#### The University of Hong Kong The HKU Scholars Hub



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Presiding Officer: Mr. Joel Filamor

Officer of the Day: Mr. Harold John Culala

8:00	Registration
8:30	Opening Ceremony Doxology National Anthem Welcome Message – Dr. Michael M. Alba President, Far Eastern University
8:50	Keynote Address  Opening Remarks and Introduction to the Keynote Speaker  - Br. Ricardo P. Laguda, FSC  President, De la Salle University  President, ASAIHL National Council Philippines  Keynote Speech - Hon. Edgardo J. Angara  Senator
9:20	Plenary Session 1 – Dr. Grace J. Alfonso  Chancellor, UP Open University
	PRESENTATION OF COUNTRY PAPERS
9:50	"MAKING TRANSITION TOWARDS STUDENT – CENTERED LEARNING FOR THE 21 <sup>ST</sup> CENTURY: A CASE STUDY IN THAILAND"  Dr. Worawarong Rakreungdet King Mongkut's University of Technology Thonburi, Bangkok, Thailand
10:20	PHILIPPINES  "ASSESSMENT PRACTICES IN HIGHER EDUCATION IN THE PHILIPPINES"  Dr. Marilyn U. Balagtas Philippine Normal University
10:50	Open Forum
11:20	Photo Opportunity
11:30	Lunch Break and Networking
	PRESENTATION OF PAPERS

1:00	"BLENDED LEARNING AS A MODEL OF TEACHING AND LEARNING AT UNIVERSITY"  Prof. Ravik Karsidi (To be presented by Prof. Joko Nurkamto Samuri) Sebelas Maret University, Indonesia
1:20	"IMPLEMENTATION AND MANAGEMENT OF THE BLENDED LEARNING PROGRAM AT THE UNIVERSITY OF THE EAST, PHILIPPINES" Prof. Linglingay P. McDermott University of the East Philippines
1:40	"ENGAGING COMMUNITIES, EXPERIENTIAL LEARNING AND A CLASSROOM IN THE REAL WORLD" Prof. Meliss Cate Christ University of Hongkong Hongkong
2:00	Open Forum
2:20	"PARTNERSHIP BETWEEN COOPERATING SCHOOLS AND TEACHER EDUCATION INSTITUTIONS TOWARD EMPOWERING STUDENT"  Dr. Bernadette L. Soliba Saint Louise University, Baguio City Philippines
2:40	"TOWARDS AN ENGAGED LEARNING: TEACHING ANTROPOLOGY TO HOSPITALITY MAJORS"  Prof. Maria Carinnes A. Gonzalez University of Santo Tomas Philippines
3:00	Health Break
3:20	"DEVELOPMENT OF INSTRUCTIONAL MATERIALS USING THE READER – RESPONSE THEORIES FOR TEACHING WORLD LITERATURE TO TECHNICAL STUDENTS IN THE TERTIARY LEVEL" Prof. Rowena P. Moralina Far Eastern University – Institute of Education Philippines
3:40	"BLOGGERS' VIEWS AS A TOOL IN IMPROVING FREE WRITING"  Dr. Ma. Junithesma D. Rosales  Polytechnic University of the Philippines
4:00	Open Forum
4:30	Campus Tour
5:30	Conference Banquet and Cultural Night  Venue: FEU Pavilion



Presiding Officer: Mr. Giovanni Barbajera

Officer of the Day: Dr. Elisa Mañalac

9:00	Synthesis of Day 1
9:10	Plenary Session II – Maria Serena I. Diokno Chairperson, National Historical Commission
9:40	Open Forum
	PRESENTATION OF COUNTRY PAPERS
9:55	HONGKONG "DEVELOPING LEARNER AUTONOMY – FACTORS AFFECTING STUDENTS' SATISFACTION WITH AN INDEPENDENT LEARNING MODULE"  Prof. Lorraine de Beaufort Center for English and Additional Languages Lingnan University, Hongkong Hongkong
10:25	SINGAPORE  "University 2.0: Participative, Collaborative and Sustainable Learning"  Dr. Daniel Tan Nanyang Technological University Singapore
10:55	Open Forum
11:15	General Assembly
12:15	Lunch and Networking
	PRESENTATION OF PAPERS
1:00	"A BASIC MATHEMATICS PROFICIENCY AND ALGEBRA ASSISTANCE CLASS FOR FRESHMAN COLLEGE STUDENTS" Prof. Mark Louie Ramos University of Santo Tomas Philippines
1:20	"THE ROLE OF ROBOTICS EDUCATION IN CREATIVITY DEVELOPMENT OF SECONDARY LEVEL" Prof. Elmer P. Dadios College of Engineering, De La Salle University, Manila

