPMENT OF LESSON PLANS ON READING DIFFICULT WORDS IN THAI LANGUAGE SUBJECT USING TGT TECHNIQUE FOR PRATHOMSUUKSA 4 STUDENTS

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ABSTRACT

This study aimed to 1) develop lesson plans on the topic of reading difficult words in Thai subject using TGT technique for Prathomsuksa 4 student to be effective as the 80/80 standard, 2) determine learning effectiveness index, 3) compare pretest and posttest achievement scores, and 4) determine students’ learning satisfaction. Samples were 30 students in Prathomsuksa 4 of Ban Kok Kho Kok Pho school, under the supervision of Nong Bua Lamphu primary educational office area 2, in the academic year 2013, and the populations in this study were randomly selected from 4 classes by using Cluster Random Sampling, instruments used in the study were divided into 2 types: 1) experimental instruments include six lesson plans instruments include 30-item achievement test on reading difficult words and 15-item students’ satisfaction questionnaire. Analyzed by percentage, mean, and standard deviation, and t-test Dependent samples for hypothesis testing.

The research results show as follows.
1) The efficiency of Thai lesson plans on reading difficult words for Prathomsuksa 4 students using TGT technique was 82.03/81.89 and met the setting criteria 80/80. 2) The effectiveness index of lesson plans on reading difficult words using TGT technique was 0.70. 3) The posttest achievement scores were higher than pretest achievement average scores at the .01 level of significance, and 4) Prathomsuksa 4 students had satisfaction on learning as a whole at the highest level.

KEYWORDS: Lesson Plans, Reading difficult words, TGT technique
THE DEVELOPMENT OF LEARNING ACHIEVEMENT ENTITLED “READING AND WRITING WORDS IN MAE KO KA SPELLING GROUP” FOR PRATHOMSUUKSA 1 STUDENTS THROUGH COOPERATIVE LEARNING WITH EXERCISES

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ABSTRACT

This study aimed 1. (to develop lesson plans, entitled learning to read and write words in “Mae Ko Ka spelling group” through cooperative learning with exercises for Prathomsuksa 1 students based on the 80/80 standard; 2) to determine learning effectiveness index; 3) to compare pretest and posttest achievement scores, and 4) to determine students’ satisfaction toward the developed learning activities. Thirty Prathomsuksa 1 students studying in the second semester of the academic year 2014 were selected as sample groups. The research instruments were lesson plans, exercises, achievement tests, and students’ satisfaction questionnaire. Statistics employed in the study were percentage, means, standard deviation, and Dependent Samples t-test.

The findings were as follows:

1. The efficiency of learning activities, entitled learning to read and write words in “Mae Ko Ka spelling group” through cooperative learning with exercises for Prathomsuksa 1 students was 82.79/83.78 which met the specified criteria 80/80. 2. The effectiveness index of lesson plan was 0.5994 or was the percentage of 59.94. 3. The posttest achievement scores of the students learned to read and write words in “Mae Ko Ka spelling group” through cooperative learning with exercises were higher than pretest achievement average scores at the .01 level of significance. 4. The students who learned to read and write words in “Mae Ko Ka spelling group” through cooperative learning with exercises had satisfaction on learning as a whole at the high level.

KEYWORDS: Learning activities, Cooperative learning write exercises, Reading and Writing skill
THE DEVELOPMENT OF LEARNING ACHIEVEMENT IN MATHEMATICS ENTITLED “ADDITION, SUBTRACTION, MULTIPLICATION, AND DIVISION OF FRACTIONS” FOR PRATHOMSUKS 5 STUDENTS USING THE TGT TECHNIQUE

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ABSTRACT

This study aimed to 1) develop lesson plans entitled “Addition, Subtraction, Multiplication, and Division of Fractions” for Prathomsuksa 5 students using the TGT technique to be effective as the 75/75 standard, 2) determine learning effectiveness index, 3) compare pretest and posttest achievement scores, 4) determine Prathomsuksa 5 students’ satisfaction toward learning, and 5) study Prathomsuksa 5 students’ persistence in learning. Samples were 30 students in Prathomsuksa 5 of Ban Kudinchi School, under the supervision of Nong Bua Lamphu primary educational office area 2, in the second semester of the academic year 2013. Research instruments were lesson plans using the TGT technique which had high quality level, 30-item multiple-choice Mathematic achievement test, and 15 items of rating scale satisfaction questionnaire. Statistics used in this research were percentage, mean, standard deviation, and t-test Dependent Samples for hypothesis testing.

The findings show that 1) The efficiency of lesson plans entitled “Addition, Subtraction, Multiplication, and Division of Fractions” for Prathomsuksa 5 students using the TGT technique was 78.83/75.11 and met the set up criteria 75/75. 2) The effectiveness index of lesson plans entitled “Addition, Subtraction, Multiplication, and Division of Fractions” for Prathomsuksa 5 students using the TGT technique was 0.6197 or 61.97%. 3) The posttest achievement scores of the Prathomsuksa 5 students were higher than pretest achievement scores at the .01 level of significance. 4) Prathomsuksa 5 students were satisfied with the learning on addition, subtraction, multiplication, and division of fractions using the TGT technique which had satisfaction as a whole at the high level (X = 4.47, S.D. = 0.58). and 5) Prathomsuksa 5 students who learned addition, subtraction, multiplication, and division of fractions using the TGT technique were persistent in learning.

KEYWORDS: Cooperative learning technique TGT, Mathematics
THE DEVELOPMENT OF LEARNING INSTRUCTIONS OF CREATIVE VISUAL ARTS FOR MATTAYOMSUKS 2 STUDENTS USING LEARNING PACKAGE

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ABSTRACT

The objectives of this study were to 1) develop the learning package of creative visual arts for Mattayomsuksa 2 students to have the effectiveness established criterion 80/80 2) investigate the effectiveness index of the learning instruction using learning package of creative visual arts for Mattayomsuksa 2 students 3) compare the students’ pre and post learning achievements using learning package of creative visual arts for Mattayomsuksa 2 students and 4) investigate the students’ satisfaction on learning instruction using learning package of creative visual arts. The samples were 30 students of Mattayomsuksa 2 at Khon Kaen Pattanasuksa School, the Office of Secondary Education Zone 25. They were obtained from cluster random sampling in the second semester of academic year 2013. The instruments used in this study comprised 1) 6 learning packages of Creative Visual Arts, the subject area of Arts, the level of appropriateness is 3.51-5.00. 2) learning achievement test which the level of appropriateness is at “very much” level, and 3) the questionnaire to investigate the students’ satisfaction which the discrimination is between 0.55-0.76 and the reliability is 0.82. The data were analyzed with the use of basic statistical methods, namely, the level of difficulty, discrimination, reliability, percentage, means (X), standard deviation (S.D.) and the t-test (dependent samples).

Findings of this study reveal that;
1. The effectiveness power of the learning package of creative visual arts for Mattayomsuksa 2 students, the subject area of arts is 83.93/88.22 which is higher than the effectiveness established criterion 80/80.
2. The effectiveness index of learning using learning package of creative visual arts for Mattayomsuksa 2 students, the subject area of arts is 0.7756 or 77.56 of percentage.
3. The students’ learning achievement after using the learning package of creative visual arts, the subject area of arts is higher than before that shows the difference of significant .05 level.
4. The level of students’ satisfaction on learning using learning package of creative visual arts, the subject area of arts is wholly at the high level (X = 4.42).

KEYWORDS: Learning instructions, Creative visual arts and Learning package
THE DEVELOPMENT OF LEARNING ACHIEVEMENT IN BUILDING THAI WORDS THROUGH COMPUTER ASSISTED INSTRUCTION FOR GRADE 7

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ABSTRACT

The main objectives of this present study were: 1) to develop activities for learning “building Thai words” for Grade 7 in order to meet the specified criterion of effectiveness of 80/80. 2) to examine the effective index of learning through Computer Assisted Instruction concerning “building Thai words” for Grade 7 following the specified criterion. 3) to compare learning achievement before and after learning “building Thai words” through Computer Assisted Instruction for Grade 7, and 4) to examine students’ satisfaction towards the instruction of “building Thai words” through Computer Assisted Instruction for Grade 7.

The samples of this study were 26 Grade 7/2 students from Chumchonnonghin School under the office of Loei Primary Education Service Area 2 in the second semester of academic year 2012. They were chosen by using Cluster Random Sampling. The research instruments employed in this study included Computer Assisted Instruction which had the validity value between 0.60–1.00 while the validity value of “building Thai words” instructional plan was between 0.60–1.00. Moreover, the difficulty index of this achievement test was between 0.42–0.77 and its discrimination was between 0.25–0.75. Moreover, while the test’ reliability was 0.894, the discrimination of preference questionnaire was between 0.43–0.76 and its reliability was 0.89. The statistics employed in this study were the difficulty index, the discrimination, reliability, percentage, mean, standard deviation and t-test (independent).

Results of the study indicated the following:

1. The efficiency of Computer Assisted Instruction concerning “building Thai words” for Grade 7 was at 84.42 / 84.23 which was higher than the specified criteria.
2. The effectiveness index of Computer Assisted Instruction concerning “building Thai words” for Grade 7 was 0.6955 or 69.55 percent.
3. Concerning learning achievement before and after learning “building Thai words” through Computer Assisted Instruction for Grade 7, it was found that the post-test score was higher than the pre-test with statistical significance (p<.01).
4. With reference to students’ satisfaction towards the instruction of building Thai words through Computer Assisted Instruction for Grade 7, the results showed that students satisfaction toward learning this in every aspect was found at very high level.

