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13TH INTERNATIONAL CONFERENCE

AC-ESI-2018

ACADEMIC CONFERENCE ON EDUCATIONAL & SOCIAL INNOVATIONS

AC-ESI @2018 MILAN.IT

CO-ORGANIZED BY:

OFFICE OF GENERAL EDUCATION AND INNOVATIVE ELECTRONIC LEARNING, SUAN SUNANDHA RAJABHAT UNIVERSITY, BANGKOK, THAILAND

RUSSIAN PRESIDENTIAL ACADEMY OF NATIONAL ECONOMY AND PUBLIC ADMINISTRATION SOUTH RUSSIA INSTITUTE OF MANAGEMENT, ROSTOV-ON-DON, RUSSIA

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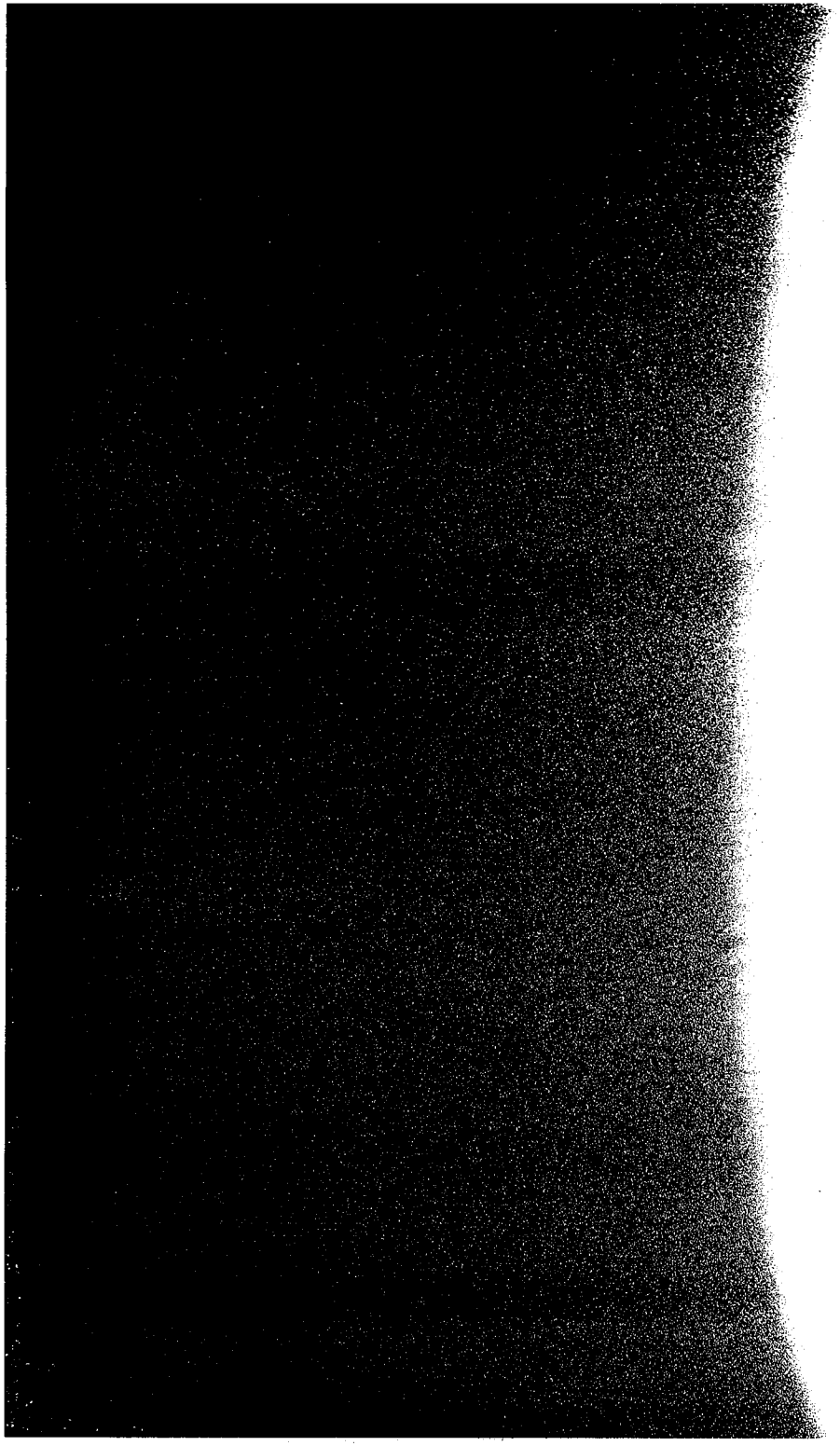

INTERNATIONAL ACADEMIC CONFERENCE ON EDUCATIONAL & SOCIAL INNOVATIONS

AC-ESI-2018

PROCEEDINGS

MILAN, ITALY

MAY, 2018

Dear ladies and gentleman, participants of International Academic Conference on Educational & Social Innovations, academics and scholars, presenters of research centers, educational institutes and business!

Today, in the era of global innovatization, spreading of modern forms of business and public administration, the social and economic role of education for increasing global management competitiveness and self-sufficiency becames a most important determinant, an effectiveness of international collaboration in discussing on actual educational issues and challenges is timely increasing.

And I would like to express my deep gratitude to partnered journals, educational institutions of Thailand, Russia, Indonesia, Germany, Iran, India, China whose efforts made possible this meeting of scholars and educators, interested in effective solution of global and national economy challenges using powerfull resources of social, cultural and innovative success.

And, of course, I would like to thank all participants for coming here, for their wonderful and useful research.

I want to say, that Suan Sunandha Rajabhat University – as a leading public University of Thailand – is very proud to be an organizer of this significant and important conference.