1:40	"THE NEW STRATEGIES IN TEACHING AND LEARNING: THE POLYTECHNIC UNIVERSITY OF THE PHILIPPINES COLLEGE OF EDUCATION EXPERIENCE"  Dr. Ravolina B. Jacolbia Polytechnic University of the Philippines  Sta. Mesa, Manila Philippines
2:00	Open Forum
2:20	"RESOURCES AND RESOURCEFULNESS: THE UNESCO-UE PARTNERSHIP TEACHER TRAINING"  Prof. Cynthia Grace L. Diaz University of the East, Manila Philippines
2:40	"THE MESSIER OBJECT AS A TOLL IN TEACHING ASTRONOMY"  Prof. Jesus Rodrigo F. Torres  Rizal Technological University  Philippines
3:00	"EXPERIENCES USING PAIR PROGRAMMING TO FACILITATE LEARNING IN INTRODUCTORY PROGRAMMING AND SOFTWARE ENGINEERING COURSES IN THE PHILIPPINE UNIVERSITY" Dr. Raymund Sison College of Computer Studies De La Salle University
3:20	Open Forum
4:00	Closing Ceremony  Closing Remarks - Dr. Ninnat Olanvoravuth  Secretary General, ASAIHL

#### **ABSTRACTS**

## Making Transition Towards Student-Centered Learning for the 21<sup>st</sup> Century: A Case Study in Thailand

Dr. Worawarong Rakreungdet<sup>1,2</sup> \* Sasitorn Suwannathep<sup>1,3</sup> \* Chantima Patamathamakul<sup>1</sup>
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In the dynamic world of the 21st century, graduates are expected to possess a wide range of skills to enter the job market. Education at tertiary level prepares students by providing opportunities for students to develop their skills in the cognitive and affective domains, necessary for the market. The preparation will be effective if students are deeply engaged with what they learn. Thus recent learning approaches are moving towards student-centered learning to address learning engagement. This paper presents a variety of new learning approaches that have been developed in Thailand, especially at King Mongkut's University of Technology Thonburi. The role shifting from teachers to facilitators, and thus teaching to learning, will be presented. A variety of learning models in engineering education in the University will be used as examples. These models address students' engagement and allow them to develop their broad knowledge base, literacy, inventive thinking, effective communication, adaptability, and their lifelong learning skill.

**Keywords:** Student-Centered Learning, 21st Century Education, Students' Engagement, King Mongkut's University of Technology Thonburi.

#### **Assessment Practices in Higher Education in the Philippines**

Ester B. Ogena, PhD & Marilyn U. Balagtas, PhD Philippine Normal University

This paper analyzes the trends in the assessment practices in higher education in the Philippines from 2000 to present based on research studies and capacity building programs conducted in Higher Education Institutions (HEIs) across the country within this period. These practices, ranging from traditional to more authentic ways of assessing learning, are assumed to have been influenced by two memoranda released by the Commission of Higher Education (CHED) in 1999 and in 2004. Such memoranda specify the policies and standards for teacher education, which include the required courses in assessment of students' learning that prospective teachers in basic education as well as those in higher education institutions are expected to learn and apply when they become teachers regardless of the level of students they handle. The highlight of this paper is the practice of balanced assessment of students' learning where teachers combine the use of the penand-paper tests and more authentic assessment through performance tasks and learning portfolios in assessing for, of, and as learning.

### Blended Learning as a Model of Teaching and Learning at University

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The development of information and communication technology has a great effect on the management of education, especially at tertiary level. One of the forms of the impact is the way that students and lecturers communicate and interact each other in teaching and learning context. In the past, teaching and learning activity was conducted mainly in the classroom, where the lecturers delivered their teaching materials manually using conventional teaching aids like a blackboard and an overhead projector. This traditional way of teaching and learning required the students and the lecturers to have a face-to-face meeting in the classroom, and the presence of the students in the meeting became one main prerequisite for the success of their study. The invention of modern educational technology enables the students and the lecturers to manage teaching and learning more flexibly. The e-learning technology has provided the capacity for both asynchronous and synchronous human interaction. However, as social creature, we still need direct meeting in learning transaction because there are some social and psychological aspects which cannot be effectively tackled by the technology. Blended learning, therefore, becomes an ideal model of teaching and learning in this modern era. It combines traditional face-to-face classroom methods with more modern computermediated activities.

