Republic of the Philippines

Department of Education

Region VI –Western Visayas

SCHOOLS DIVISION OF ILOILO CITY

August 24, 2021

To the Principals of the following schools:

1. Iloilo City National High School
2. Santa Isabel College of Iloilo City/International School, Inc

SUBJECT: REQUEST FOR ENDORSEMENT FOR THE RESEARCH STUDY TO BE CONDUCTED BY THE UNIVERSITY OF THE PHILIPPINES COLLEGE OF MASS COMMUNICATION FOUNDATION, INC. (UPMCFI)

Dear Sir/Madam:

Attached is the letter of Prof. Arminda V. Santiago, PhD, UP President/Project Leader, UP College of Mass Communications Foundation, Inc. (UPMCFI), to conduct the study entitled: *"Appreciating Science: A Project on Perception and Inclination of Filipino K7 to 10 students in the Philippines to Pursue Science Tracks"* in Iloilo City.

They will conduct the remote/online interviews and/or focus group discussions to the school principals, science coordinators, and selected Grade 7 to 12 students, following required research ethics and health protocols.

Immediate dissemination on the contents of this Letter is desired.

Very truly yours,

MA. LUZ M. DE LOS REYES, CESO V
Schools Division Superintendent

Enclosure: As stated.

DIVISION LETTER NO. 56 s. 2021

SGOD/JML/eig

Address: Gen. Luna – Mabini Sts., Iloilo City
Website: http://depediloilocity.net
Email: infodepediloilocity@gmail.com
Tel. Nos.: (OSDS) 336 9273 / 3336 4745 (SGOD) 336 2751/5001176
(CID) 335 0140 (AO) 321 3277

UNIVERSITY OF THE PHILIPPINES

COLLEGE OF MASS COMMUNICATION FOUNDATION, INC.

DIVISION OF ILOILO CITY
DATE: 8/18/21
BY:

16 August 2021

Ma. Luz M. De Los Reyes, Ph.D., CESO VI
Schools Division Superintendent
Schools Division of Iloilo City
Region VI - Department of Education

SUBJECT: REQUEST FOR ENDORSEMENT

Dear **Ms. De los Reyes**:

Warm greetings from the U.P. College of Mass Communication Foundation, Inc. (UPCMCFI)!

We are writing to request your kind endorsement for our DOST-SEI-supported study entitled "Appreciating Science: A Project on Perception and Inclination of Filipino K7 to 10 Students in the Philippines to Pursue Science Tracks" in **Iloilo City.**

The project is a three-year project and it is now in its second year. For year 1, the DepEd released its advisory, endorsing the request of the Project Leader, Dr Arminda Santiago as shown in the attached **Annex A.**

Just like Year I, we hope to get DepEd's formal endorsement soon, which we are just waiting for release based on our attached request letter **Annex B.**

At the regional level / schools division, we trust that you will likewise endorse the said project for its smooth implementation

In **Iloilo City**, we have identified the following schools to be part of our research sites:

1. **Iloilo City National High School**
2. **Santa Isabel College of Iloilo City/ International School Inc.**

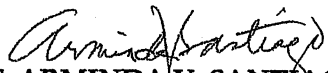
We will conduct remote/online interviews and/or focus group discussions with the school's principals, science coordinators, and selected K7 to 10 students, following required research ethics and health protocols.

We will coordinate with your office in the next few days to follow up on this request.

Looking forward to your support for our study which seeks to generate relevant knowledge that can be used to further advance science education in the country.

Thank you very much. Best regards.

Truly yours,



PROF. ARMINDA V. SANTIAGO, PhD
U.P. CMCFI President / Project Leader

0827 20023

Republic of the Philippines
Department of Education
OFFICE OF THE UNDERSECRETARY

MEMORANDUM

DEPARTMENT OF EDUCATION
SEP 02 2020 10:33
018-0920

TO: **ALL DEPED REGIONAL DIRECTORS**

FROM: **ATTY. REVSEE A. ESCOBEDO**
Undersecretary
Field Operations, Policy Partnership Secretariat, and
GEACO

SUBJECT: **REQUEST FOR ENDORSEMENT FOR THE RESEARCH STUDY ENTITLED "*APPRECIATING SCIENCE: PERCEPTION OF SCIENCE AMONG FILIPINO K3 TO K6 STUDENTS IN THE PHILIPPINES*" OF THE UNIVERSITY OF THE PHILIPPINES COLLEGE OF MASS COMMUNICATION FOUNDATION, INC**

