



***JSPS Core-to-Core Programme
Formation of International Center of Excellence
to Promote Teacher Education on ESD***

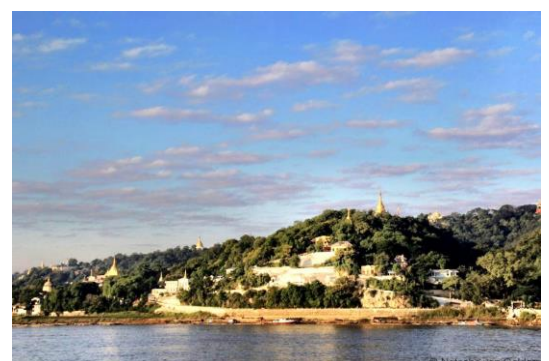
**The 6th Meeting of the Asian Network
to Promote Teacher Education on ESD**

Meeting Abstracts

Yangon University of Education

Yangon, Myanmar

July 9-11, 2019



Welcome Message

Dear Professors, colleagues and distinguished guest,

On behalf of the Yangon University of Education, I am delighted to welcome all the experts and academics from around the Asia countries to Yangon, Myanmar for the 6th Meeting of the Asian Network to Promote Teacher Education on ESD that will take place from July 9-11, 2019. While much encouragement and progress is going on these days in the field of promoting teacher education on education for sustainable development (ESD).

Recently, our government has ambitious plans to reform education from top to bottom. The rote learning of facts is no longer seen as the best way to prepare the country's young people for the future. Major shifts are required in the coming years to transform the national education system and ensure that all students progress through the education cycle, achieving quality learning standards and fulfill their career and lifelong learning goals and aspirations, the Ministry of Education wrote in its introduction to NESP. Therefore we have many researchers and scientists who focus their research works on the method of improvement of teachers understanding on sustainable development concepts through pre-service and in-service teacher training, as well as the conduction of ESD into lesson and training in future.

As the local organizer, I want to welcome you to the wonderful, dynamic and international city of Yangon. A sincere thank you to the organizing committee for selecting high opportunity to our Yangon University of Education, Myanmar to host this landmark event!

Dr. Kay Thwe Hlaing
Pro-Rector
Yangon University of Education
Myanmar

Welcome Message

Dear colleges and guests,

I am very glad to see the successful launch of the 6th Meeting of the Asian Network to Promote Teacher Education on Education for Sustainable Development (ESD). The meeting, supported by the Japan Society for the Promotion of Science (JSPS), will be held at Yangon University of Education, from July 9th to 11th, 2019. On behalf of all participants, I would like to thank especially Rector Dr. Aye Aye Myint, Pro-Rector Dr. Pyone Pyone Aung and Pro-Rector Dr. Kay Thwe Hlaing, at Yangon University of Education, Rector Dr. Saw Pyone Naing, at Sagaing University of Education, and the meeting officers for inviting us and welcoming us to this august international forum.

The purpose of this meeting is to discuss the integration of teacher education with ESD and the development of training programmes for teachers. The members of our joint research project from Asian seven countries, China, Indonesia, Japan, Lao PDR, Mongolia, Myanmar and Republic of Korea, have developed some guidelines and recommendations to reorient teacher education in Asia to address sustainability. It is hoped that the meeting will both encourage international cooperation and stimulate researchers to conduct research on ESD for achieving the target 4.7 of the United Nations Sustainable Development Goals (SDGs).

I deeply appreciate your coming to share with us this unique, memorable experience in Yangon, Myanmar.