**Keywords**: Teaching and learning, education technology, traditional methods e-learning and blended learning.

## Implementation and Management of the Blended Learning Program at the University of the East, Philippines

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Blended Learning is a mix of face-to-face learning and online learning. It has been growing in popularity as a way to promote innovative instructional approaches and accommodate various learning styles. By fostering learning strategies that include a wide variety of learning activities such as classroom instruction, virtual meetings, online books, mentoring, self-paced study, simulations and assessments, schools can more efficiently utilize learning resources while allowing students more learning flexibility. Students are able to choose the type of learning that best suits their particular learning style, the amount of time available and the kind of information needed. The University of the East, Philippines started planning for a Blended Learning Program in the Graduate and Undergraduate Levels two years ago. Implementation was started this year.

The university chose Moodle, a learning management system, to deliver the online element of blended learning. This paper will discuss the University of the East's planning and implementation process. Recommendations and future tasks will also be explored.

### Engaging Communities, Experiential Learning and a Classroom in the Real World

Melissa Cate Christ, \* John Lin
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As part of curriculum reform at The University of Hong Kong, one of the key aspects is the implementation of experiential learning. By taking students out of the classroom into the real world, the traditional construct of problem-based learning, in which each problem proceeds an expected answer, is reversed. Introducing students in undergraduate education to complex situations with uncertain outcomes leads to a shift in educational priorities, a deeper understanding of the nature of inquiry, and the attainment of a wide variety of tools for knowledge acquisition.

This paper presents three distinct courses in the Faculty of Architecture, each of which implemented a different aspect of experiential learning. The first course introduced students to an urgent contemporary issue in the local community and allowed them to actively provoke positive change through design research and community engagement. In the second course, students participated in the design and physical renovation of a 300-year old bridge in China. The third course was a multi-disciplinary design studio based upon the rebuilding of a traditional Chinese village. All three courses engaged students in novel situations with ill-defined problems and allowed them to confront the complexities involved in the application of theoretical ideas to make actual impact in the real world. This paper presents the approach and methodologies of the three courses' in their collaboration with local communities' to raise their awareness, enable their participation, and improve their lives. It concludes with a reflection on the challenges of achieving and assessing the stated learning outcomes and several lessons for future iterations of this type of curricular approach.

### Partnership between Cooperating Schools and Teacher Education Institutions toward Empowering Student Teachers

Bernadette L. Soliba Saint Louise University, Baguio City Philippines

This study aimed at finding out the extent of performance of School Administrators, Supervising Instructors and Cooperating Teachers in empowering their student teachers in the Teacher Education Institutions in the Province of Benguet and in the City of Baguio. The respondents for this study were the supervising instructors, cooperating teachers and student teachers of the different Teacher Education Institutions (TEIs). A questionnaire was used to gather the needed data for this study; which was also supported by interviews conducted to the student teachers and some supervising instructors. The weighted mean was used to find out the level of effectiveness of the supervising instructors and cooperating teachers in implementing their roles and responsibilities and was used to find out the extent of implementation of student teachers of their roles. The study found out that according to the Supervising Instructors and cooperating teachers, their heads, deans and principals, always perform their roles when it comes to preparing the student teachers for the teaching career; and that the in-campus coordinating teachers empower more the student teachers because they perform their responsibilities more and better than the off-campus cooperating teachers do. A partnership exists among these entities as shown in the responses given. A culture of collegiality must exist between the supervising instructors and cooperating teachers to avoid confusion on the part of the student teachers.

Key Words: Partnership, Empowerment, Student Teacher, Cooperating Teacher, Supervising Instructor, Practice Teaching

### Towards an Engaged Learning: Teaching Anthropology to Hospitality Majors

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The College of Tourism and Hospitality Management of the University of Santo Tomas offers the course Sociology and Anthropology as a general education subject for both programs of Travel Management and Hotel and Restaurant Management. The primary aim of the course is to educate students about societal structures and culture. As an anthropologist teaching the course to non-majors, the challenges are wide-ranging: from determining the content of the course to the need of relating it to the major of students.