KEYWORDS: Learning achievement, Computer assisted instruction

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THE DEVELOPMENT OF LEARNING ACHIEVEMENT AND SCIENCE PROCESS SKILLS ON THE TOPIC OF “LIFE AND ENVIRONMENT” OF PRATHOMSUKSA 6 STUDENTS BY USING THE 7Es-LEARNING CYCLE

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ABSTRACT

The purposes of this research were 1) to develop lesson plan for learning activity by using the 7Es - learning cycle on the topic of “Life and Environment” for Prathomsuksa 6 students based on the 80/80 standardized criteria, 2) to compare the students’ achievement on the topic of “Life and Environment” after learning activity by using the 7Es - learning cycle with the 80% criteria established, 3) to compare the students’ achievement on the topic of “Life and Environment” between before and after learning activity by using the 7Es - learning cycle, and 4) to investigate the students’ satisfaction toward learning activity by using the 7Es - learning cycle. The subjects used in this research consisted of 25 Prathomsuksa 6 students, who were studying in the first semester of academic year 2013 at Rajabhat Maha Sarakham University Demonstration school. They were selected by cluster sampling technique. The research instruments were lesson plans, the achievement test, the basic science process skills test and the students’ satisfaction questionnaire. The data was analyzed by using percentage, mean, standard deviation, t-test (One sample group) and t-test (Dependent samples).

The research results were as follows:

1. The lesson plan for learning activity by using the 7Es - learning cycle on the topic of “Life and Environment” for Prathomsuksa 6 students yielded 88.77/91.73 efficient met the 80/80 criteria established.

2. The students’ achievement on the topic of “Life and Environment” after learning activity by using the 7Es - learning cycle was significantly higher than the 80% criteria established at the level of .05.

3. The students’ basic science process skills on the topic of “Life and Environment” after learning activity by using the 7Es - learning cycle was significantly higher than that before at the level of .05.

4. The students’ level of satisfaction toward the learning activity by using the 7Es learning cycle was at a high level.

KEYWORDS: Learning achievement, Science process skills, 7Es - Learning cycle
THAI INTEGRATION LEARNING ACTIVITY DEVELOPMENT WITH THE THEME OF WRITING OF IRRELEVANT TO SPELLING SCALE USING SKILL PRACTICE MATERIALS FOR PRATHOMSUEKSA 3 STUDENTS

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ABSTRACT

This research aimed to 1) Develop writing integration learning activity irrelevant to spelling scale using skill practice materials for Prathomsueksa 3 students to gain efficiency abide by the criterion 80/80, 2) To study efficiency index of students using integration learning activity and skill practice materials for Prathomsueksa 3 students (E.I.), 3) To compare students’ pre learning achievement with the post one using in integration learning activity and skill practice materials for Prathomsueksa 3 students, 4) To study students' satisfaction towards learning through integration learning activity and skill practice materials for Prathomsueksa 3 students, gained by purposive sampling, 8 lesson plans consuming 16 totally 80 items, learning achievement test with 40 items and percentage, mean and standard deviation.

The findings were found that:

1. Thai skill practice materials with the theme of writing irrelevant to spelling scale using integration learning activity, for Prathomsueksa 3 students, gained efficiency 87.03/83.75, which was consistent to the criterion set 80/80.

2. The students learning through Thai skill practice materials with the theme of writing irrelevant to spelling scale using integration learning activity, Prathomsueksa 3, gained higher post learning achievement than the pre one with statistical significance at the level of 0.01.

3. Efficiency index f Thai skill practice materials with the theme of writing irrelevant to spelling scale using integration learning activity Prathomsueksa 3 was 0.6258, meaning the students advanced in learning after learning through skill practice materials increasing 62%.

4. Prathomsueksa 3 students satisfied with learning by Thai skill practice materials with the theme of writing irrelevant to writing irrelevant to spelling scale using integration learning activity Prathomsueksa 3 with the highest level.

KEY WORDS: Development activity skill, Integration activity, The criterion 80/80
A NEEDS ASSESSMENT OF RESEARCH-BASED LEARNING TO TEACHING COMPETENCIES OF CHILD – CENTERED INSTRUCTION FOR TEACHER WITHOUT TEACHING QUALIFICATION IN SCHOOLS UNDER THE MAHA SARAKHAM ADMINISTRATIVE ORGANIZATION.

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ABSTRACT

The purposes of this research was to assess the needs of research – based learning to teaching competencies of child-centered instruction for teacher without teaching qualification in schools under the Maha Sarakham Administrative Organization. The sample of the study consisted of 240 teacher in schools under the Maha Sarakham Administrative with 49 items regarding teacher’ opinion toward the teaching competencies with the reliability of 0.98. Arithmetic mean, standard deviation, t-test, one-way analysis of variance, and LSD method were utilized for data analysis. Finally, the PN1 modified- was used to prioritize the needs of the subjects in different aspects. The findings can be summarized as follows:

1. The teaching behaviors of teachers under the Maha Sarakham Administrative Organization focusing on child – centers were at the moderate level in both overall individual.

2. There was a statistically significant difference between schools accredited and Unaccredited with the educational quality standards schools regarding the Teaching Competencies of child-centered instruction in overall aspect at .05 level, teacher with and without Teaching Qualification regarding the teaching competencies of child-centered instruction in overall aspect at .05 level and there was significant difference in the opinion toward the teaching competencies of child-centered instruction in overall aspect among teachers in different training program in teaching competencies of child-centered instruction.

3. There are 9 main significant factors for teaching competencies of child-centered instruction as showed by N1 modified- indexes in order of importance, 1) studying and research 2) evaluations 3) moral promotion 4) learning climate and environment 5) caring individual student 6) learning from group 7) teaching materials 8) promoting students’thinking and 9) preparation of class instruction.

KEY WORDS: Assessment, Teaching competencies of child- centered instruction, Research- Based learning
DEVELOPMENT LEARNING ACHIEVEMENT ON THE TOPIC “HEALTH PROMOTION AND DISEASE PREVENTION” IN LEARNING AREA OF HEALTH AND PHYSICAL EDUCATION FOR PRATHOMSUKSA 5 STUDENTS THROUGH STAD TECHNIQUE WITH SUPPLEMENTARY TEXTS

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ABSTRACT

The purposes of this research were 1) to develop the learning management through cooperative learning : STAD (Student Teams Achievement Divisions) with supplementary texts on the topic “Health Promotion and Disease Prevention” in learning area of health and physical education for Prathom Sueksa 5 students based on the 80/80 standardized criteria, 2) to determine the effectiveness index of the learning management through cooperative learning : STAD technique with supplementary texts in learning area of health and physical education, 3) to compare the students’ achievement between before and after learning through cooperative learning, STAD technique with supplementary texts, and 4) to investigate the students’ satisfaction toward learning through cooperative learning, STAD technique with supplementary texts. The subjects used in this research consisted of 12 Prathom Sueksa 5 students studying in the second semester of 2013 academic year at Dongluang school under the Office of Mukdahan Elementary Educational Service Area 1. The research instruments were: supplementary texts, lesson plans for learning management, students’ achievement test, and students’ satisfaction questionnaire. The data were analyzed by using percentage, mean, standard deviation, and Wilcoxon Matched Pairs Signed – Ranks Test.

The research results were as follows:

1. The learning management through cooperative learning STAD technique with supplementary texts on the topic “Health Promotion and Disease Prevention” in learning area of health and physical education for Prathom Sueksa 5 students yielded 90.67/87.50 efficient which was higher than the 80/80 criteria established.

2. The effectiveness index of the learning management through cooperative learning, STAD technique with supplementary texts in learning area of health and physical education was 0.7662.

3. The students’ achievement on the topic “Health Promotion and Disease Prevention” after learning through cooperative learning: STAD technique with supplementary texts was significantly higher than that before at the level of .05.

4. The students’ satisfaction toward learning through cooperative learning, STAD technique with supplementary texts was at the highest level (X̄ = 4.55, S.D. = 0.49).

KEYWORDS: Health promotion, Disease prevention, STAD technique, Supplementary texts
THE DEVELOPMENT OF STUDYING ENGLISH BASIC PATTERN SENTENCES BY STUDENTS TEAM ACHIVEMENT DIVISIONS (STAD) TECHNIQUES OF THE FOURTH GRADE

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ABSTRACT

This research is to compare the achievement before and after using Student Team Achievement Division (STAD) technique. The samples used this of studying basic sentences study consisted of 32 students who studied in grade 4th during semester 2 of academic year 2013 at Thamadua School. They were selected through purposing sampling and stratified random sampling for high, medium and low English learning ability. The research instruments were: 1) 14 lesson plans for English basic pattern sentences implementing STAD technique, 2) 30 items of pretest and posttest paper, 3) behavior observation form 4) students’ satisfaction questionnaire. The statistics employed for analysis were means, percentage, standard diviation and t-test.

Four main results were revealed.

1. The efficiency of the developed activities of English basic pattern sentences using Student Team Achievement Division (STAD) technique of the fourth grade accorded with the criteria set 82.98/75.83.
2. The posttest of the learning English basic pattern sentences by using Student Team Achievement Division (STAD) technique was higher than the pretest at the level 0.05 of statistic significance.
3. The participatory behaviors of the fourth grade students who studied English basic pattern sentences though their cooperative learning were at the high level (X =3.51).
4. The students’ satisfaction after learning English basic pattern sentences was at the highest level (X=4.91).

KEYWORDS: Students team achievement divisions
THE TRAINING CURRICULUM DEVELOPMENT OF CONSTRUCTING DIAGNOSTIC TEST FOR UPPER PRIMARY SCHOOL MATHEMATIC TEACHERS

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ABSTRACT

The objectives of this study were: 1) to develop effective training curriculum of constructing diagnostic test for upper primary school mathematic teachers and 2) to study the use and outcome of constructing diagnostic test’s training curriculum for upper primary school mathematic teachers employing “research and development” research design. The research tool employed in this study was attitude questionnaire concerning current conditions and learning needs with the aims of enhancing the capacity to solving mathematic problems. Scope of the study would be mentioned as follows. 1) The population of the study was the teachers working under the Office of Karasin Primary Educational Service Area 3. 2) The samples were 30 teachers working under the Office of Karasin Primary Educational Service Area 3 and had ever used this curriculum. They were teaching in the academic year 2014 chosen by purposive sampling. The statistical analysis tools employed in this study included average, percentage, and standard deviation.