To each participant I wish success, finding a new colleagues and friends, development of scientific and business contacts, new scientific discoveries that are benefit for society, business and government. And also enjoy your time in fashion and design capital of the world.

Dr.Luedech Girdwichai, professor
President of Suan Sunandha Rajabhat University
Bangkok, Thailand

On behalf of the Organizational Committee, I welcome you to International Academic Conference on Educational & Social Innovations, in Milan!

AC-ESI-18 attracts researchers, educators and practitioners in all fields of modern education and education institutes management.

Participants have found in these meetings an excellent opportunity to share their experiences with colleagues from distance places and often continued to cooperate with them on their subjects of interest.

AC-ESI – 2018 has been established on a global basis.

We have received more than 80 submissions from 12 countries, each submission was peer-reviewed by at least two anonymous reviewers and a total of 51 papers were accepted for presentation in the conference.

Accepted papers are scheduled for presentation in 5 big sessions.

We would like to express our sincere appreciation to all the reviewers and chairs and members of various committees of AC-ESI -2018 conferences for their precious time and expertise.

I would like to express our sincere gratitude to everyone involved in making the joint conference a success. Many thanks go to the organizing committee, special session organizers, and the organizational committees and reviewers, the conference participants, and of course, to all the contributing authors who will be sharing the results of their research.

It is our great pleasure to have you with us at the joint conference, where I hope new ties will be made and existing ones renewed and strengthened.

Please accept our best wishes for a wonderful stay in Italy!

Grazie !

Dr. Preecha Pongpeng

Director of Office of General Education and Innovative Electronic Learning
Suan Sunandha Rajabhat University, Bangkok, Thailand

Dear friends and colleagues!

This conference is a meaningful crystallization of international initiatives among the number of institution towards practical cooperation in interdisciplinary studies, which will be contribute to the strengthening of the national educational systems.

The characteristic of the education in our era is change at the speed of light, which led us to the consensus that experts from many countries and many different disciplines must meet and discuss the phenomena, and then suggest solutions. We should be able to delve deeper by discussing problems across different disciplines as widely as possible, and thus grasping more profound solutions and suggestions.

The motivation for this conference is to help one's country through offering individual expertise and point of view based on one's individual discipline. As we gather from many different countries and many different disciplines, I believe that we should be able to expand the scope of our efforts and must aim at more challenging global contributions.

I hope all the participants of this conference will enjoy and get opportunities to enhance relationships of knowledge exchange.

I would like to extend my sincere gratitude to the organizing committee and especially to my Thai colleagues for given abilities to be a co-organizer and member of organizational board of AC-ESI – 2018, to be involved in the process of new international tradition formation!

Dr. Elena Zolochevskaya
Russian Presidential Academy of
National Economy and Public Administration,
South Russia institute of management,
Rostov-on-Don, Russia

Welcome to International Academic Conference on Educational & Social Innovations!

As a co-organizer of AC-ESI-2018 we tried to make a conference aimed to create a strong platform for academic and educational international collaboration.

Sustainable economical development always requires a breaking of any boundaries between scientists, an increasing of international informational and technological exchange, new forms of cross-cultural and transnational collaboration.

Due to this I am very glad to see here, in hospitable Italy, presenters of dozens countries from four continents. It proves that our activity in a direction of common, global study of patters for effective, competitive and successful development of educational practices is important, is required by society, science and business.

Suan Sunandha Rajabhat University is strongly related with educational and science provision for progress of Thailand and AEC. Academics of our university conduct research in all areas of economical and social development of Thailand and ASEAN.

We are science partners with Thai Government, presenters of Thai and international business and non-governmental organizations. Active external collaboration of SSRU with educational and research centers of ASEAN, Europe, Australia and USA opens huge prospects of international science collaboration and science exchange.

Furthermore, for making our conference work more effective and memorable, we tried to provide maximum comfortable conditions for all our delegates.

Therefore, I hope that the AC-ESI-2018 will achieve all set objectives to provide our delegates with education, networking, leadership enhancement and sweet memories.

Dr. Nattapong Techarattanased

Deputy director of Office of General Education
and Innovative Electronic Learning
Suan Sunandha Rajabhat University,
Bangkok, Thailand

In the modern conditions world transfers from the multilevel system of national social systems with strictly identified boundaries of economical interests and kinds of international collaboration to the absolutely complicated mix of transnational business, national states and international organizations whose interests are actively interact, intersect, overlap and even conflict each other's! Private sector is effectively using advantages of educational and cultural globalization, is mostly able to create multilevel markets and complex market strategies, to spread internal corporative net-work outside – to the directions of states, customers of educational products, institutes and competitors.

It shows how important and how significant is international science collaboration, international research and discussions on different issues of actual education and social development. Practical experience in economical stimulation, reformation of educational systems, regional integration, governmental support of educational and research institutes, increasing of national external competitiveness is very difficult to over-evaluate.

Being an educational and science leader of Thailand and ASEAN, an effective example of business-government-science collaboration, Office of General Education and Innovative Electronic Learning at Suan Sunandha Rajabhat University is really appreciated to be a co-organizer and informational partner of Academic Conference on Educational & Social Innovations, to be involved in the processes of international science collaborations and innovative ideas' transfer! Hope these collaborations will have bright and significant prospects.

Finally, I would like to welcome all participants of AC-ESI – 2018 and to wish new science results and findings, ideas and conclusions!

Dr. Jarumon Nookhong
Deputy Director of Office of
General Education and Innovative Electronic Learning
Suan Sunandha Rajabhat University,
Bangkok, Thailand

As a Member of Editorial board of Academic Conference on Educational & Social Innovations - 2018 I am delighted to welcome all participants in Milan!