This paper discusses the method by which the course has been facilitated in the College. Specifically, this paper discusses the method of engaged anthropology as learned and applied by students. The concept of engaged anthropology stems from the Discipline's method of participant observation wherein researchers are expected to immerse in the culture that they are studying. Apart from actual immersion, engaged anthropology refers to the objective of the learner to not only understand the culture but also to propose solutions on the social problems that they have identified.

Through the presentation of the course syllabus, the output of students, and the selected reviews of the course by the students which are arranged in themes, this paper argues that a more engaged form of learning is beneficial for our learners as we, the educators, attempt to direct them to social responsibility as an integral part of their education process.

Key concepts: Engaged learning, hospitality education, social responsibility

### Development of Instructional Materials using the Reader-Response Theories for Teaching World Literature to Technical Students in the Tertiary Level

Rowena P. Moralina Far Eastern University-Institute of Education

The study aimed to develop instructional materials using the reader-response theories for teaching World Literature to technical students of Far Eastern University-East Asia College. The study was conducted to revitalize the teaching of World Literature and provide a better alternative to traditional teacher-centered teaching style by use of the reader-response theories advocated by Stanley Eugene Fish, Norman Holland, David Bleich, and Louise Michelle Rosenblatt. Price and Nelson's activity plans were used in the materials while Simbulan's criteria were modified to suit the research needs. There were 10 lessons with two sample lessons that covered the literary genres: short story, poem, essay, drama and novel. The texts were taken mainly from European and Latin American Literature. The study began with the conduct of needs analysis of the reading skills and literary competence of the 295 respondents enrolled in FEU-EAC in school year 2008-2009. The preparation of the materials and the try-out in real classroom context followed next where 6 college teachers including the researcher tried the materials for teachability, content, suitability and approach. Seven different sections were used for the try-out of the materials. Results of the evaluation revealed that students' specialization must be considered when assigning activities, the materials developed improved the performance and interest of the respondents and the use of reader-response theories invigorated the teaching of World Literature.

#### Bloggers' Views as a Tool in Improving Free Writing

Dr. Ma. Junithesma D. Rosales Polytechnic University of the Philippines

"Bloggers' views on blogging as a tool in improving free writing" was written to find out if writing on a web blog improves free writing. Blogging, to date, has swept the classroom landscape and its potential has been viewed as a way of expanding and reaching a greater number of students whose learning may not, in some cases, be dependent on textbooks and lectures of the teacher inside the classroom.

The study was conducted in 2010. During this year, few studies were written about the topic. There was evidently a dearth of researches that directly links with the present investigation. Thus, an interest in finding out if blogging improved free writing was conducted.

The qualitative method of research was utilized in this study. Case study was specifically used because it allows an in depth study of a particular situation rather than a sweeping statistical survey. Interview was used as the main data gathering instrument.

Eight informants were selected based on criteria set in the study. Results revealed that blogging contributed positively to the improvement of the informants' writing skills particularly on grammar, vocabulary, and writing style. It was recommended that instructors use blogging as an activity for teaching not just writing in English but also writing in different subject areas.

### Developing Leaner Autonomy – Factor Affecting Students' Satisfaction with an Independent Learning Module

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The importance of developing learner autonomy hardly needs restating in today's globalized world, in which lifelong learning is a necessity rather than a choice. However they decide to encourage this autonomy, institutions need to carefully consider students' conceptualizations of "independent learning", and tailor their implementation of courses and modules accordingly. The present study set out to investigate the factors that affected students' satisfaction with an independent learning module, included within a university English proficiency course, and gathered both quantitative and qualitative data. The results illustrate the complexity of factors affecting the development of independent learners, and highlight the importance of their mental representations of independent learning. These perceptions need to be taken into account if the implementation of independent learning is truly aimed at developing autonomy. The developing nature of notions such as "independent learning" and "learning autonomy" is also examined with reference to teaching and learning in the 21<sup>st</sup> century University.