DATE: August 27, 2020

This Office respectfully endorses the attached letter of Ms. Armanda V. Santiago, PhD., Project Leader/President, UP College of Mass Communications Foundation, Inc. (UPCMCFI), relative to their request for the participation of teachers and students in survey interviews, focus group discussions, and key informant interviews for the conduct of their three-year research study, in partnership with the Department of Science and Technology – Science Education Institute (DOST-SEI). The research study, entitled "Appreciating Science: Perception of Science Among Filipino K3 to K6 Students in the Philippines" aims to look into the perception and relevance of Science among grade school students.

For further queries and concerns, kindly contact Ms. Rosa Silvestre, Executive Director, UPCMCFI, and/or Ms. Katrina Ramos at (+632) 8929-2671, +(632) 8981-8500 local 2678 or at [illegible]

For your consideration and appropriate action.

Office of the Undersecretary for Field Operations, Policy Partnership Secretariat, and GEACO

August 27, 2020

To: Schools Division Superintendents
Public School Heads
All Others Concerned

For information, dissemination and appropriate action.

ESTELA L. CARIÑO, EdD., CESO IV
Director IV/Regional Director

Republic of the Philippines

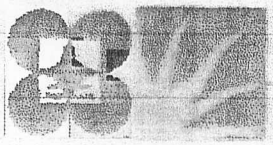
Department of Education

OFFICE OF THE SECRETARY

ACKNOWLEDGMENT RECEIPT

DATE OF LETTER:	6/17/2020
NAME AND ADDRESS OF SENDER:	Arminda V. Santiago President/Project Leader UP-College of Mass Communication Foundation Inc. Plaridel Hall, Vinzons St. Diliman, Q.C.
SUBJECT:	Request for endorsement re: three year research study entitled: Appreciating Science: Perception of Science among Filipino K3 to K6 students in the Philippines
DATE RECEIVED:	6/23/2020 with OSEC Code No. 433974
STATUS OF DOCUMENT:	6/25/2020 - Routed to the Office of the Undersecretary of Planning, Field Operations and Human Resources and Organizational Development (OUPFOHROD)
FOR FOLLOW-UP:	Please call (02) 8633-5313

MA. GLADYS J. MALAPAD
[illegible] Records Receiving & Management Unit
Office of the Secretary



A Survey on the Perception of Science among K3 to K6 Students on the Philippines

A Project of the Department of Science and Technology - Science Education Institute and University of the Philippines College of Mass Communication Foundation Inc

June 17, 2020

MR. JESUS LORENZO RUIZ MATEO
Undersecretary for Planning, Field Operations, and Human Relations and Organizational Development
Department of Education
DepEd Complex, Meralco Avenue, Pasig City, Metro Manila, Philippines

SUBJECT: REQUEST FOR ENDORSEMENT

Dear Usec Mateo,

Warm greetings from the UP College of Mass Communication Foundation, Inc.(UPCMCFI)!

The UP College of Mass Communication Foundation, Inc., in partnership with DOST - Science Education Institute (SEI), will conduct a three-year research study that will look into the perception and relevance of science among grade school students. The study titled, *Appreciating Science*: Perception of Science Among Filipino K3 to K6 Students in the Philippines is the first of a series of projects that will be implemented, results of which will pave the way for the development of a communication and media plan to promote science among Filipino Grades 3 to 6 students.

May we request the endorsement of the Department of Education and encourage the participation of teachers and students in survey interviews, focus group discussions, and key informant interviews? We will also appreciate it if you will endorse our study to the regional offices of the Department of Education. The endorsements will greatly aid us in securing informed consent as well as parental consent for the schoolchildren and facilitate the conduct of our data gathering activities

Enclosed please find the UPCMCFI executive summary of the study, as well as the list of the schools where the participants will come from for your reference. We intend to start the project when the classes open in August 2020, and we are ready to switch from face to face to online platforms as we see fit in accordance with your advice and condition of the schools and students

Should you have any queries and concerns, you may call UPCMCFI's Executive Director, Ms. Rissa Silvestre, or our UPCMCFI Assistant, Ms. Katrina Ramos at the

telephone number (+632) 8929-2671 or email "UP College of Mass Communication Foundation, Inc. (UPCMCFI)" upcmcfi@gmail.com. You may also reach us through the landline at (+632) 8981-8500 local 2678.