The aim of AC-ESI- 2018 is to serve as a primary channel of knowledge sharing and the promotion of educational and social innovations internationally.

An important goal of the conference is to encourage learning from each other by exchanging ideas and views, and building networks.

A successful conference cannot be organized without the effort of many persons.

I would like to thank both working teams from the Office of General Education and Innovative Electronic Learning Suan Sunandha Rajabhat University and South Russia institute of management of Russian Presidential Academy of National Economy and Public Administration for their enormous contribution towards the detailed arrangement of this conference.

Furthermore, I would like to express my gratitude to the authors who submitted their papers to the AC-ESI 2018 as well as reviewers for their contributions and effort to an excellent conference proceeding.

Finally, I hope you will enjoy the conference and have a wonderful time during your stay in Italy.

Warmest Regards,

Mr. Apisit Rattanatranurak
Deputy director of office of
General Education and Innovative Electronic Learning
Suan Sunandha Rajabhat University,
Bangkok, Thailand

Warm greetings from AC-ESI – 2018 organizing committee!

As a coordinator of our International conference organization I tried to do everything for making this year conference the best one!

We spent many hours for choosing venue; we spent gigabytes of internet traffic sending mails and calls for papers!

Hope, all these spent were not useless. And our conference will be very successful, productive and important for society, science and business.

I am glad to note, that a number of AC-ESI – 2018 participants is still high!

Geography of our conference is covered 9 countries from Asia, East Europe, Middle East and even Africa!

Enjoy Italian natural and cultural heritage, world most famous outlets and restaurants! Don't forget to taste risotto with local wine, visit Da Vici museum and listen magic opera in La-Scala!

And to get new knowledge, new ideas and new friends from AC-ESI–2018!!!

Dr. Denis Ushakov, professor
AC-ESI – 2018 coordinator
International college
Suan Sunandha Rajabhat University,
Bangkok, Thailand

AC-ESI-2018

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INTERNATIONAL ACADEMIC CONFERENCE ON EDUCATIONAL & SOCIAL INNOVATIONS

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=AGENDA=

Day 1 07 May 2018
Venue: Sheraton Milan Malpensa Airport Hotel, Italy

13.00 Registration open — Foyer
Participants arrival, registration

14.00 Organizational meeting — Meeting Room
Networking

15.00 **Seminar "International publishing: guidelines to success"**
By Ms. Darina Prokhorova
Editor –in – chief of Journal of International Studies, Poland

17.00 Welcoming dinner — Restaurant

Day 2 08 May 2018
Venue: Sheraton Milan Malpensa Airport Hotel, Italy

9.00 Opening ceremony — Meeting Room
Welcome speeches:
Dr. Preecha Pongpeng
Director of Office of General Education and Innovative Electronic Learning, Suan Sunandha Rajabhat University, Bangkok, Thailand
Dr. Zolochevskaya Elena
Dean of faculty of Public Administration, South Russia institute of Management of Russian Presidential Academy of National Economy and Public Administration
Dr. Bundit Pungnirund
Dean of College of Innovations and Management, Suan Sunandha Rajabhat University, Bangkok, Thailand
Ms. Darina Prokhorova
Editor –in – chief of Journal of International Studies, Poland
Dr. Oleg Patlasov
Omsk Humanitarian Academy, Omsk, Russia
Dr. Denis Ushakov
Organizational board of AC-ESI– 2018

09.40 **University's Management And Students' Satisfaction: An Empirical Study Through Structural Equation Modelling**
Key-note speech by Dr. Johan W de Jager
Tshwane University of Technology, Pretoria, South Africa

10.30 Group photo

10.40 Coffee-break — Foyer

11.00 **Formation of the Social Successfulness of Students with Disabilities in the System of Continuous Inclusive Education**
Key-note speech by Dr. Preecha Phongpheng
Office of General Education and Innovative Electronic Learning Suan Sunandha Rajabhat University, Bangkok, Thailand

11.40 **Human capital and decentralization of education (the case of Tlajomulco de Zuniga Jalisco, Mexico)**
Key-note speech by Dr. José G. Vargas-Hernández
University Center for Economic and Managerial Sciences, University of Guadalajara, México

12.20 **Educating Young People in Multicultural Environment of Higher Education Institution**
Key-note speech by Dr. Nattapong Techarattanased
Office of General Education and Innovative Electronic Learning Suan Sunandha Rajabhat University, Bangkok, Thailand

13.00 **Lunch** — Restaurant

14.00	**Session 1 – Environmental education: ways and challenges of implementation**	
14.00	Sinchai Poolklai & Adisak Chuchat	
14.20	Jürgen Drissner	
14.40	Pattamaporn Kaewkongka & Apirati Triyawat	
15.00	Wipada Chaiwchan & Kittipat Bualek	
15.20	Kvetoslava Rešetová	
15.45	**Coffee break**	Foyer
16.00	Pawinee Ratabakorn & Uraiwan Tunnukul	
16.20	Anosha Rojanapanich &Prem Thanatripop	
16.40	Pachara Wangmee &Worakarn Jantarasingharn	
17.00	Unnop Panpuang & Saysunee Sangphueak	
18.00	**Dinner**	Restaurant