The results indicated that:

1. It was found the problems in developing training curriculum of constructing diagnostic test for upper primary school mathematic teachers. They were: 1) 65 percent of teachers’ assessment was not corresponded to the management of learning activities, 2) 60 percent of teachers had problems when adopting the curriculum in the school, 3) 85 percent of teachers had problems in assessment and evaluation. That is to say, the teachers were lack of understanding and skills to do assessment and evaluation, for example, 1) understanding unclearly about the forms and the principles of assessment and evaluation, 2) lack of various approaches to evaluate learning outcome, 3) having no standard devices and no significant content in the evaluation form with spending much time to evaluate, 5) having difficulties when doing the assessment and evaluation test (not suiting to a number of students, being hard to do, and having no sufficient time of learning for students).

2. There had been needs or necessities in developing training curriculum of constructing Diagnostic test for upper primary school mathematic teachers in the highest level ($\bar{X} = 4.73$, S.D. = 0.48).

KEYWORDS: The Training curriculum development, Constructing diagnostic test
THE DEVELOPMENT OF METHOD FOR TEACHING THAI READING AND WRITING FOR MEANING IN SMALL PRIMARY SCHOOLS.

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Abstract

The purpose of this research study was to develop the method of teaching reading and writing for meaning in small primary schools. The sample of this study comprised of 2 groups. The first group of samples obtained from purposive sampling from 32 small schools in the Office of Mahasarakham Primary Education Service Area 3. 419 students, 32 teachers, 32 directors, and 3 educational supervisors were assigned to do the questionnaire. While the second group of samples comprised of 32 teachers, 32 directors, and 3 educational supervisors. They were assigned to participate small group meeting from small schools in Office of Mahasarakham Primary Education Service Area 3. The Mixed Method Research was used in this research study. The questionnaire was used to collect the data concerning the general information and the need for teaching method development. The structured and unstructured interviews were used to collect the data from small group meeting. The statistics used in this study were mean average, percentage, and standard deviation and the results presented in tabular and descriptive analysis.

The findings of the phase 1; the teaching method development, were divided into 2 following processes

1. The study of general information. The results from the questionnaire showed that the problem in teaching of reading and writing for meaning for primary students in small schools were at a high level ($\mu = 3.85$, S.D. = 0.48). Follow by the results of the need to develop method of teaching Thai reading and writing for primary students in small schools which showed the highest level of the need ($\mu = 4.51$, S.D. = 0.58). According to the results of small group meeting, the common current problems of small schools were the structural aspect, teacher aspect, student or family aspect, and educational administration aspect.

2. Guidelines to develop teaching method for reading and writing for meaning in small primary schools. The study found that the components of the teaching method should include the following instructional activities 1) Curiosity 2) Investigation 3) Synthesis 4) Creation 5) Probe 6) Conclusion of reading and writing for meaning.

KEYWORDS: Teaching method, Reading and writing, Small primary Schools
TEACHER TRAINING COURSE DEVELOPMENT WITH AN INTEGRATED FORM ON CONDUCTING A CLASSROOM RESEARCH

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ABSTRACT

This research aims to 1) develop a teacher training course with an integrated form on conducting a classroom research and 2) to study an outcome of using a teacher training course with an integrated form on conducting a classroom research by using Research and Development methodology. Research tools (1) a survey of situation problem from and (2) a survey of training need. Scope of research (1) A target group : 5 experts, 3 teachers enrolled in the program, total 8 people who were selected by purposive sampling. (2) research area : Khonkaen Primary Educational Service Area Office 2 and (3) Period : academic year 2014. Statistics used for the data analysis are mean, percentage, standard deviation. Presentation of the research results are in a descriptive analysis.

This presentation is the first stage of the study results found:

1. Teacher training situation problems, 80% of teacher training methods or workshops in classroom action research did not correspond to the real situation of teachers. 75% of research courses for teachers emphasizing on educating in the academic research caused teachers having a problem in conducting a research and conducting a classroom research was not successful, teachers were discouraged by conducting a research. 75% of teachers had negative attitudes toward to a research and 75% of teachers could not take the results of teacher training to improve the quality of teaching.

2. The training necessity:
   1) Blended training had the highest demand level
   2) Face-to-face training had a high demand level
   3) Self-learning had a high demand level
   4) Practicing at a workplace had a high demand level and
   5) Using training packages on Internet network had a high demand

KEYWORDS: Training course, Integrated, Classroom research
THE DEVELOPMENT OF THAI-SPELLING WRITING IN PRATHOMSUUKSA 3 STUDENTS THROUGH GAME ACTIVITY

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ABSTRACT

The aims of this current research were: 1) to establish learning management plan by using game activity to improve Prathomsuksa 3 students’ Thai-spelling writing and to reach the expected standard 80/80; 2) to find out the efficient index of learning management through game activity in Prathomsuksa 3 students; 3) to compare pre-test and post-test of Prathomsuksa 3 students’ achievement of Thai-spelling writing; and 4) to explore Prathomsuksa 3 students’ satisfaction of improving Thai-spelling writing through game activity. Participants of the study are 25 Prathomsuksa 3 students studying in the second semester in 2013, Baanthachangklongnongiplear School, Loei Primary Educational Service Area Office 2. The research instruments include learning management plan, the achievement test, and the satisfactory questionnaire. The study analyzes data by using statistical analysis which consists of percentage, average, standard deviation and t-test.

The study found the following results:
1. The effectiveness of Prathomsuksa 3 students’ learning management of Thai-spelling writing was 85.46/83.47 which showed that their effectiveness was higher than the expected standard 80/80.
2. The efficient index of Prathomsuksa 3 students’ learning management through activity of Thai language learning group was 0.7287 or 72.87\%.
3. The post-test of students’ achievement of Thai-spelling writing by using activity was higher than the pretest. It was .01 statistically significant.
4. Prathomsuksa 3 students valued the use of activity in Thai-spelling writing was higher than level. (\bar{X} = 2.64, S.D. = 0.14).

KEYWORDS: Improving Thai-spelling writing and Game activity
LEARNING ACTIVITY DEVELOPMENT OF WORD SPELLING USING SKILL-PRACTICE MATERIALS, THAI LEARNING STRAND, FOR PRATHOMSUUKA 5

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ABSTRACT

This research was aimed to 1) develop lesson plan with the topic of word spelling using skill practice materials, Thai Learning Strand, Prathomsuksa 5, to gain efficiency 80/80 in accordance with the criterion. 2) Study efficiency index of word spelling skill practice materials, Thai Learning Strand, Prathomsuksa 5. 3) Compare pre learning achievement with the post one of t students using word spelling skill practice materials, Thai Learning Strand, Prathomsuksa 5. 4) Study students' satisfaction towards learning management using word spelling skill practice materials, Prathomsuksa 5. The target groups were Prathomsuksa 5 students, numbering 25 students, Ban Nong Kham Wittaythe School, the Officer of Roi-ed Primary Education service Area Region 2, semester 2, academic year 2013. The instruments used were 6 lesson plans, consuming 12 hours' time, word spelling skill practice materials, with 6 topics, word spelling achievement test, one copy with 30 items, 4 choices, students' satisfaction questionaire, on copy with 15 items. The statistics used was mean, standard deviation, percentage and t-test (Dependent Sample)

The findings were found that:
1. Word-spelling skill practice materials, Thai Learning Strand, Prathomsuksa 5, constructed by the researcher, gained efficiency 84.07/81.40, which was higher than the criterion 80/80 set.
2. Efficiency index of word spelling skill practice material, Thai Learning Strand, Prathomsuksa 5, was 0.6336, meaning that students learning through skill practice materials gained increasing knowledge 63.36 %
3. The average score of post learning achievement based on using word spelling skill practice material, Thai Learning Strand, Prathom 5, was higher than the pre one with statistical significance at the level of .01.
4. Students' satisfaction towards learning through word spelling skill practice material, Thai Learning Strand, Prathomsuksa 5, gained ( X = 4.63, S.D. = 0.14) meaning that students possessed most level of satisfaction.

KEYWORDS: Word spelling using skill, Thai learning strand
THE DEVELOPMENT OF ANALYTICAL THINKING ABILITIES OF MATHAYOM SUKSA 3 (GRADE 9) STUDENTS USING SQ4R METHOD IN THAI LANGUAGE STRAND

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ABSTRACT

The purposes of this research were 1) to develop learning achievement by using SQ4R method in Thai language strand for Mathayom Suksa 3 (Grade 9) students based on the 75/75 standardized criteria, 2) to compare the students’ analytical thinking abilities between before and after learning by using SQ4R method in Thai language strand, and 3) to investigate the students’ satisfaction toward learning by using SQ4R method in Thai language strand. The subjects used in this research consisted of 28 Mathayom Suksa 3 (Grade 9) students studying in the second semester of 2013 academic year at Samakkhi Witthaya Municipality school under Division of Education of Municipality Maha Sarakham. The research instruments were 7 teaching plan for learning organization by using SQ4R method, a set of four multiple choices test for assessing students' analytical thinking abilities and a set of 20 items of five rating scale questionnaire for assessing students’ satisfaction toward learning by using SQ4R method. The data were analyzed by using percentage, mean, standard deviation, and t-test (dependent samples).

The research results were as follows:

1. The learning achievement using SQ4R method in Thai language strand for Mathayom Suksa 3 (Grade 9) students yielded 81.90 / 80.36 efficiency which met the 75/75 criteria established.

2. The students’ analytical thinking abilities after learning by using SQ4R method in Thai language strand was significantly higher than before leaning at the level of .05.

3. The students’ satisfaction toward learning by using SQ4R method in Thai language strand was at the highest level. \( \bar{X} = 4.62, \text{SD} = 0.56 \)

KEYWORDS: Analytical thinking abilities and SQ4R Method
THE DEVELOPMENT OF OPERATION THE BUILDING ENVIRONMENT AND SAFETY ; CHILD’S DEVELOPMENT CENTER AT WATPHOSRIBANKA TAMBON ETUE MUNICIPALITY IN YANG TALAT DISTRICT, KALASIN PROVINCE

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ABSTRACT

The objectives of this research were to 1) study the operation of the building. The unit surrounded and safety Child’s Development Center at watphosribanka Tambon Etue Municipality in Yang Talat District, Kalasin Province. 2) study the guidelines and suggestions. Development operations building is surrounded Child’s Development Center at watphosribanka Tambon Etue Municipality in Yang Talat District, Kalasin Province and 3) study the development of the operations building. The unit surrounded and safety Child’s Development Center at watphosribanka Tambon Etue Municipality in Yang Talat District, Kalasin Province. The samples used in this study were consortium of 14 people and a group of 34 contributors. The research instruments were Questionnaires and interviews. The statistics used in data analyzed by using Percentage, Mean, Standard deviation and Descriptive analysis

The research results were as follows;

1. Results of the study of the operations building. The unit surrounded and safety Child’s Development Center at watphosribanka Tambon Etue Municipality in Yang Talat District, Kalasin Province. Found that the operation must develop four areas: classroom, school building, school grounds and bathroom - toilet and canteen.