Thank you very much and we look forward to your favorable response.

Sincerely yours,

ARMINDA V. SANTIAGO, PhD
UP CMCFI President/Project Leader

CC **DR. LEONOR MAGTOLIS BRIONES**
Secretary, Department of Education

ATTY. NEPOMUCENO A. MALALUAN
Undersecretary, Chief of Staff

TONISITO M. C. UMALI, Esq.
Undersecretary, Legislative Affairs

Appreciating Science: A Project on Perception and Inclination of Filipino K7 to 10 Students in the Philippines to Pursue Science Tracks (Year

A Project of the Department of Science and Technology - Science Education Institute and University of the Philippines College of Mass Communication Foundation Inc.

RECEIVED BY:

Printed Name & Signature

DEPARTMENT OF EDUCATION
RECEIVED
RECORDS DIVISION, CENTRAL OFFICE
Date & Time
JUN 23 2021
BY: TIME: 3:05 pm

Contact Details for follow-ups:
Name:
Landline No.: 8-687-1449

June 14, 2021

DR. LEONOR MIRASOL MAGTOLIS- BRIONES
Secretary, Department of Education
DepEd Complex, Meralco Ave
Pasig, Metro Manila

SUBJECT: REQUEST FOR ENDORSEMENT

Dear Secretary **Briones,**

Warm Greetings from the U.P. College of Mass Communication Foundation, Inc.! We sincerely hope that this letter finds you well and in good health.

The UP College of Mass Communication Foundation, Inc., in partnership with DOST - Science Education Institute (SEI), is conducting a three-year research, *Appreciating Science: A Project on Perception and Inclination of Filipino K7 to 10 Students in the Philippines to Pursue Science Tracks.* It is on its second year of implementation with Grades 7 to 10 students in sample private and public schools as the main subjects. The general objective of this phase is to inquire into the factors that influence these students in pursuing STEM or STEM-related learning tracks. The results will be the bases for the development of a communication and media plan to promote science among Filipino students.

We thank you for endorsing this project last year. For the project's second year, may we again request the endorsement of the Department of Education to encourage the participation of teachers and students in survey interviews, focus group discussions, and key informant interviews, all of which will be done online/remotely.

We will also appreciate your endorsement of this project to the regional offices of the Department of Education, specifically, in the research sites, Regions I, III, V, VI, VII, VIII, IX, XI, XII, and NCR. The endorsements will greatly expedite our acquirement of informed consent and parental support for the participation of the schoolchildren and facilitate the conduct of our data gathering activities.

Appreciating Science: A Project on Perception and Inclination of Filipino K7 to 10 Students in the Philippines to Pursue Science Tracks (Year

A Project of the Department of Science and Technology - Science Education Institute and University of the Philippines College of Mass Communication Foundation Inc.

We wish to apprise you of the good result of Year I in the enclosed Executive Summary as well as share with you the UPCMCFI Year 2 concept paper..

Should you have any queries and concerns, you may call UPCMCFI's Executive Director, Ms. Rissa Silvestre, or our UPCMCFI Assistant, Ms. Katrina Ramos at the telephone number (+632) 8981-8500 local 2678 or email "UP College of Mass Communication Foundation, Inc. (UPCMCFI)" up.cmcfi@gmail.com.

Thank you very much and we look forward to your favorable response.

Sincerely yours,

PROF. ARMINDA V. SANTIAGO, PhD
UP CMCFI President/Project Leader

CC:

Atty. NEPOMUCENO A. MALALUAN
Undersecretary and Chief of Staff

ATTY. REVSEE ACUÑA ESCOBEDO Undersecretary
Planning, Field Operations, and Human Resources and Organizational Development (Organizational Effectiveness, School Effectiveness, and Human Resource Development)

TONISITO M. C. UMALI, Esq. Undersecretary
Legislative Affairs

Appreciating Science: A Project on Perception of Science Among Filipino K3 to K6 Students in the Philippines (Year 1)
YEAR 1 PROJECT REPORT

EXECUTIVE SUMMARY

This research project examined the growing concern on the Filipino students' poor academic performance in the field of Science. It also investigated on the observation that there is a low inclination of Filipino students in the basic education level to pursue higher studies in Science as well as to have a career in Science and Science-related endeavors. In order to address these concerns, it was important to understand how students in the basic education level perceive, learn, and appreciate Science during their childhood education. This research assumes that a student's perspective of Science may have direct influences to their learning and study behavior and may influence the quality of science learning.