Day 3 09 May 2018
Venue: Sheraton Milan Malpensa Airport Hotel, Italy

08.30	**Registration open**	Foyer
09.00	**Session 2 – Human capital: educational and managerial issues of formation and development**	
09.00	Pramsuk Huanprapai & Sasinan Prajongjai	
09.20	Ria Mardiana Yusuf	
09.40	Nattaporn Srichana & Warawut Chuenkrut	
10.00	Pordee Sukpun & Paweena Sribunrueng	
10.20	Aekkaphob Intarapoo & Pattiya Traiteepung	
10.45	**Coffee – break**	Foyer
11.00	Bundit Pungnirund	
11.20	Sarawut Yamdee & Supas Amornchantanakorn	
11.40	Mahir Pradana	
12.00	Pimporn Thongmuang	
12.20	Larisa Nevskaya & Svetlana Akhmetova	
12.40	**Lunch**	Restaurant
13.30	**Session 3 – Modern teaching: modern technologies and practical methods**	
13.30	Nuntiya Noichun & Narasak Phunaploy	
13.50	Zhang Li-Ping	
14.10	Watchara Sungkobol & Sasiwimon Maneewong	
14.30	Awad Soliman Keshta	
14.50	Kanpetch Saranontawat & Pimporn Thongmuang	
15.10	Toratane Munegumi	
15.30	**Coffee – break**	Foyer
15.50	Arias Sinthu & Aknarin Piyaphanyamongkol	
16.10	Nutcha Phasuk & Natwalun Wangnil	
16.30	Krit Chaisaengduean, Tospon Pimpa	
16.50	Farangis Saeedi	
17.10	Arunroong Wongkungwan & Sathiya Phunaploy	
18.00	**Dinner**	Restaurant

Day 4 10 May 2018
Venue: Sheraton Milan Malpensa Airport Hotel, Italy

08.30	**Registration open**	Foyer
09.00	**Session 4 – Management in educational institutes: modern issues and future prospects**	
09.00	Pennapha Meeto & Raweewan Khankham	
09.15	Amber Osman & Muhammad Imtiaz Subbani	
09.30	Bundit Phrapratanporn & Kulnidawan Dumkum	
09.45	Vera Gnevasheva	
10.00	Yuttana Rattanasuwan & Piyanun Thanchai	
10.15	Ratanaporn Sukserm & Thidarat Choknakawaro	
10.30	Juan Francisco Aguirre Chavez	
10.45	**Coffee – break**	Foyer
11.00	Supaporn Wimonchailerk & Rutchanewan Panbua	
11.15	Runglaksamee Rodkam & Paphitchaya Silpaksa	
11.30	Vanthangpui Khobung	
11.45	Aina Jacob Kola	
12.00	Paakpoom Klaythong & Patcharida Wisaiket	
12.15	Arun Sumdee & Anutsara Chanprapas	
12.30	**Lunch**	Restaurant
13.30	**Session 5 – Usage of ICT and social networking in educational process**	
13.30	Kiattiphoom Phachuen	
13.50	Chun-Pei Lin	
14.10	Piched Girdwichai	
14.30	Siriporn Meenanan & Naruecha Narapong	
14.50	Atef Abuhmaid	
15.10	Pirawat Chaiyaphoomsakul, Sawitree Charamporn & Apisit Rattanatranurak	
15.30	**Coffee – break**	Foyer
15.50	Nuntiya Noichun	
16.10	Nuntinee Nakdontee & Patompong Punnabhum	
16.30	Sudarat Srima & Krisana Aree	
16.50	Vasyuta Eugenia	
17.10	Grigoryeva Natalya & Kolycheva Zhanna	
17.30	**Dinner**	Restaurant
	Awards and closing ceremony	

LIST OF SESSIONS:

Day 2 Meeting room
14.00-17.30

Session 1 **Environmental education: ways and challenges of implementation**
Chairman: Dr. Jürgen Drissner

1	Sinchai Poolklai Adisak Chuchat	*Suan Sunandha Rajabhat University, Bangkok, Thailand*	Environmental education and behavioral change
2	Jürgen Drissner	*University of Ulm, Germany*	Environmental education outside school: effects of a half-day teaching programme
3	Pattamaporn Kaewkongka Apirati Triyawat	*Suan Sunandha Rajabhat University, Bangkok, Thailand*	"Public-based-learning": environmental controversies for pedagogical purposes
4	Wipada Chaiwchan Kittipat Bualek	*Suan Sunandha Rajabhat University, Bangkok, Thailand*	Considering students' environmental self determination
5	Kvetoslava Rešetová	*Slovak University of Technology in Bratislava, Slovakia*	Publishing opportunities of doctoral candidates
6	Pawinee Ratabakorn Uraiwan Tunnukul	*Suan Sunandha Rajabhat University, Bangkok, Thailand*	Educational environment for teenagers' moral relations development
7	Anosha Rojanapanich Prem Thanatripop	*Suan Sunandha Rajabhat University, Bangkok, Thailand*	Analyzing business factors of students' environmental attitudes
8	Pachara Wangmee Worakarn Jantarasingharn	*Suan Sunandha Rajabhat University, Bangkok, Thailand*	Conceptual model for teaching the relationship of daily life and human environmental impact
9	Unnop Panpuang Saysunee Sangphueak	*Suan Sunandha Rajabhat University, Bangkok, Thailand*	Sustainable development and teaching perspectives

Day 3 Meeting room
09.00-12.30

Session 2 **Human capital: educational and managerial issues of formation and development**

Chairman: Dr. José G. Vargas-Hernández

1	Pramsuk Huanprapai Sasinan Prajongjai *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Social capital and knowledge management in the context of staff empowerment
2	Ria Mardiana Yusuf *Hasanuddin University, Makassar, Indonesia*	The practice of human resource strategic roles by "ulrich" model
3	Nattaporn Srichana Warawut Chuenkrut *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Student's research work as the condition of professional education
4	Pordee Sukpan Paweena Sribunrueng *Suan Sunandha Rajabhat University, Bangkok, Thailand*	University students' entrepreneurial intentions: ways for in-study implementation
5	Aekkaphob Intarapoo Pattiya Traiteepung *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Strengthening the basic competence of sciences for master students
6	Bundit Pungnirund *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Interpersonal intelligence: how gender difference impacts
7	Sarawut Yamdee Supas Amornchantanakorn *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Egocentrism and development of students identity
8	Mahir Pradana *Telkom University, Bandung Indonesia*	Do employees' performances depend on their motivations? (case study at Indonesian National bureau of plantation)
9	Pimporn Thongmuang *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Self-health care behaviors of elderly
10	Larisa Nevskaya Svetlana Akhmetova *Perm National Research Polytechnic University, Russia*	Current trends in the development of innovative activeness of enterprise personnel