2. Guidance and suggestions in the development, implementation and surrounded the building Child’s Development Center at Watphosribanka Tambon Etue Municipality in Yang Talat District, Kalasin Province. Found that in the development, implementation should be. Board of Governors Meeting Teachers, child care Parents The Child’s Development Center And stakeholders to understand. Together to plan and execute the development of school grounds and buildings are involved.

3. The developing operations building. The unit surrounded and safety Child’s Development Center at Watphosribanka Tambon Etue Municipality in Yang Talat District, Kalasin Province. Found that the operations building and the environment was at the highest level (X = 4.66, SD = 0.57).

KEYWORDS : Development of operation, Building environment and safety
CURRICULUM DEVELOPMENT OF LOCAL LEARNING ON TRADITIONAL DESSERT IN THE NORTHEAST, GROUP LEARNING OF TECHNOLOGY AND CAREERS FOR GRADE 5 STUDENTS

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ABSTRACT

This study aimed to: 1) develop a curriculum of local learning on traditional dessert, Group learning of Technology and Careers for Grade 5 students, Ban Nonsomboon Prongsuwan School, 2) develop learning management plan on the traditional dessert, Group learning of Technology and Careers for Grade 5 students according to the performance skills criteria of 80/80, 3) to compare performance skills on the traditional dessert for students between pretest and posttest, and 4) study the attitudes of Grade 5 students towards learning of the traditional dessert in the Northeast. The sample used in this research consisted of 19 students of Grade 5 from Bannonsomboon Prongsuwan School, Tha Chang Klong Subdistrict, Pha Khao District, Loei Province, Office of Primary Education, Area 2, Semester 2, Academic year 2013. The sample group was selected by using purposive sampling. Research tools including learning course is on the folk dessert in the Northeast, group learning of technology and career, for Grade 5 students, learning management plans (6 plans), performance skill test form, and the opinions towards learning. A 5-level rating scale of 10 items, with items discrimination ranging from 0.38 to 0.87 and reliability was 0.91. Statistics used in data analysis were percentage, mean, standard deviation, and t-test (Dependent Samples t-test).

The results showed as follows:

1. The course of local learning on traditional dessert in the Northeast, Group learning of Technology and Careers for Grade 5 students. It is consist of the principles, destination, structural classes, course description, expected learning outcomes, learning activities, learning materials, measurement and evaluation. The learning component on the course of local learning was at the most appropriate level (\( \overline{X} = 4.51, \text{ S.D.} = 0.13 \)).

2. Instructional activity based courses for local learning on folk dessert in the Northeast, Group learning of Technology and Careers, for Grade 5 students has effectiveness (E1/ E2) of 85.09/84.98, which was higher than a preset threshold.

3. Grade 5 students with the activity-based learning according to curriculum of local learning about traditional dessert in the Northeast has performance of skills after learning higher than pretest with statistically significant at the .01 level.

4. Grade 5 students have attitudes towards learning by activity-based learning according to curriculum of local learning on the traditional dessert, Group learning of Technology and Careers as a whole was at the high level (\( \overline{X} = 4.38, \text{ S.D.} = 0.18 \)).

KEYWORDS: Curriculum development of local learning, Traditional dessert in the northeast
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THE DEVELOPMENT OF MUKDAHAN PHUTHAI THAI DANCING MODEL ON THE TOPIC OF KEB MAK KHAM WAAN KAEM KHONG, ARTS LEARNING STRAND (DANCING ART) FOR MATTHAYOMSUEKSA 2 STUDENTS

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ABSTRACT

This research was aimed to 1) develop the learning activity Mukdahan Phuthai Thai Dancing, Keb Mak Kham Waan Kaem Khong. Also, and to study the effectiveness index of the Mukdahan Phuthai dancing learning activities Keb Mak Kham Waan Kaem Khong. The research instruments were 1) Series of learning activities 2) Nine specialists in Education have examined the activity by using the statistics: frequency, percentage, mean, and standard deviation for data analysis. The results showed as follow:

1. Learning activities were to developed in the local dancing art curriculum for Matthayomsueksa 2 students effectively index.
2. The effectiveness of the learning activity Model on the topic of Mukdahan Phuthai Dancing Keb Mak Kham Waan Kaem Khong, the informative knowledge group of Arts (Dancing Arts) for matthayomsueksa 2 students checked by the specialist was 93%.

KEYWORDS: Mukdahan Phuthai Thai dancing
THAI LEARNING ACHIEVEMENT DEVELOPMENT ON THE TOPIC OF REDUCED VOWEL, CHANGED VOWEL AND ABILITY IN CRITICAL THINKING OF PRATHOMSUEKSA 1 STUDENTS USING MIND MAPPING IN ADDITIONALLY TO 4 MAT MODEL

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ABSTRACT

This research was aimed to 1) develop Thai learning management on the topic Reduced Vowel, Changed Vowel of Prathomsueksa 1 students using mind mapping in additionally to 4 MAT Model abide by criterion 80/80. 2) Compare post Thai learning achievement of students with the pre one. 3) Compare post critical thinking ability with the pre one. Sampling group used was 35 Prathomsueksa 1/1 students of Doonsard Community School, Khon Kaen Province Office of Education, Region 4, Kranuan District, Khon Kaen Province, academic year 2013 gained by group random sampling. The instruments used were 6 lesson plans using mind mapping additionally to 4MAT Model, learning achievement test with 3 choices, numbering 20 items and critical thinking test, numbering 10 items. Statistic used in analysis data was percentage, mean and standard deviation and t-test ( Dependent Samples )

The finding were found that:

1. Thai learning management on the topic Reduced Vowel, Changed Vowel using mind mapping in additionally to 4 MAT Model of Prathomsueksa 1 gained efficiency 85.77/82.57.
2. Prathomsueksa 1 students using mind mapping additionally to 4 MAT Model, gained Thai learning achievement and the ability of critical thinking post learning higher than the pre one with the statistical significance at the level of .01.

KEYWORDS: Thai learning achievement, Critical thinking
THE DEVELOPMENT OF READING ABILITY, CRITICAL THINKING, AND EMOTIONAL QUOTIENT OF THE PRATHOMSUKSA-3 STUDENTS BY THE LEARNING ACTIVITY MANAGEMENT OF 4 MAT

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ABSTRACT

This research was to 1) develop the Thai language learning activity, in reading by applying the learning activity management, 4 MAT which has 80/80 efficiency  2) find the effectiveness index of the 4 MAT  3) compare the reading ability, analytical thinking, and emotional quotient of the students before and after the instruction. The sample used was 25 students in Prathomsuksa 3, in the academic year 2013 at Si Sombun Witthaya School, Nong Ko Subdistrict, Kranuan District, Khon Kaen Primary Education Service Area 4, in the second semester. The instrumentation were 6 activity plans, of 4 MAT, 30 items of 3-choice Thai language reading achievement test, 20 items of 3-choice analytical thinking test, and 15 items of the emotional quotient in 5-level rating scale. The statistics used in data analysis were percentage, mean, standard deviation, and t-test (Dependent Samples)

The research result was found that 1. The 4 MAT. Thai Language Department, had the 84.73/83.47 efficiency and the 0.7238 effectiveness index or 72.38%. The students instructed with the 4 MAT had the increased reading ability, analytical thinking, and emotional quotient with the statistical significance level at .01. 3. The students instructed with the 4 MAT had the increased reading ability, analytical thinking, and emotional quotient with the statistical significance level at .01.

KEYWORDS: Reading ability, Critical thinking, and Emotional quotient
THE DEVELOPMENT ON ANALYTICAL READING, PROBLEM-SOLVING THINKING, AND ENDOGENY OF SEVENTH-GRADE STUDENTS THROUGH STAD

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ABSTRACT

This research aimed to develop the competencies of analytical reading, problem-solving thinking, and endogeny of seventh-grade student by using STAD, to compare the competencies of analytical reading, problem-solving thinking, and endogeny between pre-test and post-test; and to study the relation of competencies of analytical reading, problem-solving thinking, and endogeny the student. The sample of this research consisted 10 students from seventh-grade class, Bansrisuk School, selected by cluster random sampling. The research instruments were: 1) 5 packages of learning management using STAD for grade 7; 2) 30 items of four-multiple-choices analytical reading test; 3) 20 items of four-multiple-choices problem-solving thinking test; and 4) 20 items of 20 items of four-rating scale for endogeny measurement. Statistics used in this research were percentage, mean value, standard deviation, and the Wilcoxon Signed Ranks Test.

The research found that:

1. The seventh-grade student had competencies of analytical reading, problem-solving thinking, and endogeny in the post-test higher than that of the pre-test at the statistical significance .05 level.

2. The seventh-grade student had competencies of analytical reading, problem-solving thinking, and endogeny in relations.

KEYWORDS: Analytical reading, Problem-solving thinking and Endogeny, STAD
EARNING SKILLS WITH THE SCIENTIFIC PROCESS BASIC MATERIALS AROUND US LEARNING FOR PRATHOM SUEKSA 3 (GRADE 3)

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ABSTRACT

The purposes of this research were 1) to develop learning through inquiry cycle with basic scientific process skill exercise on the topic surrounding materials, learning area of science for grade 3, classes, based on the 80/80 standardized efficiency. 2) to study the effectiveness index of learning on students participation in the inquiry. 3) to compare the pre- and post-learning achievement of the students participated in the inquiry cycle. 4) to compare the pre- and post-learning basic scientific process skill of the students participated in the inquiry cycle. 5) to study the students’ satisfaction on learning through the inquiry.