The project spans three years and has an overarching program title of, "A Three-Year Project on the Perception and Relevance of Science and Development of a Communication and Media Plan to Promote Science Among Filipino Students in the Basic Education Program." It is divided into three (3) phases with the first phase or Year 1 focusing on students in the K3 to K6 levels. The second phase or Year 2 will explore how science is perceived by students in the K7 to K12 year levels and finally the third phase or Year 3 the research findings and insights from all year levels will be collated and be utilized in the development of a communication and media plan for the promotion of Science among Filipino students in the basic education program of the country.

This report covers the first phase or Year 1 beginning January 2020 to February 2021. Year 1 focused on students in the K3 to K6 levels. K3 to K6 students were specifically selected for the study because of the need to examine their formative years of Science education, which commonly starts on their third year of

elementary education in the Philippines. Additionally, it further investigated on the following aspects:

1. The students' perception, attitude, awareness, and knowledge in Science;
2. The student's experiences in learning Science; and
3. The student's inclination to pursue Science.

The study employed triangulation using both quantitative and qualitative methods of data gathering. A survey was administered among 1,081 K3 to K6 students, using a simple random sampling scheme to determine the schools to be surveyed. For the Focus Group Discussions (FGD) and Key Informant Interview (KII), purposive sampling through maximum variation and convenience sampling was used. Survey questionnaires, FGD, and KII guides, as data collection tools were formulated to capture the variables, measures, concepts, and indicators under the study.

For the FGD, six to ten qualified participants were selected upon the recommendation of the school authorities. There was an attempt to have an equal number of boys and girls in every FGD session. Moreover, each FGD had two (2) students from each grade level to capture any gender difference in perception of Science. The following were the criteria used in selecting the discussants:

A. Public school students:

1) K3-6 students;

2) Has Science subjects;

3) Willing to actively participate, and is able to communicate his /her ideas to a group.

B. Private school students:

1) K3-6 students;

2) Has Science subjects;

3) Willing to actively participate, and is able to communicate his /her ideas to a group

Aside from the FGD, 16 key informant interviews (KII) were also utilized. Intensive interviews were conducted among selected school principals and elementary Science teachers from the areas chosen for this study. The criteria that were used in identifying them were:

1) Has played or is playing a significant role in the administration of the Science education in their respective schools, and
2) Willing to share opinions and ideas and experiences regarding the Science education.

This report also reflects the challenges faced by the research team. When the research was conceived as early as late 2019, it was envisioned that all methodological procedures of the research would be implemented on an in-person face-to-face manner. This research was greatly affected by the pandemic that has put to a brief standstill the main participants of the project – the schoolchildren and the schools. A reassessment of strategies had to be made because the project team had to shift to using online platforms in administering the interviewer-administered survey; conducting the FGDs with participating schoolchildren and the conduct of the Key Informant Interviews through online platforms using Google Meet, Zoom, and in some cases through phone calls, instead of the proposed face-to-face survey. However, these were challenges that was surmounted by the research team despite some delays and problems in getting all participants for the study.

The survey revealed that generally, the students have neutral to positive perceptions about and attitudes on Science. They also exhibited neutral to positive scores on their awareness and knowledge in Science. This illustrates that Filipino K3-K6 students expressed neutral to positive sentiments to the statements measuring their (1) Perception about Science, (2) Attitude on Science, (3) Awareness of Opportunities in Science, (4) Knowledge about Science, (5) Perceived Competency of Science Teachers, (6) Parental Support in Learning Science, and (7) Inclination Towards Scientific Opportunities. There were no statements that the students found negative.