Day 3 Meeting room
13.30-17.30

Session 3 **Modern teaching: modern technologies and practical methods**

Chairman: Dr. Bundit Pungnirund

1	Nuntiya Noichun Narasak Phunaploy *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Problem based learning (PBL-civics) model development to improve the motivation and learning outcomes
2	Zhang Li-Ping *Yu Qiu Shanghai University of Engineering Science, Shanghai, China*	Study of cooperative education pattern
3	Watchara Sungkobol Sasiwimon Maneewong *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Analysis of mathematical education on economics specialty
4	Awad Soliman Keshta *Islamic University of Gaza (IUG), Gaza, Palestine*	The effectiveness of a blended learning program on developing palestinian tenth graders english writing skills
5	Kanpetch Saranontawat Pimporn Thongmuang *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Innovative methods of teachers' practice-orientation development
6	Toratane Munegumi *Naruto University of Education, Naruto, Tokushima, Japan*	Considering future directions for the specialized evaluation of educational programs for science teachers
7	Arias Sinthu Aknarin Piyaphanyamongkol *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Dialogue-based teaching model in college English teaching
8	Nutcha Phasuk Natwalun Wangnil *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Business field trips impact on education processes
9	Krit Chaisaengduean Tospon Pimpa *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Project-based hybrid business education of graduate and undergraduate group
10	Farangis Saeedi *Guilan University, Rasht, Iran*	The effect of negotiation on second language acquisition
11	Arunroong Wongkungwan Sathiya Phunaploy *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Environmentors: mentoring at-risk through university partnerships

Day 4 Meeting room

Session 4 **Management in educational institutes: modern issues and future prospects**
09.00-12.30
Chairman: Dr. Muhammad Imtiaz Subhani

1	Pennapha Meeto Raweewan Khankham *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Academic freedom and leadership in modern academic institutions
2	Amber Osman Muhammad Imtiaz Subhani *Iqra University, Karachi, Pakistan*	Misuse of higher education
3	Bundit Phrapratanporn Kulnidawan Dumkum *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Extension analysis of employee management based on social network model
4	Vera Gnevasheva *Moscow University for the Humanities, Moscow, Russia*	Student's view of education as the merit and private economic goods
5	Yuttana Rattanasuwan Piyanun Thanchai *Suan Sunandha Rajabhat University, Bangkok, Thailand*	High school students' conceptions of learning in different domains
6	Ratanaporn Sukserm Thidarat Choknakawaro *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Educational pedagogy for sustainability: developing programs to transform behaviors
7	Juan Francisco Aguirre Chavez *Autonomous University of Chihuahua, Chihuahua, México*	A gender study on college students' academic self-efficacy
8	Supaporn Wimonchailerk Rutchanewan Panbua *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Multi-subject incentive cooperation of students' network entrepreneurial education
9	Runglaksamee Rodkam Paphitchaya Silpaksa *Suan Sunandha Rajabhat University, Bangkok, Thailand*	School-community participation in developing a local sustainability agenda
10	Vanthangpui Khobung *Educational Research and Training NCERT Bhopal, India.*	Tribal self-help groups in Manipur: a gender perspective
11	Aina Jacob Kola *College of Agriculture, Igboora, Oyo State, Nigeria*	Repositioning science education in nigerian colleges of education through public-private partnership (PPP)
12	Paakpoom Klaythong Patcharida Wisaiket *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Vocational education by transferring notions and all-round cultivation
13	Arun Sumdee Anutsara Chanprapas *Suan Sunandha Rajabhat University, Bangkok, Thailand*	The function of physical education for building social values

Day 4 Meeting room

Session 5 **Usage of ICT and social networking in educational process**
13.30-17.30
Chairman: Dr. Atef Abuhmaid

1	Kiattiphoom Phachuen *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Application of classroom assistant software based on Android
2	Chun-Pei Lin *Huaqiao University, Quanzhou, China*	An effect of existing knowledge assets to inbound/outbound disruptive innovation
3	Piched Girdwichai *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Analytical study on improving expertise of university students through innovative training project
4	Siriporn Meenanan Naruecha Narapong *Suan Sunandha Rajabhat University, Bangkok, Thailand*	College students' information quality and study on correspondence and education system in "Internet+" era
5	Atef Abuhmaid *Middle East University, Amman, Jordan*	Information and communication technology integration within the practicum
6	Pirawat Chaiyaphoomsakul Sawitree Charamporn Apisit Rattanatranurak *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Video converter using GPU on web application
7	Nuntiya Noichun *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Applications as IT-element of special disciplines teaching
8	Nuntinee Nakdontee Patompong Punnabhum *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Designing of individual educational path of teacher's professional development in conditions of information educational environment
9	Sudarat Srima Krisana Aree *Suan Sunandha Rajabhat University, Bangkok, Thailand*	Trend of visual communication design education in the cultural and creative industries
10	Natalya Grigoryeva *Southern University (IMBL), Russia* Zhanna Kolycheva *Don State Technical University, Russia*	Taxation and employment: considering relationships and factors of efficiency
11	Vasyuta Eugenia *The Russian Presidential Academy Of National EconomyAnd Public Administration, South Russia Institute of Management, Rostov-on-Don, Russia*	Medical tourism in Russia: growth potential and competitiveness issues