The subjects used in this research consisted of 15 Prathom Sueksa 3 (Grade 3) students studying in the second semester of 2013 academic year at Banhuidue School, Loei Province, Office of Primary Education, Area 2. The research instruments were 1. Inquiry cycle learning management activities. 2. Basic scientific process skill exercises 3. The Learning achievement test 4. The scientific process skill test and 5. Students’ satisfaction questionnaire. The data was analyzed by using percentage, mean, standard deviation, and t-test (dependent samples).

The research results were as follows:

1. The result of learning management using inquiry cycle with basic scientific process skill exercise had the efficiency \( \left( \frac{E_1}{E_2} \right) \) at \( \frac{82.33}{82.00} \) based on the 80/80 criteria.
2. The effectiveness index of learning through the inquiry cycle with basic scientific process skill exercise was at 0.6478.
3. The post-learning achievement through the inquiry cycle with basic scientific process skill exercise was higher than that of the pre-learning at 0.01 level of statistical significance.
4. The post-learning basic scientific process skill through the inquiry cycle with basic scientific process skill exercise on the topic surrounding materials was higher than that of the pre-learning at 0.01 level of statistical significance.
5. The grade-three students’ satisfaction on learning through the inquiry cycle with basic scientific process skill exercise on the topic surrounding materials displayed in overall at a higher level.

KEYWORDS: Inquiry cycle learning skills, Scientific process
THE DEVELOPMENT OF LEARNING ACHIEVEMENT IN MATHEMATICS BY STAD COOPERATIVE LEARNING WITH INSTRUCTION PACKAGE ON “APPLICATION” FOR PRATHOMSUESA 5 STUDENTS

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ABSTRACT

This research was aimed to 1) develop the STAD cooperative learning with instruction package on “Application” for Prathom Sueksa 5 to have the efficiency at 75/75, 2) study the effectiveness index of Prathom Sueksa 5 students’ learning achievement taught by STAD cooperative learning with instruction package on “Application”, 3) compare mathematic achievement before and after learning along STAD cooperative learning with instruction package on “Application” for Prathom Sueksa 5, and 4) study the students’ satisfaction towards learning along STAD cooperative learning with instruction package on “Application” for Prathom Sueksa 5. The target group comprised 16 students studying in the second semester the academic year 2013, Ban Kambong School, Khon Kaen Primary Education Service Area Office 4. The research instruments were 1) 16 STAD Cooperative Mathematics lesson plans with instruction packages on “Application”, 2) Mathematic achievement test, and 3) students’ satisfaction test toward STAD cooperative learning with instruction package on “Application” for Prathom Sueksa 5. Statistics used for data analysis were percentage, mean, standard deviation, and the Wilcoxon signed rank test.

This research revealed:

1. The efficiency of STAD cooperative learning with instruction package on “Application” for Prathom Sueksa 5 was at 86.95/82.29, higher that the criteria set.
2. The effectiveness index of Prathom Sueksa 5 students’ learning achievement taught by STAD cooperative learning with instruction package on “Application” was at 0.6768.
3. The mathematic achievement after learning along STAD cooperative learning with instruction package on “Application” for Prathom Sueksa 5 was significantly higher than that of before at .05.
4. The students’ satisfaction towards learning along STAD cooperative learning with instruction package on “Application” for Prathom Sueksa 5 was at the high level ( X̄ =3.89, S.D.=0.17).

KEYWORDS: Learning achievement, mathematics, STAD cooperative learning, Instruction package
DEVELOPMENT OF WORD READING USING AESOP FABLES WITH PRACTICING SETS FOR PRIMARY LEVEL 3 DISABILITY LEARNERS OF THAI LANGUAGE LEARNING AREA

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ABSTRACT

Purposes of this research were, firstly, to develop learning activities of individual implementation plans (IIP) which was efficient at 75/75. Secondly, to study index value effectiveness of student learning by using Aesop fables with practicing sets. Thirdly, to compare word reading ability of disability learners before and after learning. Fourthly, to study student satisfaction on practicing sets. Target group used in this research was disability learners in word reading, Thai Language Learning Area, studying in semester 2, academic year 2013, of Ban Khu Mueang School, Mueang Suang District, under Roi-Et Primary Educational Service Area Office 2, taking 16 times for experiment, 1 hour for each time. Research instruments used in this research were; 1) 8 individual implementation plans, 2) 8 sets of word reading practicing, 3) Word reading ability test which specified words for the students for 30 items, 30 words by examining individually, 4) Questionnaires which was 3 levels of rating scales for 10 items. Statistics used in the research were percentage, average, and standard deviation (S.D.).

The findings found that:
1. Efficiency of learning activities of individual implementation plans (IIP) using Aesop fables with practicing sets was efficient at 78.13/79.05 which was higher than the criteria of 75/75 defined.
2. Effectiveness index of word reading practicing sets of disability learners had value at 0.702, which means the students have improved their learning, accounted for 70.27 percent.
3. Word reading capability before and after learning activities by using word reading practicing sets found that students’ pre-test score had average score at 8.86 scores, accounted for 29.52 percent, and post-test score had average score at 23.71 scores, accounted for 79.05 percent.
4. Student satisfaction on learning activities by using practicing sets of word reading development using Aesop fables with practicing sets was at high level, having average at 2.66.

KEYWORDS: Word reading, Aesop fables, Practicing sets, Disability learners
ABSTRACT

This research was aimed to 1) find efficiency of Thai language lesson plans based on communication reading of Prathomsuksa 2 students using CIRC Cooperative Group abide by criterion 80/80. 2) Compare post Thai learning achievement of students with the pre one. 3) Compare post writing communication ability with the pre one. 4) Compare the scores of post learning critical thinking ability and the pre one. Sampling group used were 30 Prathomsuksa 2 students Bannatard Somsa-ard School, gained by group random sampling. The instruments used were 6 lesson plans, learning achievement test with 3 choices , numbering 30 items , writing communication test with 5- particulated on rubric scores , 4-levels , 20 scores, and critical thinking test , numbering 20 items. Statistics used in analysis data were percentage, mean and standard deviation and T-test (Dependent Samples)

The findings were found that:

1. Lesson plans based on reading comprehension , writing communication and critical thinking of Prathomsuksa 2 students using CIRC cooperative group gained efficiency (E1/E2 ) 85.97/82.17, Implying that it was effective accordingly to the criterion (80/80) set.

2. Prathomsuksa 2 students gained higher post learning achievement using CIRC Cooperative Group than the pre one with the statistical significance at the level of .01.

3. Prathomsuksa 2 students possessed higher post learning writing communication writing ability than the pre one with the statistical significance at the level of .01.

4. Prathomsuksa 2 students possessed higher post learning critical thinking ability using CIRC Cooperative Group than the pre one with the statistical significance at the level of .01

KEYWORDS: Reading comprehension achievement, Writing communication, CIRC Cooperative group
THE DEVELOPMENT ACTIVITIES TO LEARN FOLK MUSIC, USING THE SKILLS GROUP LEARNING ARTS (MUSIC) FOR PRATHOMSUEKSA 5 STUDENTS

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ABSTRACT

The purposes of this research were 1. to develop a learning activity, isan folk music, using the skill-training strand art (music) for prathomsueksa 5 students that is effective according to the criterion 80/80. 2. to study the effectiveness index learning isan folk music, using the skills. 3. to compare student achievement before and after learning folk music using the skills. 4. to study the satisfaction of students with learning folk music, using the skill-training strand art (music) the target group is students in prathomsueksa 5 at thairatwitaya 35 (khumkhung) school, semester 1 academic 2013. Tools used in research is 1) lesson plans, skills training, practical folk music 12 plan. 2) A folk musical performance skills. 3) multiple-choice achievement test fourth option number 5 series. 4) The questionnaire of satisfaction, 10 questions the statistics used in the data analysis are: percent, average, standard deviation and t-test (dependent samples). The researcher salts were as follows:

1. The learning activities, arts (music) for prathomsueksa 5 students performance equal to 85.84 / 83.85 according to defined criteria.

2. The effectiveness index (E.I.), learning folk music, using the training group learning the art (music) for prathomsueksa 5 students is 0.7439

3. The achievement of prathomsueksa 5 students after learning the skill group learning arts (music) than previously studied statistically significant at the .05 level

4. The student satisfaction with the learning folk music, using the skills group learning arts (music) was in the highest level (X = 4.60, S.D. = 0.16).

KEYWORDS: Folk music, Skills group learning, Arts (Music)
THE DEVELOPMENT OF READING AND WRITING WORDS WITH A VOWEL MIX USING LEARNING ACTIVITIES WITH ASSEMBLY SKILLS GROUP LEARNING SUBSTANCE OF THAI LANGUAGE FOR GRADE 1 STUDENTS

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ABSTRACT

This research aims to 1) develop learning activities plan with skills practices on reading and writing compound with a vowel, Group learning substance of Thai language for Grade 1 students that has efficiency according to criteria 80/80. 2) study the effectiveness index of learning using a learning activity consists of practice reading and writing words mix with the vowel, 3) compare the achievement of students between pretest and posttest by learning assembly skills on reading and writing words mix with the vowel and, 4) study the satisfaction of students towards learning activities with assembly to practice reading and writing words mix with the vowel. The target group is Grade 1 students from Kudnamsai School, of 8 students. Office of Mahasarakham Primary Educational Service Area 2, Semester 2, Academic Year 2013. Tools used in this research is the learning management plan to develop reading and writing words with a vowel mix by using learning activities, the skills practice to develop reading and writing words mixed with vowel, learning achievement test of students taught by reading and writing words mix with the vowel and, 4) Satisfaction test. The statistics used to analyze data using mean, standard deviation, and percent. Hypothesis test (t-test dependent sample).

The results showed that the

1. Learning activities management plan with assembly skills on reading and writing mix with vowel, Group Learning of Thai language for Grade 1 students is equal to 88.19/91.25, which is according with the determined criteria.
2. Effectiveness index of learning using learning assembly skills on reading and writing words mixed with an equal to 0.8495 suggests that student learning has progressed of 84.95 percent.
3. Learning achievement after learning activities with learning assembly skills on reading and writing compound words with vowels was higher than pretest with statistically significant at the .05 level.
4. The students were satisfied with the learning activities and learning skills on reading assembly and writing compound words with vowels at the high level.