Sincerely,



Hiroki Fujii

UNESCO Chair on Research and Education for Sustainable Development

Director, Okayama University ESD Promotion Centre

Coordinator of the JSPS Core-to-Core Programme "Formation of International Center of Excellence to Promote Teacher Education on ESD"

Programme Schedule

Date: 9-11 July 2019

Venue: Yangon University of Education, Yangon, Myanmar

Day 1, 9 July 2019 (Tuesday)	
8:30-9:10	<p>Opening</p> <ul style="list-style-type: none"> - Opening Remarks by Pro-Rector Dr. Kay Thwe Hlaing, Yangon University of Education, Myanmar - Welcome Speech by Rector Dr. Saw Pyone Naing, Sagaing University of Education, Myanmar - Introduction of participants
9:10-9:40	<p>Agenda 1: Introduction</p> <ul style="list-style-type: none"> - Progress from 2017 to 2018 of the JSPS Core-to-Core Programme “Formation of International Centre of Excellence to Promote Teacher Education on ESD” Hiroki Fujii and Toshinori Kuwabara, Okayama University, Japan
9:40-10:00	<i>Coffee/tea break</i>
10:00-12:00	<p>Agenda 2: Progress reports from teacher education institutions</p> <ul style="list-style-type: none"> - The Profile of ESD on Curriculum Implementation in Junior and Senior High School Level in Indonesia Wijaya, A. F. C. et al., Indonesia University of Education, Indonesia - Introducing Self-Study of Teacher Education Practices (S-STEP) for ESD Hironori Sasaki, Chugokugakuen University, Japan - A Consideration about the Teacher Training targeted for the Recent Trend of “ESD for SDGs” Tomonori Ichinose, Miyagi University of Education, Japan - Teaching Elementary Pupils about Alien Species Toru Doi et al., University of Toyama, Japan - Development of Frameworks for Building Teachers’ Competences on Education for Sustainable Development (ESD) at Bankeun Teacher College (Lao PDR) Sompong Siboualipha, Bankeun Teacher College, Lao PDR
12:00-13:00	<i>Lunch</i>
13:00-14:40	<p>Agenda 3: Progress reports from teacher education institutions (continued)</p> <ul style="list-style-type: none"> - Implementing Teacher Competency Framework in the Professional University Pre-service Teacher Training program Dulguun Jalgalsaikhan et al., National University of Mongolia, Mongolia - Introduction of Education for Sustainable Development (ESD) Concept to In-service Science Teachers San Aye and San San Maw, Sagaing University of Education, Myanmar - A Case of Environmental Education for Sustainability for Elementary Teachers in Graduate Studies Sun-Kyung Lee, Cheongju National University of Education, Republic of Korea
14:40-15:00	<i>Coffee/tea break</i>
15:00-16:30	<p>Agenda 4: Discussion to deepen one’s understanding on a draft of Asia-Pacific ESD teacher competency framework in order to adapt it for each subject, e.g. science education and social science education.</p> <ul style="list-style-type: none"> - Group work - Reports of the group work to the plenary - Synthesis
	Welcome function

Day 2, 10 July 2019 (Wednesday)	
8:30-9:45	Agenda 5: Discussion to make blue prints of ESD teacher education programme for each subject, based on Asia-Pacific ESD teacher competency framework - Group work
9:45-10:00	<i>Coffee/tea break</i>
10:00-12:00	Agenda 6: Discussion to make blue prints of ESD teacher education programme for each subject, based on Asia-Pacific ESD teacher competency framework (continued) - Group work - Reports of the group work to the plenary - Synthesis
12:00-13:00	<i>Lunch</i>
13:00-16:30	Special session organized by Yangon University of Education - Myanmar's Experience on Using the East Asia-Pacific Early Child Development (EAP-ECD) Scales Naing Naing Maw, Yangon University of Education, Myanmar - Teacher Competency Standard Framework for Myanmar Khin Mar Khaing, Yangon University of Education, Myanmar - Educational Leadership and Management for ESD Khin Mar Ni, Yangon University of Education, Myanmar - Gender Awareness of Postgraduate Students from Sagaing University of Education Myo Ko Aung, Sagaing University of Education, Myanmar Information session "Study in Japan" - Asami Torigoe, Okayama University Japan Educational Information Centre, Japan Closing - Closing Remarks by Pro-Rector Dr. Kay Thwe Hlaing, Yangon University of Education, Myanmar - Vote of thanks by Vice-Dean Dr. Toshinori Kuwabara, Graduate School of Education, Okayama University
Day 3, 11 July 2019 (Thursday)	
8:30-16:30	Agenda 7: Observation of pre-service teacher training course on ESD Agenda 8: Wrap up for the core-to-core programmes members