CONCEPTUAL MODEL FOR TEACHING THE RELATIONSHIP OF DAILY LIFE AND HUMAN ENVIRONMENTAL IMPACT

Pachara Wangmee
Worakarn Jantarasingharn

Suan Sunandha Rajabhat University, Bangkok, Thailand

In the general activity of daily life, it is easy to miss our dependency on the Earth's ecology. At the same time that people are living apparently separate from the environment, our impact on the Earth is increasing. This study seeks to understand how teachers can bridge this persistent disconnect of daily life from ecology and human impact. Specifically, this study addresses teachers' use of a conceptual model for teaching ecology and human impact units that link daily life, human impact and ecological function. Thirty-six ninth grade biology teachers implemented curriculum that was grounded in an explicit conceptual model for teaching the relationship between ecological function, human impact, and daily life. Pre and post implementation, teachers completed detailed descriptions of their lesson plans for teaching ecology and human impact topics. Content analysis of teacher lesson plan descriptions shows that teachers have a greater difficulty integrating daily life and human impact into ecological topics than they do in integrating daily life and ecology into human impact topics. This study also documented the difficulty of applying a conceptual model that overtly connects daily life and human impact to ecological function. Despite this, they implementation of curriculum grounded in an explicit conceptual model for linking daily life, human environmental impact and ecology helped teachers articulate those connections in ways that could enable students to understand the unintended consequences of daily life activities on specific ecological function.

Key words: ecological literacy, environmental education, environmental science, science education, human impact, ecological function

Introduction

Whether for the food we eat or the air or water we consume, people, like all things that are alive, interact and depend upon the living and non-living components of the biosphere for survival. Yet in the general activity of daily life, it is easy to miss our dependency on the Earth's ecology. Food purchased from a grocery store, water retrieved from a tap, and air breathed as a matter of course, allow people to live without considering the rest of the world on which we rely. At the same time that people are living apparently separate from the environment, our impact on the Earth is increasing (Miller, 2005). This study seeks to understand how science teachers bridge this persistent disconnect of daily life from ecology and human environmental impact. Specifically, this study addresses teachers' use of a conceptual model for teaching ecology and human environmental impact units that links daily life, human environmental impact and ecological function.

Conceptual Framework

Conceptions of Nature and the Environment Studies of student conceptions of nature, the environment, and human environmental impact consistently show that children understand people to be disconnected from the rest of the living world.

Investigations of student characterizations of nature show that most primary school students view nature as a place without people, where only plants and animals live (Bonnet & Williams, 1998; Littledyke, 2004). Others have documented that both primary and secondary school students see nature as pristine, as areas untouched by people or urban environments (Payne, 1998a; 1998b; Alerby, 2000).

Still other studies reveal student difficulties with picturing the existence of wildlife in urban areas or the built environment (Simmons, 1994; Membiela, Nogueiras & Suarez, 1994). Studies specifically seeking to document student perceptions of the environment have found a similar pattern of separating humans from the environment. A study of environmental survey responses from European students, aged 10-18 indicated that students tend to see humans as disconnected from the environment (Filho, 1996).

Analyses of student responses to the openended prompt, —I think the term/word environment means . … showed that many students view the environment as —something out therel independent from their lives and humanity (Loughland, Reid, & Petocz, 2002). Like earlier studies seeking to characterize student perceptions of nature, Shepardson and colleagues (2007) also found in a study of upper elementary through secondary school students that students view the environment as a setting that contains plants and animals, but that does not contain people.

Analyses of student perceptions of human environmental impact show a similar trend. Tsurusaki and Anderson (2010) found that primary, middle and high school students have difficulty tracing the impact of human activities, in this case the impact of a hamburger supply chain and dishwashing, on the environment. Student concern about the impact of human caused pollution was disproportionally focused on how pollution might harm humans rather than on pollution's impact on other living things (Myer et al., 1999, 2000; Kahn & Friedman, 1995). Additionally, many Texan high school students were found to be unaware of the role of urbanization in habitat and species loss (Miller, 2005).

Finally, survey responses from Australian primary school students show that many children are unfamiliar with their direct dependence on other living things for daily existence. For instance, many children do not know that the milk they consume is produced by cows and that the cotton they wear is from plants (Miller, 2005). Yet not all children see themselves as distinct from the environment or nature. In multiple studies in the same rural region of the United States of Menominee nation and European American conceptualizations of the place of humans in nature, researchers found that adults and children of the Menominee nation were more likely than European Americans to view nature holistically and to be able to make generalizations from animals to people (Bang, Medin, & Atran 2007; Ross, Medin, Coley, & Atran, 2003; Atran, Medin, & Ross, 2004). Importantly, European American children (ages 4-10) justified their inability to make connections from animals to people on the basis that people are not animals. Menominee children were much less likely to use this reasoning. Furthermore, Menominee children of all ages were much more facile at making ecological connections amongst living things, whereas only the very oldest European

American children were able to make these connections (Atran, Medin, & Ross, 2004; Ross, Medin, Coley, & Atran, 2003).

The precociousness that Menominee children demonstrate through their ecological understanding is also mirrored in their early science test scores with 50% proficient in fourth grade as compared to the national average of 29% proficient. Yet additional formal schooling leads to a decline in Menominee science performance, with only 17% proficient in eighth grade, lower than the national average of 27%. School science is not capturing the cultural advantages that Menominee children bring to the science classroom (Bang, Medin, & Atran, 2007). One apparent cultural difference in school learning of ecology is reflected in how elementary school teachers tend to view the environment.