KEYWORDS: Learning skills training, Reading
DEVELOPMENT OF PRACTICE EXERCISES FOR PRATHOMSUKSA IV STUDENTS LEARNING TO READ AND WRITE THAI DIFFICULT WORDS USING STUDENT TEAMS ACHIEVEMENT DIVISION (STAD)

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ABSTRACT

This research aimed to 1. develop Practice Exercises for Prathomsuksa IV students learning to read and write difficult Thai words under the Thai content strand using Student Teams Achievement Division (STAD) that met the established 80/80 criteria of efficiency; 2. to study the effectiveness index of the developed Practice Exercises using STAD; 3. compare the students’ learning achievement before and after learning through use of the Practice Exercises using STAD; and 4. to study the students’ satisfaction with these learning activities. The sample group consisted of 27 Prathomsuksa IV students of Barn Ngua Ba Community School, Mahasarakham Office of Primary Education Area 2. The instruments used in this study were instructional plans based on STAD to teach Prathomsuksa IV students to read and write difficult Thai words; 6 Practice Exercises for learning to read and write difficult Thai words; a 30-item test for evaluating Prathomsuksa IV students’ achievement in reading and writing difficult Thai words; and a 20-item questionnaire of students’ satisfaction with learning through use of these Practice Exercises. The statistics used in analyzing data in this study were mean, standard deviation, percentage, and t-test (Dependent Sample).

Findings of the study are as follow:

1. The efficiency index of the instructional plans based on STAD using the Practice Exercises for Prathomsuksa IV students learning to read and write difficult Thai words was 85.06/83.09, which was higher than the established 80/80 criterion.
2. The effectiveness index of the developed Practice Exercises for Prathomsuksa IV students was 0.6824, meaning that the students’ knowledge increased 68.24 % after learning to read and write difficult Thai words using these exercises.
3. The students’ posttest achievement average was higher than that of the pre-test at the .01 level of statistical significance.
4. The students’ overall satisfaction with learning to read and write difficult Thai words through use of these Practice Exercises based on STAD was found at the high level.

KEYWORDS: Practice Exercises, Teams achievement
ABSTRACT

The objectives of this research were (1) to access the efficiency of poetry klon-supaab of secondary school grade 2 students by using a set of CIPPA learning activities of the determined criterion of 75/75 (2) to compare the students learning achievement and creative thinking abilities before and after the learning development. 3) to study the students’ satisfaction towards the learning development using the developed set of practices klon supaab of secondary school grade 2 students by using a set of CIPPA. The research samples were a group of 30 secondary school grade 2 students, class 2/1 of Khon Kaen Phattanasueksa School under the office of Khon Kaen Secondary Educational Service Area 25, enrolled in the second semester of 2013 academic year and selected by cluster sampling. The research instruments included 1) lesson plans 2) poetry writing package 3) the learning pre-post achievement test 4) the scholastic ability test of poetry creative thinking and 5) the students’ satisfaction. The research results were as follows: (1) The practices on poetry klon-supaab and creative thinking abilities of secondary school grade 2 students by using a set of CIPPA learning activities were 85.19/89.78, both of which were higher than those of the determined criterion of 75/75 (2) The secondary school grade 2 students and creative thinking abilities was significantly higher than that before the learning development at .01 level. (3) The student’s satisfaction toward the learning development using the developed set of secondary school grade 2 students was at the high level.

KEYWORDS: Skill package, CIPPA learning, Creative thinking
READING AND ANALYTICAL THINKING SKILL DEVELOPMENT THROUGH ARC READING TECHNIQUE OF PRATHOMSUUKSA 4 STUDENTS

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ABSTRACT

This research is aimed to 1). develop learning management of comprehension reading through ARC reading Technique in Thai language of Primary 4 students to gain efficiency in accordance with criteria 80/80. 2). to compare pre-learning achievement and post-learning achievement pertaining to comprehension reading of primary 4 students learning through teaching with ARC reading technique. 3). to compare analytical thinking pre-learning and post-learning of primary 4 students learning through teaching with ARC reading technique. Population and sampling group: 1) The population used in this research were 112 primary 4 students, the group of Ban Dong School, consisting of 6 schools, the second semester in academic year 2013. 2) The sampling group used in this research were 11 primary 4 students from Sup Phoophan Kum Plalai Nong Phak Waen school, affiliated to the Office of Primary Education Service Area Region 4, studying in the second semester, academic year 2013, gain by Cluster Random Sampling. The instruments used in the research were 1). 7 lesson plans basing on using ARC reading technique in Thai language of primary 4 students, spending 13 periods teaching. 2). The test measuring comprehension reading ability achievement with 30 items. 3). The test measuring critical thinking ability with 30 items. This research is based on the one group pre-test post-test design. The statistics used was mean, percentage, standard deviation and t-test.

The research results were as follows:

1. The management of reading comprehension and critical thinking through ARC reading technique teaching, Thai language of primary 4 students gained efficiency between E1/E2 was 90.67/92.74, which was higher than the criteria prescribed 80/80.
2. Pre and post learning achievement pertaining to comprehension reading of primary 4 students learning through ARC reading technique teaching, gained higher post learning than pre-learning scores with statistical significance at the level of .01.
3. The Analytical Thinking of primary 4 students learning through ARC reading-technique teaching, both pre and post learning was different with statistical significance at the level of .01.

KEYWORDS: Thinking Skill, ARC reading technique
THE DEVELOPMENT OF READING AND WRITING SKILLS ON ENGLISH BY PRACTICE PACKAGE FOR MATTHAYOMSU KSA 1 STUDENTS.

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ABSTRACT

This research is aimed to 1) to development of reading and writing skills on English by practice package in I’m Australian on foreign language lessons on the 80/80 standardized criteria, 2) to study learning-effectiveness indicators of reading and writing skills on English by practice package 3) to compare the learning achievement between before and after learning of reading and writing skills on English by practice package 4) to investigate Matthayomsuksa 1 students’ satisfaction with the practice package reading and writing skill on English. Population and sampling group: 1) The population used in this research were 143 Matthayomsuksa 1 students of Wangnoisuksa School, consisting of 4 classroom, the second semester in academic year 2013.  2) The sampling group used in this research were 40 selected Matthayomsuksa 1/1 students from the fourth classrooms, used the random sampling technique to select the members of one classroom from the members of having a class average score of no less than the average score English test of Matthayomsuksa 1 students. The research instruments were Practice Package, lesson plans on the Reading and Writing Skills on English, the learning achievement test, and the questionnaire measuring students’ satisfaction with this teaching method. The data was analyzed by using percentage, mean, standard deviation, and t-test  (Dependent Samples).

The research results were as follows:

1. The efficiency of reading and writing skills on English by practice package in I’m Australian on foreign language lessons yielded 87.58/85.75 efficient which was higher than the 75/75 criteria established.
2. The indicators reading and writing skills on English by practice package was 0.7625
3. Pre and post learning achievement pertaining to reading and writing skills on English by practice package, gained higher post learning than pre-learning scores with statistical significance at the level of .01.
4. The students revealed their satisfaction with the practice package reading and writing skill on English at a high level.

KEYWORDS: Reading and Writing skills, Practice package
The development of study achievement of consonant cluster words, and self-confidence of PrathomSuksa 4 student by using study team achievement division (STAD)

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ABSTRACT

The purposes of this study are to 1) determine an efficiency of consonant cluster words of PrathomSuksa 4 students according to a 80/80 standard, 2) compare a study achievement of consonant cluster words of PrathomSuksa 4 by using Student Team Achievement Division (STAD) during pre and post test, 3) compare self-confidence of PrathomSuksa 4 students who conduct STAD during pre and post test. Sample group of this study consists of one classroom of PrathomSuksa 4 including 14 students in second semester, academic year 2013, Bannajarnborkwittayakarn school, Khon Kaen Primary Educational Service Area Office 2, Manchakiri district, Khon Kaen province. Samples are obtained from Cluster Random Sampling method by using classroom as random sampling unit. Study tools compose of 1) 12 units of STAD consonant cluster words assignment of PrathomSuksa 4, duration 12 hours, Department of Thai language, 2) 6 lesson plans, duration 12 hours, 3) 40 questions of study achievement assignment, 4) 10 questions of student self-confidence on study. Statistical analysis of this study is Mean and Standard Deviation

The research results were as follows:
1. Efficiency of consonant cluster words exercise of PrathomSuksa 4 students is 83.14/84.05 which is higher than a 80/80 standard that has been set up. Effectiveness Index is 0.6474 and student efficiency of consonant cluster words reading from post test is higher than pre test at statistical significance level of 0.5.
2. A study achievement of consonant cluster words of PrathomSuksa 4 students by using Student Team Achievement Division (STAD) during pre and post test shows that post test is higher than pre test at statistical significance level of 0.5 and average post test score is 25.86 which is higher than pre test that is 12.86.
3. Ultimately, self-confidence of PrathomSuksa 4 students, Department of Thai on Student Team Achievement Division (STAD) is at the highest level (µ = 4.57)

KEYWORDS: Consonant Cluster Words, Self-Confidence, Study team

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THE DEVELOPMENT OF MATHEMATICS LEARNING ACHIEVEMENT ENTITLED “APPLICATION UNIT” USING CIPPA MODEL COMBINED WITH EXERCISES FOR PRATHOMSUKSA 6 STUDENTS

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ABSTRACT

This study aimed to 1) develop lesson plans entitle “Application Unit” using CIPPA Model combined with exercises for Prathomsuksa 6 students in accordance with the criteria set as 75/75, 2) determine learning effectiveness index, 3) compare pretest and posttest achievement scores, 4) determine students’ satisfaction toward the learning. Samples participated in this experimental research were 18 Prathomsuksa 6 students in the second semester of the academic year 2013 of Ban namthiang wankru 2501 School, Khamcha-I District, Mukdahan, under the supervision of the office of primary education. Research instruments included 1) 12 lesson plans (1 hour per a plan, totally 12 hours) of Mathematics area entitled “Application Unit” using CIPPA Model combined with exercises for Prathomsuksa 6 students, which having the appropriate value at the high level (X = 4.40, S.D. = 0.61), 2) 12 exercises on the topic “Application Unit”, having the appropriate value at the high level (X = 4.50, S.D. = 0.52), 3) 30-item Mathematics achievement test, with 4 choice options, having Discrimination value at 0.20 up and Reliability equaling 0.91, and 4) 20 items of five-scale satisfaction questionnaire. Statistics used for data analysis were mean, percentage, and standard deviation, and the Wilcoxon Signed Ranks Test.