Abstracts

Introduction

Progress from 2017 to 2018 of the JSPS Core-to-Core Programme “Formation of International Centre of Excellence to Promote Teacher Education on ESD”

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Education for Sustainable Development (ESD) occupies a prominent place in the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs) adopted by the United Nations (UN). It is “a vital means of implementation for sustainable development” and “a key enabler” of all the SDGs, as affirmed by the UN General Assembly in its resolution 72/222. Teachers have a crucial role to play in this global pursuit of sustainable development through education. As the UN Global Action Programme on ESD recognizes, teachers are “one of the most important levers to foster educational change” for sustainable development. They can act as key change agents and facilitate learning for sustainable development.

Recognizing the critical importance of teachers in the context of the 2030 Agenda for Sustainable Development, Okayama University, which holds the only UNITWIN/UNESCO chair programme on ESD in Asian countries, launched the core-to-core programme (2017–2019) “Formation of International Center of Excellence to Promote Teacher Education on ESD” with an aim to bring together teacher education institutions from China, Indonesia, Japan, Lao PDR, Mongolia, Myanmar and Republic of Korea. The institutions have been tackling to jointly develop teacher training programmes on ESD based on lesson study, create academic networks for ESD and foster future generations of ESD researchers.

Building on the above achievements, Okayama University organized, in cooperation with UNESCO Bangkok, the Asia-Pacific Cultural Centre for UNESCO (ACCU), the International Network of Teacher Education Institutions (INTEI), Okayama City and RCE Okayama, “the Asia-Pacific Regional Meeting on Teacher Education for ESD: Towards Achieving the Sustainable Development Goals through Education” in Okayama, Japan in November 2018. The meeting brought together leaders of teacher education institutions from 16 countries in the Asia-Pacific region, and yielded a draft Asia-Pacific framework for ESD teacher competencies, as well as action plans for participating institutions to integrate ESD in their respective teacher education programmes. Through the implementation of the action plans, the draft framework as a guide to reorienting teacher education in Asia-Pacific to address sustainability will be reviewed, revised and finalized.

Progress Report 1

The Profile of ESD on Curriculum Implementation in Junior and Senior High School Level in Indonesia

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Indonesia's education, must admit, student's learning achievement is one of the crucial aspect need to be improve and develop through the learning process now a day, the fact that meaningful learning process is the key of the situation (Arianto & Rubini, 2016; Bilgin & Karaduman, 2005; Rustaman, 2003). Furthermore, Education for Sustainable Development (ESD) can be infused into the curriculum through three different strategies, which are, ESD on Curriculum or ESD provides context for the teaching and learning process, ESD in Curriculum or ESD becomes a part of the subject content and context, and Curriculum of ESD or ESD as a subject it selves (Wijaya, 2018). Therefore, the research aims are to describe and analyze the implementation of ESD on Curriculum in junior and senior high school effects towards students' cognitive achievement and sustainability awareness, and also prospective teacher students' perception. Utilizing mixed method research, this study probes 156 junior and senior high school students from five different schools and five

prospective teacher student through science teaching and learning activities. There are three points of view on the result: students' cognitive achievement, sustainability awareness, and perception on preparing and infusing ESD on the curriculum. The first result revealed that overall the students' cognitive achievement profile improved significantly after the implementation of ESD on science curriculum in junior and senior high school level. Secondly, the students' sustainability awareness profile on the implementation of ESD on science curriculum with the dominant of hands-on teaching and learning activities achieved the highest level of awareness for all of the aspects while the less dominant of hands-on teaching and learning activities only achieved the highest level of awareness on emotional and behavioral aspects. Thirdly, perceptions of the prospective teacher students' toward ESD on science curriculum implementation in junior and senior high school level, in general, are on the Organization stage and the Interpretation stage which mean developed well through the implementation process.