Like many of their students, elementary school teachers in the United States also tend to view people as separate from the environment (Moseley, Desjean-Perrotta, & Utley, 2010). This pattern was also shown for Greek kindergarten teachers who tended to view nature romantically and the environment as lacking complexity (Flogaitis & Agelidou, 2003).

Furthermore, a study of Slovenian biology teachers showed that they too viewed nature as a place where people are largely absent and the environment as a place dominated by human activity such as pollution and environmental degradation (Torkar, 2009). If teachers have difficulty connecting people to the environment and nature, then it is likely that school children will develop this same difficulty.

In an effort to explicitly link daily life to ecology, this author developed a conceptual model for bringing daily life, human environmental impact, and ecological function into one study topic in the secondary school classroom setting (Wyner & Desalle, 2010). The goal of this model, developed as an NSF funded initiative and called Ecology Disrupted, is for students to learn about the importance and complexity of normal ecological function, by studying the environmental issues that result when daily life actions disrupt them.

This model uses the same intellectual approach that the field of genetics uses to understand gene function. Simply put, geneticists learn gene function by studying the changes in appearance that result from mutations that disrupt normal gene function. In the Ecology Disrupted model, biology high school students learn the complexity of functioning ecosystems by studying the environmental issues that result from daily life actions that disrupt normal ecological function. Using ecological disruption to mediate the relationship between environmental issues and daily life, unlocks the ecological complexity that connects daily life to environmental issues and shows students the important role that ecology plays in their lives.

Methodology Demographics

In total, data were collected from 36 biology teachers representing nineteen public Bangkok high schools. The average teacher had 11 years of experience, with a median of 8 years teaching. Teacher experience ranged from a high of 33 years teaching science to a low of 3 years teaching. Six teacher participants taught for greater than 20 years and six teachers taught for fewer than five years. All teacher participants were state certified and all but five were certified to teach biology. Of the five teachers who were not certified in biology, two teachers were certified to teach special education and the other three teachers had either a major or minor in a biological discipline. All of the teacher participants had master's degrees

and one teacher had a Ph.D. in a biological field. More participants were female (N=23) than male (N=13).

Research Design

In 2016, 36 ninth grade biology teachers implemented two case studies (13 class lessons total) that were grounded in the Ecology Disrupted conceptual model for teaching how ecological function, human environmental impact, and daily life are connected. One case study focused on the consequences of salting roads for safe travel on the non-living and living ecosystem components. The other unit focused on the consequences of rapid highway travel on genetic diversity and breeding amongst different bighorn sheep populations in the desert habitat.

In 2015, prior to implementation, teachers completed questionnaires and surveys about their lesson plans for teaching ecology and human impact topics and about their attitudes and experience integrating these topics.

In January 2016, teachers participated in a oneday workshop in which they learned how to enact the curriculum and they completed an exercise in which they developed new Ecology Disruptedl examples from an extensive online repository of media about published scientific research on environmental issues. Following the workshop, teachers modified their initial lesson plans for teaching ecology and human impact topics. Then teachers implemented the 13 lesson Ecology Disrupted case studies in their classrooms.

Conclusion

Initial Teacher Responses

Initial teacher responses to lesson planning questions show the difficulty of overtly connecting daily life and human environmental impact to ecological function. When asked to describe how daily life impacts ecology, most teachers did not connect daily life and human impact to ecological function in their initial responses. Instead, teachers defaulted to individually describing daily life, human impact, or ecological function. Few teachers linked these concepts together to build understanding of how each concept is related and to reciprocally inform understanding of all three concepts.

Teacher responses to the question asking them to link daily life and human impact to food webs show a similar pattern, although more teachers successfully linked human impact to food web or food chain function. Given a choice, teachers were more comfortable linking daily life experience to food webs, rather than linking the impact of daily life to food webs or chains. Analysis of initial teacher responses may be limited by the tendency of teachers to use shorthand to describe their lessons.

Teachers were asked to elaborate on unclear initial responses in an effort to limit this bias. Teacher initial responses were also significantly longer than combined post workshop and post implementation responses. Initial responses may also have been affected by a tendency to understand daily life impacts and human impacts as interchangeable concepts and by a predisposition to view environmental impact as an identical concept to ecological impact. This interpretation is supported by the fact that teachers reported human impact examples in place of daily life impact examples in their initial responses to questions asking about their daily life impacts on ecology and by the high levels of human impact integration

that teachers self-reported in their ecology section of their curriculum that were not borne out in their ecology lesson plan descriptions.

Regardless of the cause for initial teacher difficulty in explicitly linking ecological function to daily life and human impact, imprecise language hindered their ability to use these three concepts to inform one another. Chi square comparisons of teacher responses to the different lesson planning questions show that linking daily life to human impact is easier than linking daily life to ecological function, as significantly more teachers mentioned daily life in the pre and post implementation responses to the pollution question than they did for their pre and post implementation responses to the two ecology questions (general ecology and food webs).

Additionally, significantly more teachers were able to identify higher order relationships between daily life, ecology and human impact in their pre and post-implementation responses to the pollution question than they did for the two ecology questions. These findings are also supported by the significantly higher levels of integration of ecology into their human impact curriculum that teachers self-reported than the level of integration for human impact into their ecology curriculum that teachers reported.

Importantly, teacher initial lesson plan responses indicate that teachers show a greater difficulty integrating daily life and human impact into ecological topics than they do in integrating daily life and ecology into human impact topics. As a result, ecological topics are more likely to be viewed as disconnected from daily life than human environmental impact topics. Lesson plan responses also show that teachers further distance daily life from ecological function by discussing human environmental impact in place of discussing daily life impacts.