Meanwhile, the FGD disclosed that generally, students have a shallow understanding of science. Most of them recalled terms that were taught inside the

classroom but did not know how to characterize, explain, and even relate these with one another. Results indicate students' difficulty in absorbing science concepts and thinking about them in creative and innovative ways. The negative notions about science as a difficult subject are not new issues anymore, but it is important to note how such negativities can be dispelled by effective teaching. In other words, the skill of the teacher can make all the difference. While science is perceived to be a difficult subject, a good teacher can make it enjoyable for students, and amplify student interest.

The KII results show informants' high appreciation of the new K-12 science curriculum which aims to develop students' science literacy, to understand and relate concepts to everyday life. The new science curriculum is more explicit than the old curriculum where the discovery method is used, and that teaching science in the new curriculum is easier because lessons start with the familiar and experience of students and lead towards concepts or the abstract. This method arouses the interest of students in the lessons because they can relate these to their environment.

Appreciating Science: A Project on Perception of Science Among Filipino K7 to K10 Students in the Philippines (Year 2)

CONCEPT PAPER

PROGRAM TITLE	A Three-Year Project on the Perception of STEM Among Filipino Grades 3 to 12 Students in the Philippines (2020 to 2022)
PROJECT TITLE	Appreciating Science: A Project on Perception of Science Among Filipino K7 to K10 Students in the Philippines (Year 2)
PROJECT LEADERS	Professor Arminda V. Santiago, Ph.D./F and Professor Lourdes M. Portus, Ph.D./F **Agency:** UP College of Mass Communication Foundation, Inc. **Address/Telephone/Fax/Email:** Ylanan St., Plaridel Hall, College of Mass Communication, University of the Philippines, Diliman, Quezon City 1101 / 63-2-8981-8500 local 2661 and 2679 / 63-2-926-3465/ armisan2009@gmail.com/ avsantiago@up.edu.ph / lmportus@up.edu.ph / up.cmcfi@gmail.com
COOPERATING AGENCIES	None
SITES OF IMPLEMENTATION	(Municipality / District / Province / Region): Nationwide
PROJECT DURATION	March 2021 to February 2022

Introduction

The importance and value of science to a society and to a country cannot be emphasized enough. Science is useful because of its links to technology and industry, which from a national perspective, are areas of high priority for a country's development. In the so-called hierarchy of knowledge, Science holds a preeminence among other knowledge arenas, such as the humanities, social science, to mention a few. In a highly and increasingly globalized world, especially in the ASEAN region, science is highly regarded as an instrument to economic development and also in developing knowledge-driven and innovation-driven economies.

STEM has become an important and salient component of basic education not only in the Philippines but throughout the world. Having its origin and nascence in the United States in 2001, this education policy or sometimes referred to as a curriculum choice, implicates on the development of a knowledge-competitive workforce that can contribute to the economy of a country. STEM is an acronym to mean Science-Technology-Engineering-Mathematics (sometimes shortened as Math); these are the identified fields or disciplines that weigh on the perceived requirements to become an effective economic contributor. There are times when other disciplines are added into the mix, such, as Arts (making the acronym STEAM) and Medicine (making the acronym STEMM).

Science Technology Engineering and Mathematics (STEM) is one of the academic tracks under RA 10533 or the Enhanced Basic Education Act of 2013. This act adapts the implementation of the K-12 curriculum, which attempts to produce K-12 graduates who are "globally competitive" and gainfully employed. The so-called hope of the country is expected to acquire knowledge and skills in problem-solving, analysis of data, and application of evidences to make decisions.

The emphasis on STEM is borne out of the belief that STEM generally serve to catalyze society's growth and development. The STEM track, which will be taught using an interdisciplinary and applied approach, "is designed to produce graduates of secondary level who will take science, research, mathematics and engineering related courses in tertiary level and thereby add to the scientific and scholarly workforce of the country (Estonanto 2017).

Background and Rationale

Some Learnings from Year 1

The Year 1 generated important data as well as salient insights on how selected K3 to K6 basic education students perceived Science and looked at their levels of appreciation and the relevance of Science in their academic pursuits that could influence them to pursue a Science career or Science-related endeavors.

It covered the period January 2020 to February 2021. K3 to K6 students were specifically selected for the study because of the need to examine their formative years of Science education, which commonly starts on their third year of elementary education in the Philippines. Additionally, it further investigated on the following aspects:

1. The students' perception, attitude, awareness, and knowledge in Science;
2. The student's experiences in learning Science; and
3. The student's inclination to pursue Science.