Progress Report 2

Introducing Self-Study of Teacher Education Practices (S-STEP) for ESD

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The final report on the Project " the Asia-Pacific Regional Meeting on Teacher Education for ESD: Towards Achieving the Sustainable Development Goals through Education" was released in April 2019. This report shows the outputs of the ESD teacher competency framework which was elaborated on during the meeting. The participants that discussed about the ESD teacher competency framework ranged from people in senior management positions to those in practical teacher training levels of education institutions that were either active or that were interested in ESD. The participants are referred to as teacher educators of ESD. It is crucial for the teacher educators to elaborate the ESD teacher competency framework. On the other hand, who will discuss about a competency framework of the teacher educators? I believe that not only the ESD teacher but also the ESD teacher educators should develop their professional capability as teacher educators. I recommend the "Self-Study of Teacher Education Practices (S-STEP)" methodology to help them develop it.

S-STEP, or self-study, is a genre of educational research related to examining and improving the relationship between teaching and learning in teacher education contexts. Self-study is a qualitative research methodology that shares similarities with practitioner research, action research, and reflective practice. The teacher educator him/herself is both the researcher and the main focus of the study. Self-study researchers use their experiences as a resource for their research and problematize their taken for granted beliefs and practices about teaching and learning with the goal of reframing their beliefs and/or practice (Feldman, 2002). Self-study focuses on the acquisition and development of teacher educators' knowledge of practice and clarifies the knowledge enhance learning and teaching about teaching. The process of knowledge development in self-study is initiated through the teacher educator's capacity and willingness. (Berry,2014). Self-study is not done in isolation, but rather requires collaboration for building new understanding through dialogue and validation for findings. Self-study must involve collaboration and "critical friends" or trusted colleagues who provide alternative perspectives for reframing, support, and validation (LaBoskey, 2004). Therefore, self-study requires openness and vulnerability since the focus is on the self (Samaras & Freese, 2009).

Self-study emerged as an organized field of research in the 1990s and was formalized with the founding of the Self-Study of Teaching and Teacher Education Practices (S-STEP) Special Interest Group (SIG) of the American Educational Research Association (AERA) in 1993. Since that time, self-study has acquired a scholarly and organizational presence in the international teacher education community and is recognized as a bona fide genre of research and topic of interest in teacher education practice and research. The first Castle Conference sponsored by the S-STEP SIG held in East Sussex, England in 1996. The Castle Conference serves as a valuable forum for bringing researchers together to dialogue, to ask probing questions, to make their knowledge public and open for critique. It has been held biannually since the first conference.

I believe that self-study might be applied as a methodology to develop a teacher educator's capability for ESD. Hence, I

introduce the S-STEP as well as share the progress of my self-study in this presentation.

Progress Report 3

A Consideration about the Teacher Training targeted for the Recent Trend of “ESD for SDGs”

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Miyagi University of Education (MUE) is one of Japan's 11 national colleges of education chartered in 1965. MUE now serves as vital global hub for institutes of higher learning in the Tohoku (northeastern) region with active involvement as member in UNESCO Associated School project, United Nations University's RCE (Regional Centres of Expertise) Greater Sendai Chapter, and ProSPER.Net, to address global challenges through Education for Sustainable Development (ESD).

The SDGs Goal 11. (Make cities and human settlements inclusive, safe, resilient and sustainable) setting up the Indicator 11.b.1 mentioned; Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030.