Teacher Growth

The ability of teachers to connect human impact and daily life to ecological function grew through using this curriculum. Post implementation, most teachers changed their lessons to add daily life impacts, human environmental impact topics, or additional ecological functions to their lessons and almost 70% of all teachers modified their initial typical ecology lessons to connect daily life to human environmental impact or to connect daily life impacts or human environmental impacts to ecological function. More teachers successfully modified their food web or chain lessons. After implementation, almost every teacher modified their food web or food chain lesson plans to connect human environmental impact to food web or chain function and just under half of all teachers' post-implementation responses also connected daily life impacts to food web or chain function. Perhaps teachers found lesson plan reporting to be easier for a predefined topic like food webs than they did for reporting of —typicall unspecified ecological lesson plans.

Food webs or chains might also be particularly suitable topics for making daily life and human impact connections due to the centrality of human impact themes like biomagnification in the state mandated ninth grade biology curriculum.

Yet, impacting these teachers is particularly important, for a primary goal of this curriculum is to improve student learning of ecological function and how it connects to daily life and human environmental impact. Without teacher understanding of the Ecology Disrupted conceptual model, this curriculum will be unlikely to help student learning. This study documented the difficulty of applying a conceptual model that overtly connects daily life and human environmental impact to ecological function.

Despite this, the implementation by teachers of curriculum grounded in the Ecology isrupted conceptual model helped them articulate that model. In the words of the teachers ho implemented this curriculum, making the connections between daily life, human vironmental impact and ecological function allowed their students to see that —their tions have consequencesl and brought to their classrooms an ecological —lensl and -languagel for understanding —environmental impact.l

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ANALYZING BUSINESS FACTORS OF STUDENTS' ENVIRONMENTAL ATTITUDES

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The purpose of this study is to investigate the environmental attitudes (EA) in the population of 15-year-old Thai students and, to check if the Thai student population presents similar EA categorization as described in the different models in the literature (e.g. the Model of Ecological Values, Wiseman & Bogner 2003). The second aim of this study is to identify the different factors influencing students' EA. We analyse the results of the questionnaire-based Relevance of Science Education The Model of Ecological Values (2-MEV) is defined with two orthogonal dimensions, Preservation and Utilization. Ecological Values are determined according to an individual's position on two orthogonal dimensions, one dimension reflecting conservation and protection of the environment (Preservation) and another dimension reflecting the utilization of natural resources (Utilization). Our results show links between students environmental attitudes and students' level of interest in learning about specific environmental topics, their practice of extra-curricular activities linked to nature and students' value priorities in different dimensions of their future work. We discuss the implications of these results for the teaching of environmental issues, and for instance, we argue that EA concept could be explained to fifteen-year-old students to encourage them to take into account the diversity of views towards the environment of others, and to position themselves in this diversity of attitudes.

Key words: environmental attitudes, extra-curricular activities, value priorities, largescale survey, interests in science topics

Introduction

Developing students' knowledge and awareness of environmental issues has never been such an important goal of science education as now. But this teaching must be based on knowledge of students' attitudes to the issue of environmental protection (Schreiner & Sjoberg, 2005). Diversity in human traditions, religious and spiritual approaches, and philosophical directions may lead to different views of nature and the environment, and consequently to diverse motivation and attitudes towards the environment (Cooper & Palmer, 1998).

Only after understanding the relationships between the attitudes that people have towards the environment and the factors that influence these attitudes, will we be able to propose a way of teaching that could have a chance of improving the public's attitudes towards nature.

The main purpose of this study is to investigate the environmental attitudes in the population of 15-year-old Thai students and the possible links between students' attitudes towards the environment and other factors, such as students' interest in learning different science-related topics, their practice of specific extra-curricular activities, and their priorities in different dimensions of their future job.

Although the ROSE questionnaire is not specifically designed to measure Environmental Attitudes, this questionnaire has the rare advantage of gathering information about students' opinions of school science and science-related issues in general, including environmental issues, and at the same time, several other factors that have a bearing on their attitudes to science and technology and their motivation to learn science and technology. We used this international survey in Thailand.

Review of Literature

First, we propose a brief review of Environmental Attitudes (EA) assessments in the literature. Our aim is to check if the French student population presents similar EA categorization as described in the different models in the literature. In the second part, we present results from previous studies about factors influencing EA, as this is the aim of this present work.

Environmental Attitudes

EA have been defined as "the collection of beliefs, affect, and behavioural intentions a person holds regarding environmentally related activities or issues" (Schultz et al., 2004). Although, this three-component model remains the traditional view of attitude structure, new theoretical approaches prefer to conceptualise attitudes as evaluative tendencies that can both be inferred from and have an influence on beliefs, affect, and behaviour (Milfont & Duckitt, 2010). There are hundreds of EA (and the related ideas of concern, beliefs, worldviews, values, perception, awareness, etc.) measures available based on different conceptual and theoretical frameworks (see review in Milfont & Duckitt, 2010).

The first psychometrically and conceptually sophisticated instrument to assess pro-environmental worldviews is the New Ecological Paradigm (NEP) scale developed and revised by Dunlap et al. (1978, 2000). The NEP scale proposes EA view as an unidimensional construct ranging from the unconcerned about the environment at the low end to the concerned at the high end. In this view, an individual can either have a pro-environmental or anti-environmental perspective but not both.

Thompson and Barton (1994) have categorized EA as rooted either in a concern for humans (Anthropocentrism) or living things (Ecocentrism). In another perspective, Schultz (2001) proposed three correlated factors of egoistic (concern for the self), altruistic (other people), and biospheric concerns. Wiseman and Bogner (2003) pointed out a problem inherent in the common use of environmental perception and attitude instrument measuring first-order factors only.

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