#### University 2.0: Participative, Collaborative and Sustainable Learning

Dr. Daniel Tan
Nanyang Technological University

eLearning - the use of technology in education - has been adopted by many institutes of higher learning in the last decade. Albeit with much effort and resources, there still present challenges in many instances where the outcomes have not been as expected. In this presentation, we will share the strategy and implementation that the Nanyang Technological University has taken to create a culture of learning in a blended learning environment. The outcome is the highly participative opportunities that our students are able to be active and collaborative in their learning. While these are desired outcomes in such a hybrid learning environment, the platform thus adopted also ensures that such a learning mode is sustainable for faculty every semester. The platform covered will include the new learning space design in our classrooms, the campus-wide lecture capture initiative and the use of the LAMS (Learning Activities Management System) authoring tool to create a holistic, integrated and interactive learner-centric environment

#### A Basic Mathematics Proficiency and Algebra Assistance Class For Freshman College Students

Mark Louie Ramos, MMathEd University of Santo Tomas Philippines

This study sought to address the problem of persistently high failure rates of freshman students taking up College Algebra at College of Science of the University of Santo Tomas, Manila, Philippines. A Basic Mathematics Proficiency and Algebra Assistance Class (BMP&AAC) was developed and administered to help underprepared students cope with and overcome difficulties that they encountered in their College Algebra course subject due to having poor pre-requisite arithmetic knowledge in the subject. The College Algebra Preparedness Examination (CAPE) was used to identify underprepared students from among a population of 475 freshmen. Among the underprepared students identified, 136 were randomly selected for the study and randomly grouped into control and experimental groups. Experimental groups were provided access to BMP&AAC which were held for one hour, twice a week. Results of the study showed that students who attended at least 40% of the BMP&AAC sessions performed significantly better than students who attended less than 40% and students who were in the control group (p<0.05). Furthermore, while CAPE passers performed better in College Algebra than non CAPE passers, no evidence of statistical difference was found between the performance of CAPE passers and students who attended at least 40% of the BMP&AAC sessions.

### The Role of Robotics Education in Creativity Development of Secondary Level Students

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This paper presents the impact of robotics education in creativity development of secondary level students in the Philippines. The robotics education consists of formal twelve training sessions that use mobile robot kits as the platform. These robot kits are to be assembled and programmed by the students suited for different environment. The goal of this research is to reveal the difference between the creativity level of students who have undergone robotics education/training and those who have not. It has been found that robotics educational/training actually improves the creativity level of students. Therefore, it is important to integrate robotics subjects in the curricula of secondary level education. This study was conducted with 40 students from the secondary school in the Philippines. These students were randomly selected and categorized into two groups—the experimental group and the control group. The students in the experimental group underwent 12 sessions of robotics education/training, whereas the students in the control group did not involve in any of the robotics sessions. The experiment revealed that robotics education/training contributes to more than 10% of the students' creativity improvement.

**Index terms** - Robotics education, Creativity development.

The New Strategies in Teaching and Learning: Polytechnic of the Philippines College of Education Experience

Dr. Ravolina B. Jacolbia Polytechnic University of the Philippines Sta. Mesa, Manila, Philippines

### Resources and Resourcefulness: The UNESCO-UE Partnership in Teacher Training

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There are many teacher trainings on ICT integration that focus on providing teachers with basic-to-expert-level technological skills for classroom teaching and learning. However, to ensure that learning indeed takes place, trainings need to likewise develop essential aspects of teacher knowledge required for effective ICT integration. To achieve this, resources and resourcefulness need to be matched among partner institutions so as to provide greater impact in the conduct of teacher training. Furthermore, ICT-integration frameworks need to be adapted to optimize the instructional processes in actual teaching-learning scenarios. One such framework is the Technological Pedagogical Content Knowledge, otherwise known as TPACK. This paper identifies the TPACK components present in UNESCO Bangkok's Teaching with Multimedia Training Handbook and the TPACK gained by training participants, drawing upon relevant literature on ICT-integration. Data gathered were used to further investigate how the intended TPACK components in the training matched the actual TPACK gained by the participants. The paper then discusses that training designs based on the TPACK develop teachers' competencies in a more holistic manner, enabling them to effectively transform traditional teaching practices into learner-focused pedagogies. Teachers and trainers should develop their TPACK in order to effectively integrate ICT into their specific teaching contexts. A model for teacher training on ICT integration is described, with emphasis on selecting available ICT and multimedia resources distributed freely by UNESCO Bangkok through its various Resource Distribution Centers (RDCs) in the Asia-Pacific region.