Although MUE has been actively promoting DRR after the 2011 Great East Japan Earthquake hit its region, such as requiring all pre-service students to take a one credit (30 hour) mandatory basic DRR education course, the University takes further action to play national and global roles in promoting DRR through school education. 311 Disaster Risk Reduction Learning Institute for Educators (DRR-LIFE) is newly established recently as MUE's campus-wide research and training institute. Based on the experience and lessons derived from 2011 disaster, the Institute serves as a national hub where pre-service and in-serve teachers learn about the past disasters and promote disaster risk reduction (DRR) education for future generations to acquire knowledge and skills to protect own lives and survive together.

A variety of empirical research is conducted for the effective implementation of DRR, and DRR trainings and workshops are provided in collaborations with national and global partners. Some of the programs developed by the Institute include 1) passing on the lessons from past disaster experience at school to the next generations and other areas, 2) research on the school-based DRR education and school safety, 3) Enlightenment of DRR for expected Nankai Trough and Tokyo earthquakes areas, 4) in-service training in the disaster-hit area including disaster remains and memorial facilities in Tohoku, 5) assisting students' active learning and research related to ESD- DRR and 6) assisting student tutoring volunteer activities in disaster-hit areas.

Progress Report 4

Teaching Elementary Pupils about Alien Species

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Biodiversity is the foundation of our lives. However, it is threatened by invasive alien species (referred to in this paper as IAS). Various studies have examined how best to teach pupils about biodiversity conservation and its importance (e.g. Songer, Kelcey, & Gotwals, 2009; Schönfelder & Bogner, 2017). One of the serious threats to biodiversity are IAS. These are now endemic across the world. However, only a few studies have focused specifically on IAS (e.g. Schreck Reis, Marchante, Freitas, & Marchante, 2013; Umezumi, Kawai, Fujii, & Doi, 2017). More research and groundwork are needed in order to expand the literature on this subject. One of the causes of the presence of IAS in an environment is that people release alien species outdoors without enough consideration. Therefore, it is necessary to develop a programme to change people's beliefs and behaviours regarding alien species. However, there are no studies which have focused specifically on how to change these beliefs and behaviours. Especially in Japan, most pupils do not know enough about alien species (Doi, & Hayashi, 2015). Moreover, the problem with alien species is that humans cannot control their population. So, we

developed and evaluated a model lesson plan to improve elementary pupils' beliefs and behaviours regarding alien species.

Based on previous works, we established the following lesson aims: (1) Pupils have a correct understanding of species from foreign countries (hereafter 'alien species'); and (2) Pupils know how to properly interact with alien species. Based on these aims, we developed a 90-minute lesson. We then conducted lessons with 148 6th-grade elementary Japanese pupils in November–December 2018.

Development of lesson plan: First, pupils were asked to choose an alien species from an assortment of pictures. These included both species introduced to Japan in the ancient era (e.g. cucumber, cat) or more recently (e.g. strawberry, pill-bug). Next, pupils listened to a lecture on the history of various alien species: how they got to Japan, where they live now, and how they are used. We then asked pupils to predict what might have happened after 17 mongooses were introduced on a small island (Okinawa) in order to prey upon poisonous snakes (this discussion included individual reflection, group discussion, and a class-wide sharing of ideas). We then informed the pupils about the results of that example: unexpectedly, the mongooses destroyed the native ecosystem, and the Japanese government had to step in to preserve the habitat with a large amount of public funds for a project that is still ongoing. We further told the pupils about the largemouth bass intentionally introduced in a single lake so that residents could fish there, but which now exists in almost all Japanese lakes and ponds, and they are destroying the native ecosystems. We explained to pupils why the largemouth bass is not a problematic species in its place of origin and asked them to discuss the differences between invasive and non-problematic creatures. After the lessons, pupils were asked how they will interact with alien species. All lessons were interactive, and the lessons about the mongoose and largemouth bass were narrative as well.

Results: We found that during the lessons, many pupils' image of alien species changed from one-dimensional to multi-dimensional. In addition, after the lessons, many pupils thought it important to properly manage alien species. These results suggest that the lessons can enhance pupils' understanding of, and help form proper attitudes toward, alien species. I will describe the details on the day.