Overall, Year 1 informs that K3-K6 students have neutral to positive perceptions about and attitudes on Science. They also exhibited neutral to positive scores on their awareness and knowledge in Science. This illustrates that Filipino K3-K6 students expressed neutral to positive sentiments to the statements measuring their (1) Perception about Science, (2) Attitude on Science, (3) Awareness of Opportunities in Science, (4) Knowledge about Science, (5) Perceived Competency of Science Teachers, (6) Parental Support in Learning Science, and (7)

Inclination Towards Scientific Opportunities. There were no statements that the students found negative.

Generally, K3-K6 students have a shallow understanding of science. This is quite understandable since they are just beginning their journey in the realm of Science. Most of them recalled terms that were taught inside the classroom but did not know how to characterize, explain, and even relate these with one another. Results indicate students' difficulty in absorbing science concepts and thinking about them in creative and innovative ways. The negative notions about science as a difficult subject are not new issues anymore, but it is important to note how such negativities can be dispelled by effective teaching. In other words, the skill of the teacher can make all the difference. While science is perceived to be a difficult subject, a good teacher can make it enjoyable for students, and amplify student interest.

However, Year 1 posed great challenges to the research team. When the research was conceived as early as late 2019, it was envisioned that all methodological procedures of the research would be implemented on an in-person face-to-face manner. Year 1 was greatly affected by the pandemic that has put to a brief standstill the main participants of the project – the schoolchildren and the schools. A reassessment of strategies had to be made because the project team had to shift to using online platforms in administering the interviewer-administered survey; conducting the FGDs with participating schoolchildren and the conduct of the Key Informant Interviews through online platforms using Google Meet, Zoom, and in some cases through phone calls, instead of the proposed face-to-face survey. However, these were challenges that was surmounted by the research team despite some delays and problems in getting all participants for the study.

Year 2

One of the aims of the K-12 science curriculum or what is called the new curriculum is to develop students' science literacy, which means understanding and relating concepts to everyday life. The new science curriculum is more explicit than in the old curriculum where the discovery method is used, and that teaching science in the new curriculum is easier because lessons start with the familiar and experience of students and lead towards concepts or the abstract. This method arouses the interest of students in the lessons because they can relate these to their environment.

For Year 2, the focus will be on K7 to K10 students. These are students who are in the age bracket of 11 years old to 17 years old. These are recognized as the teenage years. And the youth in this age range are now at the threshold of discovery. In school, they will be engaged in a multitude of educational activities that will provide them with opportunities to explore their aptitudes and skills in leadership.

But the pandemic is still here. Hence, for Year 2, the methodologies and instruments will be adapted to remote ways of data gathering. Year 2 will be facing the same challenges that were encountered in Year 1.

Concept for Year 2

Year 2 supplements the findings of the Year 1 study.

While Year 1 focused on the perceptions of K3 to 6 students, this project will generally inquire into the factors for pursuing a STEM or STEM related learning track. As junior secondary school students, it is assumed that the target participants of the research have had a general background and knowledge in their Science subjects taken up in K3 to 6 and will be in a position and a certain level of maturity to discern this early whether or not they will be interested to follow a science related degree.

Research Problem and Objectives

The major research problem that this project will answer is:

How and in what contexts will K7 to 10 students pursue a STEM or science related track in their studies?

Specifically, the objectives of this Year 2 projects are as follows:

1. To determine the interest and inclination of the students to take up science courses;
2. To identify the factors that will make the students engage in STEM subjects;
3. To explore the push and pull factors that will encourage students to pursue or not pursue STEM tracks, and
4. To find out the role of science teachers in facilitating or hindering the effective teaching of science.

Methodology

The above objectives will be achieved through a triangulated Research Design that will fuse together the results of quantitative and qualitative methods. Particularly, the project will employ online survey, FGD and KII, not to mention some records or documents review to enrich further the results of the study.

The coverage of the study will be nationwide with samples to be drawn from the regions that exhibited the lowest level of aptitude in science based on the PISA study. Survey respondents will total 1,200, while the FGDs will be done in both private and public schools, including science teachers. KII will be conducted among science experts, principals and coordinators.

Pre-tested instruments such as survey questionnaires, FGD and KII Guides will be used in data collection. Questionnaires and Guide questions will be drawn to capture the variables and concepts under study.