The findings show that:

1. The efficiency of lesson plans entitle “Application Unit” using CIPPA Model combined with exercises for Prathomsuksa 6 students, was 79.67/75.92 higher than the specified criteria 75/75.
2. The effectiveness index of lesson plan using CIPPA Model combined with exercises for Prathomsuksa 6 students was 0.6100.
3. The posttest achievement scores of Prathomsuksa 6 students who learned “Application Unit” through CIPPA Model combined with exercises were higher than pretest achievement scores at the .01 level of significance.
4. Prathomsuksa 6 students who learned “Application Unit” using CIPPA Model combined with exercises had satisfaction on learning as a whole at the high level in terms of 4 aspects: content, activities, learning and teaching materials, and evaluation.

KEYWORDS: Mathematics learning achievement, CIPPA Model
LOCAL CURRICULUM CONSTRUCTION ENTITLED FOLK HANDICRAFT FOR STICKY-RICE CONSUMING OF LOEI PEOPLE

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ABSTRACT

This research was aimed to construct local curriculum entitled folk handicraft for sticky-rice consuming of Loei people by learning strand group of occupation and technology with 27 Prathom 5 students, Klong Chang School, Tha Klong Chang Sub-district, Pha Kaow District, Loei Province in the Office of Loei Primary Education Service Area Region 2 in semester 1, 2550 academic year gained by purposive sampling group. The instruments were local curriculum entitled folk handicraft for sticky-rice consuming of Loei People by learning strand group of occupation and technology, Prathom 5 students’ local curriculum manual and curriculum assessment form. The statistics used were mean, standard deviation and t-test Dependent Samples.

The results were found that:

1. It was consisted of 5 components namely principles and objectives, learning time structure, subject definitions, learning outcome expected, learning activities, learning medias, measuring and evaluation.

2. Having been inspected by 5 specialists, it was found that the components of the said curriculum, on the whole, was most appropriate.

KEYWORDS: Local curriculum construction, Sticky-Rice consuming
DEVELOPMENT ACTIVITIES OF 5E LEARNING CYCLE USING THE NETWORK AS LEARNING MEDIA OF COMPUTER ON THE INFORMATION SYSTEMS AND THE INTERNET, LEARNING AREA OF OCCUPATIONS AND TECHNOLOGY FOR GRADE 8 STUDENTS

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ABSTRACT

This research aims to: 1) development activities of 5E learning cycle lesson using the network as learning media of computer subject on information systems and the internet, Group learning substance on occupation and technology for Grade 8 Student to be effective E1/E2 on basic criteria of 80/80, 2) study the index of effectiveness of student learning by 5E cycle lesson using the network lessons as a medium for learning, 3) compare the achievement of students, and 4) the satisfaction of the students towards the learning towards developed 5E cycle lesson. Sample used in the research were students of Grade 8 in the experimental group of 32 persons and a control group of 37 persons, Semester 2 Academic Year 2013, Sahassakhan School, Sahassakhan District, Kalasin Province, under the Kalasin Office of Secondary Education Service Area 24. Tools used in this research is a lesson on the network, learning activities management plan of 5E cycle lesson by using network as medium of learning, achievement test and a questionnaire for satisfaction of students. The statistics used in data analysis were percentage, mean, standard deviation. And test for the (Independent Sample).

The results showed that the
1. The activities 5E learning cycle lesson using the network as a learning media of computer on the information systems and the internet, Group learning substance of occupation and technology for Grade 8 students has efficiency of E1/E2 equals to 92.50/90.31, which was higher than a preset threshold.
2. The effectiveness index of student learning by using the 5E learning cycle lessons on the network as learning media of computer on the information systems and the internet, Group learning substance of occupation and technology for Grade 8 Students is equal to 86.28.
3. Students with learning activities using the 5E learning cycle lessons on the network as learning media, has higher achievement on posttest than students who learn normally, with statistically significant at .05 level.
4. Grade 8 Students are satisfied with the activity-based learning by 5E cycle lesson on the network, using the network course materials as learning media as a whole was at the high level (X = 4.50, S.D. = 0.50).

KEY WORDS : 5E learning cycle, Network, Information systems
ABSTRACT

This research is to 1) find the efficiency of the Thai language learning plan featuring the activity management based on the brain by applying the practice on diphthong for Prathom Suka 6 according to the 80/80 standard 2) compare the learning achievement between the pre and post instructions 3) compare the analytical thinking ability between the pre and post instructions 4) compare the achievement motivation between the pre an post instruction. The sample used in this research was 32 students in Prathom Suka 6/2 of Ban Erawan School, Loei Primary Education Service Area 2, in the second semester of the academic year 2013 with the randomization. The instrumentation were 8 learning activity management plans on diphthong, 4 pieces of skill practice, 30 items of 4-choice learning achievement test, 20 items of 4-choice analytical thinking test, and 15 items of 5-level rating scale achievement motivation test. The statistic used in analyzing the data was percentage, mean, standard deviation, and t-test (Dependent Samples)

The research result was found that
1. The learning activity plan on diphthong by applying the skill practice featuring the learning activity based on brain for Prathom Suka-6 students had 85.16/83.02 efficiency.
2. The students had the increased analytical thinking ability learning achievement and achievement motivation after the instruction with the statistical significance level at .01.
3. The students had the increased analytical thinking ability on diphthong by applying the skill practice featuring the learning activity based on the brain after the instruction with the statistical significance level at .01.
4. The students had the increased achievement motivation on diphthong by applying the skill practice featuring the learning activity based on the brain after the instruction with the statistical significance level at .01.

KEYWORDS: Thai language, Critical thinking and Achievement motivation
PREPARATION FOR READING AND WRITING USING AN ILLUSTRATED BOOK FOR KINDERGARTEN YEAR 2 STUDENTS

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ABSTRACT

This research aims to: 1) develop an illustrated book in preparation for reading and writing of kindergarten Year 2 level with an effective rate as per to the standard criteria of 80/80., 2) study the effectiveness index of reading and writing using an illustrated book for Kindergarten Year 2, 3) compare with their reading and writing of kindergarten year 2 students before and after the experience using the picture book. 4) study learning in reading and writing using the illustrated book for Kindergarten Year 2 students. The target groups in this study were kindergarten student year 2 at Ban Bungmennongdu School, Srichompu District, Khon Kaen Province. Khon Kaen Office of Elementary Educational Service Area 5, Semester 2, academic year 2013, amounts of 16 students. They were selected by the researcher specifically for classroom teaching. The instrument used in this study were 1) plans for the experience of reading and writing using the picture book for the total of 25 plans. 2) Illustrated book for Kindergarten Year 2 of 5 cases. 3) Assessment of the readiness of reading and writing using the illustrated book for kindergarten year 2, posttest is higher than pretest levels statistically significance at level .05. 4) Observational learning behavior of kindergarten year 2. The statistics used in data analysis were percentage, mean, standard deviation, and the t-test (Dependent Samples).

Research Findings

1. The effectiveness of illustrated book to prepare for reading and writing of kindergarten year 2 is equal to efficiency criteria of 87.13 / 85.00.
2. Effectiveness index of reading and writing using the illustrated book for students Kindergarten Year 2 is equal to 0.7362, that is, students progressively increased 73.62 percent.
3. Assessment of the readiness of reading and writing using the illustrated book for kindergarten year 2, posttest is higher than pretest levels statistically significance at level .05.
4. The analysis of learning behavior using a composition book to prepare for reading and writing for kindergarten year 2 overall behaviors of students learning at a high level with the average score of 93.54 percent.

KEYWORDS: Reading, Writing, Illustrated book
THE DEVELOPMENT OF LEARNING ACHIEVEMENT OF
THAI LANGUAGE ON READING COMPREHENSION
AND CRITICAL THINKING OF PRATOMSUUKSA 4 STUDENTS
USING COOPERATIVE LEARNING PACKAGE OF LT

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ABSTRACT

The objectives of this study were to 1) develop the lesson plans on reading comprehension and critical thinking using cooperative learning package of LT for Pratomsuksa 4 students 2) compare the students’ achievements on reading comprehension before and after using cooperative learning package of LT 3) compare the students’ ability of critical thinking before and after using cooperative learning package of LT and 4) investigate the students’ satisfaction cooperative learning package of LT. The participants obtained from the purposive sampling method was 16 Pratomsuksa students at Ban Nongmuad-ae School, Nonsang district, Nongbualamphu province, Nongbualamphu Primary Education Service Area Office 1 in academic year 2013. The instruments used in this study comprised 1) 7 lesson plans and innovations on the development of learning achievement of Thai Language on reading comprehension and critical thinking 2) 7 reading texts to develop reading comprehension on the development of learning achievement of Thai Language on reading comprehension and critical thinking 3) The achievement test (40 items) on reading comprehension 4) the test of critical thinking (40 items) and 5) the questionnaire to investigate the students’ satisfaction on the learning approach. The data were analyzed by use of basic statistical methods, namely, percentage, means (\( \bar{x} \)), standard deviation (S.D.) and the t-test (dependent Samples).

Findings of this study revealed as follow:

1. The effectiveness of the lesson plans on reading comprehension and critical reading using cooperative learning package of LT for Pratomsuksa 4 students was 82.10/80.60 which is higher than the effectiveness established criterion 80/80.
2. Learning achievement on reading comprehension of students after using cooperative learning package of LT was higher than before with statistical significant .01 level.
3. Students’ critical thinking after using cooperative learning package of LT is higher than before with statistical significant .01 level.
4. The level of students’ satisfaction on learning of reading comprehension and critical thinking using cooperative learning package of LT, was at high level (\( \bar{x} = 3.99 \), S.D.= 0.27).