Progress Report 5

Development of Frameworks for Building Teachers' Competences on Education for Sustainable Development (ESD) at Bankeun Teacher College (Lao PDR)

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Lao PDR is a rapid socio-economic development through the expansion of large-scale development; thus education strategies have developed aiming at providing people with environmental knowledge and skills, influence their positive attitudes and engagement in the preservation of the natural resources and environment. Bankeun Teacher College (BTC) is an institution that produces in-service teachers for kindergartens, primary and secondary school teachers. One main issue of the college is that considering how to prepare learners response with the changing of environment, social and economic through lesson learned.

According to concepts on ESD, re-orient existing curricular towards sustainability involves rethinking what is taught and how it is taught; therefore, frameworks of building competences on ESD have been made the first time for Bankeun Teacher college. The CIPP model was applied as an overall framework to integrate concepts of sustainably into education at BTC in 2016-2018. In the Context (C), were firstly questioned to access the respondents' understanding of and attitude towards ESD. Later, issued analysis and needed of competences were presented by the respondents.

Input (I): All related: concepts, components, competences, curriculum analysis, and integration of ESD were presented. Competencies on ESD for educator was studied adapted from CSCT framework. Represents played the roles and find out the competences for educators in ESD by creation of diagrams (learning to know, learning to do, learning to live together, and learning to be were included). For the integration of ESD, the integrated context tool (UNESCO, 2010) was used. In this tool, represents focused on the curriculum level; and integrated in order to 1) ESD and education quality concerns, 2)

how can ESD support improved teaching-learning.

Process (P): Respondents analyzed and mapped the existing curriculum, developed and conducted lessons. Concepts were integrated into curriculum using a framework that adapted from Schreiber and Siegel (2016) and UNESCO MGIEP (2017). From this framework, respondents: 1) mapped an existing curriculum, 2) identified and associated issues with curriculum requirements, 3) connected the identified issues with learning outcomes, and 4) identified curriculum opportunities for embedding ESD and demonstrated lessons.

Product (P): Findings of each activity were recorded using observation sheets. The pre-test and post-test were compared. We found that respondents have improved knowledge and attitude towards ESD. Also, all lessons were refined and feedback by the respondents and observers. This, they have improved skills of observation, evaluation and feedback together to refine each lesson. At the rest of program, a post assessment was implemented to finding out what benefit and improvement of the programs.

In conclusion, the most successful competences that benefit to the respondents are: 1) the capacity to critical thinking and problem solving, 2) integration of sustainable development into education (curriculum), and 3) improving quality of teaching-learning by using ESD to support.

Progress Report 6

Implementing Teacher Competency Framework in the Professional University Pre-service Teacher Training program

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The activity to implement the sustainable development educational principles is being implemented in the educational sector of Mongolia. Under this direction, there is a need to define the teacher competency framework of basic policies of pre-service teacher training program of the teachers of the physics of National University of Mongolia and Mongolian National University of Education. As a result, it is necessary to have an operational guidance to maintain the education to give necessary thinking and skills to the students studying in compliance with the curriculum.

This time, we have aimed to introduce the results of basic study done in this direction:

1. Define the basic policies of pre-service teacher training program teacher competency framework of two universities that prepare the teachers of physics in the country's level.
2. Organize the project based learning and event based learning because students must know that there are lots of challenges to be resolved by the humans and in order to make achievements, they shall understand that people must change the thinking and the actions. People of this generation are responsible for the next generation. The people of this generation have formulated the operational framework on basis of following two principles in order to develop an activity to remove the difference.
 - The coherence principle: consider the social, economic, political and ecological goals as the integral.
 - The participation principle: different players such as economic, scientific or social groups or individuals make strong participation in order to develop and implement the sustainability strategy.

Progress Report 7

Introduction of Education for Sustainable Development (ESD) Concept to In-service Science Teachers

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Education for Sustainable Development (ESD) is being implemented around the world under UNESCO's leading.