# Experiences Using Pair Programming to Facilitate Learning in Introductory Programming and Software Engineering Courses in a Philippine University

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Pair programming is a collaborative approach to software development in which one programmer, called the driver, types at the computer while the other programmer, called the navigator, observes the work of the former, looking for potential as well as actual errors while planning the pair's next step or task. The literature is replete with studies suggesting various benefits of using pair programming not only in industrial settings, where it originated, but also in the classroom. These benefits include higher code quality, greater confidence, and greater enjoyment of students. Guidelines have also been proposed on the use of pair programming in the classroom. This paper describes the author's research as well as experiences in using pair programming in the Philippine setting since 2006. The goal is to examine the applicability of the aforementioned benefits and guidelines, mostly obtained in U.S. settings, to the local situation. The paper then articulates what has emerged to be the author's set of guidelines on the use of pair programming in programming and software engineering courses, which might be useful in other Philippine or Asian contexts.

#### The Messier Object as a Tool in Teaching Astronomy

Prof. Jesus Rodrigo F. Torres Rizal Technological University Philippines

The French astronomer Charles Messier (1730-1817) compiled a catalogue of astronomical objects which reached 109 in number after additions by later astronomers were added. The catalogue contains galaxies, emission nebulae, a supernova remnant, a double star, globular clusters, open clusters, an asterism, a star cloud, and planetary nebulae. While the objective of Messier in compiling the catalogue was to guide comet hunters not to be confused by his objects which he thought looked like comets, the Messier Catalogue as it later became known became a standard guide to astronomers for a study of the sky's "greatest hits" or the best samples of objects which can be observed and studied. This paper explores the value of the Messier Catalogue in the teaching of Astronomy and Earth Science. The range of objects is wide and contain some of the best examples of their type. The teaching method I propose is the actual observations of the objects through a telescope, with the corresponding explanation. Some principles which will be covered through this process are stellar evolution from the birth and death of stars, galaxy types, formation of galaxies, galactic interactions, life in the Universe, cosmology, and our place in the Universe.

The Messier Catalogue has enough objects of differing variety to introduce students to Astronomy. M1, for example, called The Crab Nebula by astronomers, is a supernova remnant. A supernova remnant is a diffuse nebula created out of the remains of the outer layers of a star which exploded into a supernova. M1 is a rich source of information for the students. Its physical properties will introduce them to some aspects of astrophysics. Even its history is gives information on the differing cultures of the time of its explosion in 1054 AD. Looking at the Messier Objects through a variety of telescopes at different magnifications is like getting to know a celebrity in person, indeed much better than merely looking at pictures. My experience tells me that students observing these objects through telescopes in a cool, dark and cloudless night understand astronomical principles better.

I have observed the Messier Objects several times each in many years through telescopes of various apertures, particularly the Orion XT-10 Newtonian reflector on Dobsonian mount, the Celestron 102-mm refractor on altazimuth mount, and the Celestron 8-inch Schmidt-Cassegrain on fork mount. I also used a variety of filters and eyepieces of differing focal lengths in order to extract the best views of the objects. I sketched most of the objects to show my students later. I ask them to do their own sketch from time to time.

I observed in three sites, namely, the RTU Pasig Campus were most of the fainter Messier objects were observed, the RTU Mandaluyong campus were the brighter objects were repeatedly observed and shown to the students, and in my residence in Taytay, Rizal almost adjacent to the Manila East Road and a big mall. In suburban and dark campuses all of the Messier Objects would be breathtaking.

While it may not be always possible to view all the 109 Messier Objects in just one night, enough of them should be visible in a 3-hour observing run, especially when the weather clears in October to April. When the constellation Orion is near the zenith at early evening, it is assured that the constellations Auriga, Canis Major, Lepus, Taurus, Gemini, Perseus, and Andromeda among others would be observable. In these constellations we would have a good sampling of astronomical objects to observe through the Messier list, such as the Andromeda Galaxy, M41 (open cluster), M42 (bright emission nebula and star forming region), M78 (globular cluster), M1 (supernova remnant), M36, M37, and M38 (open clusters), and M35 (open cluster). Waiting a little while for Lyra to rise, M57 (planetary nebula) would be visible. All of these objects are visible and can be studied in detail even in severely light-polluted sites such as the RTU Mandaluyong Campus.

The final output of the research is embodied in a 4-volume work on the Messier Objects by this researcher.