KEYWORDS: Reading Comprehension, Critical thinking
THE DEVELOPMENT OF LEARNING ACHIEVEMENT IN HEALTH AND PHYSICAL EDUCATION BY STAD COOPERATIVE LEARNING WITH MIND MAPPING IN THE UNIT ENTITLED “GOOD HEALTH MAKES HAPPY” FOR PRATHOMSUEKSA 4

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ABSTRACT

This research was aimed to 1) develop learning achievement in Health and Physical Education in the unit entitled “Good Health Makes Happy” for Prathomsueksa 4 to have the efficiency set at 80/80, 2) study the effectiveness index of students’ learning achievement taught by STAD cooperative learning with mind mapping, 3) compare learning achievement before and after learning along STAD cooperative learning with mind mapping, and 4) study the students’ satisfaction towards learning along STAD cooperative learning with mind mapping. The target group comprised 22 students studying in the academic year 2014, Banna SriDongkeng School, KhonKaen Primary Education Service Area Office 4. The research instruments were 1) 12 lesson plans of Health and Physical Education in the unit entitled “Good Health Makes Happy” taught by STAD cooperative learning with mind mapping for Prathomsueksa 4, 2) 30-item achievement test with, and 3) 10-item satisfaction test. Statistics used for data analysis were percentage, mean, standard deviation, and t-test (dependent samples)

The result showed that:
1. the instruction in Health and Physical Education in the unit entitled “Good Health Makes Happy” for Prathomsueksa 4 students taught by STAD cooperative learning with mind mapping was at 83.28/83.64
2. the effectiveness index from students taught by STAD cooperative learning with mind mapping was at 0.7372
3. the students’ achievement in Health and Physical Education in the unit entitled “Good Health Makes Happy” after employing STAD cooperative learning with mind mapping ( X = 25.09), higher than before ( X = 11.32) statically significant at .01
4. the students’ satisfaction towards the instruction in Health and Physical Education in the unit entitled “Good Health Makes Happy” taught by STAD cooperative learning with mind mapping was at the high level ( X =4.17, S.D. =0.99).

KEYWORDS: Health and Physical education ,STAD Cooperative , and Mind mapping
LEARNING DEVELOPMENT ENTITLED “THE INSTRUCTION FOR APPROPRIATE BEHAVIOR ALONG BLOOM’S AFFECTIVE DOMAIN DEVELOPMENT AS THE SUPPLEMENT OF LEARNING AREA OF SOCIAL STUDIES, RELIGION AND CULTURE IN PRATHOMSUEKSA 1”

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ABSTRACT

This research was aimed to 1) develop learning achievement taught along Bloom’s affective domain development as the supplement of learning area of social studies, religion, and cultures in Prathom Sueksa 1 to have efficiency at 80/80, 2) compare content knowledge before and after employing the instruction for appropriate behavior along Bloom’s affective domain development, and 3) study the satisfaction of Prathom Sueksa 1 students towards instruction for appropriate behavior along Bloom’s affective domain development. By purposive sampling the purposed group comprised 18 of of Prathom Sueksa 1 students studying in the second semester of academic year 2013, Lao Ban Pade School, Mukdahan Primary Educational Service Area Office. The research instruments were 12 lesson plans, 12 supplementary work sheet entitled “Appropriate Behavior”, 20 items of content knowledge test, and 10 items of satisfaction test. The statistics for data analysis were percentage, mean, standard deviation, and Wilcoxon matched pairs signed–ranks test.

The result showed that:

1. The efficiency of the instruction for appropriate behavior along Bloom’s affective domain development as the supplement of learning area of social studies, religion, and culture in Prathom Sueksa 1 was at 84.79/82.22 which higher than the criteria set 80/80
2. The knowledge after employing the instruction for appropriate behavior along Bloom’s affective domain development was significantly higher than that of before at .01
3. The students satisfaction towards instruction for appropriate behavior along Bloom’s affective domain development was at the high level (X = 2.90, SD. = 0.12).

KEYWORDS : Instruction, Appropriate behavior
THE DEVELOPMENT OF SELF-CARE BEHAVIOR OF PRATHOM SUKSA 6 STUDENTS UNDER THE OFFICE OF MAHA SARAKHAM ELEMENTARY EDUCATIONAL SERVICE AREA 1

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ABSTRACT

The purposes of this research were 1) to develop self-care behavior of Prathom Suksa 6 students by the learning activity management through self-care behavior training set, 2) to compare the students’ self-care behavior between before and after the learning activity management through self-care behavior training set, and 3) to investigate the students’ satisfaction toward the learning activity management through self-care behavior training set. The subjects used in this research consisted of 6 Prathom Suksa 6 students who were studying at Ban Uhuparach school under the office of Maha Sarakham elementary educational service area 1. They were selected by purposive sampling technique. The research instruments were self-care behavior training set, The self-care behavior test and students’ satisfaction questionnaire. The data was analyzed by using percentage mean and Wilcoxon Matched Pairs Signed - Ranks Test.

The research results were as follows:

1. The students’ self-care behavior after the learning activity management through self-care behavior training set was at good to very good level.

2. The students’ self-care behavior after learning activity management through self-care behavior training set was significantly higher than before at the level of .05.

3. The students’ level of satisfaction toward the learning activity management through self-care behavior training set was at a high level.

KEYWORDS: Self-Care Behavior, Education service area, Training
A STUDY SCIENCE CONCEPTUAL CHANGE OF LIGHT AND VISIONS FOR MATTHAYOMSUUKSA 2 STUDENTS LEARNING ACTIVITY BY PREDICT-OBSERVE-EXPLAIN (POE)

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ABSTRACT

This research had the objectives to: 1) study science conceptual understanding of light and visions for Matthayomsuksa 2 students learning by Predict-Observable-Explain (POE); 2) study science conceptual change of light and visions learning by POE. The target group comprised 38 Mathayomsuksa 2 students of Muang Roi-et School, under Roi Et Office of Primary Education Service Area 1 in the 2nd semester of the academic year 2013, obtained through Cluster Random Sampling. The procedures and research tools comprised of 2 types, i.e. 1) Lessons plan according to learning activity Predict-Observ-Explain (POE); 2) Concept Survey; 3) a 30-item, 4-choice type of test on the students scientific concept a blank space was provided at the end of each question for the students to explain their reasons to choose the choices. The test had a difficulty level between 0.45 and 0.58, a discrimination power between 0.25 and 1.00, and a reliability of 0.89. The data was analyzed by categorizing information types according to each concept into 5 group using criteria by Wesbrook and Marek (1992). Data were analyzed by using descriptive statistic, Rater Agreement Index (RAI), equal to 0.9931. The statistics employed were percentage, mean, and standard deviation.

The results are as follows:

1. On the aspect of the students’ understanding of scientific concepts on the subject of “light and visions,” it was found that they made a mean pretest score of 7.84 or 26.14% of the full marks with a standard deviation of 8.40. However, at the completion of learning activities basing on the Predict-Observable-Explain (POE) Teaching Method, they made a mean posttest score of 18.66 or 62.19% of the full marks with a standard deviation of 15.13.

2. On the aspect of the students science conceptual change, it was found that the number of students who showed a change in their scientific concepts (CU+PU) increased, while the number of students who still showed alternative conception (PS+AC+NU) decreased. This could be attested by the fact that at the pretest only about 34.90% of the group showed complete understanding of scientific concepts while the number of those with alternative conception (PS+AC+NU) ran as high as 62.89%. After the learning activities which were based on the Predict-Observable-Explain (POE). Teaching Method the trend reversed in which the number of students with complete understanding of scientific concepts (CU+PU) rose to 82.54% while the number of students with alternative conception (PS+AC+NU) dropped down to the level of 19.39.

KEYWORDS: Science conceptual change, Light and visions, Predict-Observable-Explain (POE)
THE DEVELOPMENT OF LEARNING ACTIVITIES BY SUPPLEMENTARY READING BOOK, THEME 1: LIVING PROCESS AND FAMILY IN THE LEARNING STRAND OF CAREER AND TECHNOLOGY FOR PRATHOM SUEKSA 3 STUDENTS

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ABSTRACT

The purposes of this research were 1. to develop learning activities by supplementary reading book, theme 1: Living Process and Family in the Learning Strand of Career and Technology for Prathom Sueksa 3 Students based on the 80/80 standardized criteria, 2. to determine the effectiveness index of learning activities, 3. to compare the students’ achievement before and after learning, and 4. to investigate the students’ satisfaction toward learning activities by supplementary reading book, theme 1: Living process and family. The subjects used in this research consisted of 12 Prathom Sueksa 3 students studying in the second semester of academic year 2013 at Ban Hua Khua school under The Office of Mahasarakham Educational Service Area 1. The research instruments were 7 lessons plans, 7 supplementary reading book, A students’ achievement test consisted of 30 items, and A students’ satisfaction questionnaire consisted of 15 items with 5 rating scales. The data was analyzed by using percentage, mean, standard deviation and t-test (Dependent Sample).

The research results were as follows:

1. The learning activities by supplementary reading book, theme 1: Living process and family in the Learning Strand of Career and Technology for Prathom Sueksa 3 Students yielded 87.38/88.06 efficient which was higher than the 80/80 criteria established.

2. The effectiveness index of the learning activities by supplementary reading book, theme 1: Living process and family in the Learning Strand of Career and Technology was 0.6091 which indicated that the percentage of the students increased the achievement was 60.91.

3. The comparison of students’ achievement after learning through learning activities by supplementary reading book, theme 1: Living process and family in the Learning Strand of Career and Technology for Prathom Sueksa 3 Students and after using them found that higher than before learning at the level of significance .01

4. The students’ level of satisfaction toward learning through learning activities by supplementary reading book, theme 1: Living process and family in the Learning Strand of Career and Technology for Prathom Sueksa 3 Students was at the highest level.

KEYWORDS: Learning activities, Supplementary reading book
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