Okayama University is a key member and it launched the core-to-core programme “Formation of International Center of Excellence to Promote Teacher Education on ESD”. Sagaing University of Education, Myanmar is one of the members of this programme to participate in developing teacher training programme on ESD based on Lesson Study. After being a member, Sagaing University of Education initiated the Project “Introduction of Education for Sustainable Development (ESD) Concept to In-service Science Teachers”.

Firstly, baseline survey entitled “In-service Teachers’ Perception towards Education for Sustainable Development (ESD) in Myanmar” was conducted with 248 lower secondary school science teachers of thirty schools in Sagaing Township. It intended to examine the teachers’ level of ESD awareness and knowledge, their attitude towards ESD and their willing to adopt ESD in their classroom setting. Baseline survey results indicated the teachers’ inadequate ESD knowledge and skills. Therefore, a 3 day-workshop was held with twenty voluntary participants, lower secondary science teachers, to introduce the themes of ESD and how we can integrate ESD concept in science lessons. This workshop could make the participants interested in ESD and more understanding to ESD concepts, and willing to introduce the integration of ESD in science lesson through Lesson Study.

Based on the workshop experience, we decided to practice the lesson study as the school-based professional development. We conducted the research “Integration of Education for Sustainable Development into Middle School Science Teaching through Lesson Study”. Four teacher educators from Sagaing University of Education and Sixteen middle school teachers from four basic education schools in Sagaing Township participated in the study. Using adapted Dudley (2014)’ lesson study cycle process, lesson study for science lessons from Grade six and Grade eight science textbooks was conducted. It took two weeks. Results of the initiated lesson study significantly indicated that there are improvements of science teaching learning process in terms of teachers’ content knowledge, teaching methodology, and student achievement. As part of participating in interactive lesson study cycles, teachers became more aware of ESD concepts in science lessons and began openly reflecting on students’ participation around science activities during their post-lesson discussions. Although lesson study improves teachers’ professional development with teacher collaboration and student achievement, the teachers are still unfamiliar with ESD themes and they need to understand ESD concepts more clearly. Moreover, this study indicated that teachers could integrate ESD concepts in the science lessons through Lesson Study. However, integration of ESD concepts into science lessons is a difficult task for teachers and there are many challenges for implementing the integration of ESD into science teaching.

Progress Report 8

A Case of Environmental Education for Sustainability for Elementary Teachers in Graduate Studies

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The quality of education does not exceed the quality of teachers. The competences of teachers to understand education for sustainable development and including it in their teaching are the key to activate and mainstream education for sustainable development in schools. Teacher education includes two forms: pre-service and in-service teacher education. In particular, for in-service teacher education, the process of planning, implementing and reflecting education for sustainable development is crucial. This study aims to find out the implications of teacher education for sustainable development through the process of environmental education for sustainability in graduate school of teacher training university.

The purpose of this course titled ‘Theory and Practice of environmental education in primary schools’ is to cultivate teachers’ understanding and competences for environmental education and education for sustainable development in primary school level. The environmental education in this course means not only the narrow meaning of environmental education, but also its extended meaning, which allows exploring the complexity of real world issues through environmental education and leads to cultivate competences to prepare for sustainable society and the future.

Since most of the teachers who attend this course have not taken proper environmental education in their undergraduate studies, they learn the concept, history and development process, and teaching-learning-evaluation methodology of environmental education and education for sustainable development in the beginning. After the theoretical learning,

teachers explore the complexity of the issue, understand biodiversity and cultural diversity, and feel the sense of place and importance of local community through a small project of action research. Energy and climate change, local food and food mileage issue are other themes for them to deal with in the course. Many issues and themes are dealt in diverse pedagogy, and most popular ways are lesson planning and class critique, the Korean style of lesson study, after watching a couple of classes by other teachers. Learning in this course often leads to small project with primary students in the classroom practices and bigger projects including master thesis, which will contribute to students' participation and lifelong learning.



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