PROJECT PROPOSAL
2023 DOST-GIA FUNDING

I. PROJECT PROFILE

(1) Project Title: Deployment of DOST Technology on Versatile Instrumentation System for Science Education and Research (VISSER) among Selected Secondary Schools in Romblon

(2) Project Leader/Sex: Melchor M. Famorcan, Ph.D./Male
Agency: DepEd-Romblon Division Office
Address/Telephone/Fax/Email: Brgy. Capaclan, Romblon, Romblon/ mmfam_01@yahoo.com

(3) Cooperating Agency/ies:
DOST-PCIEERD, DepEd Romblon Division, Concepcion National High School (NHS), Corcuera NHS, Esteban Madrona NHS, Santa Fe NHS, Calatrava NHS, Alcantara NHS, Don Carlos MMMNHS, Cajidiocan NHS, San Andres NHS, San Jose Agricultural High School

(4) Site/s of Implementation
Base Station: Brgy. Capaclan, Romblon, Romblon, Region-IVB
Other Implementation Site (s): None

(5) Project Duration: 1 year for project implementation
2 years for monitoring of outcomes

(6) Total Project Cost: (indicate Counterpart Funds; use Form A for the Line-Item Budget)

Source of Fund / Site(s) of Implementation	PS	MOOE	EO	Total
A. GIA	PhP 273,576.00	PhP 251,410.00	PhP 722,000.00	**PhP 1,246,986.00**
B. DepEd-Romblon		PhP 127,000.00		**PhP 127,000.00**
TOTAL	**PhP 273,576.00**	**PhP 378,410.00**	**PhP 722,000.00**	**PhP 1,373,986.00**

II. PROJECT SUMMARY

(7) Rationale (Not to exceed one page)

Over 4,500 of the country's 13,000 high schools do not have access to a designated and well-functioning laboratory for their students. Out of these operational laboratories, 2,800 or 62% of which don't have access to more modern, and digital instruments. Although books can be used to teach science, learning is more successful when real-world examples are provided. However, due to the high expenses of buying and importing cutting-edge technology and instructional aids, specialized equipment that is required for experiments must be obtained separately and is frequently pricey.

In Romblon, 25 out of 49 schools offer a senior high school curriculum. Out of these 25 schools only 16 schools have STEM curriculum. These schools with STEM curriculum only have basic laboratory instruments that can only facilitate basic research and laboratory activities such as simple extraction, decolorization, filtering, heating, measuring, and mixing of solvents. This dilemma on top of the many challenges in Science Education such as shortage of science teachers and experts adversely affect the quality of teaching and learning of students. To address this gap, the DOST Philippine Council for Industry, Energy, and Emerging Technology Research and Development (PCIEERD) funded the development of a cheaper yet effective alternative to expensive laboratory machines and apparatus. This alternative technology is called VISSER.

VISSER, or the Versatile Instrumentation System for Science Education and Research, is developed by researchers from the University of the Philippines-Diliman. It is a hand-held device and a research-grade laboratory system intended for use by high school students in the STEM track. The VISSER basic set contains sensors and modules designed for experiments following the K-12 STEM curriculum. It has over 60 experiment modules in the disciplines of biology, chemistry, physics, engineering, and environmental science. VISSER is more affordable compared with other imported science laboratory systems available in the market. In view of enhancing the Philippine's science education and research, this project is being forwarded.

(8) Project Description (Not to exceed 15 pages)

This project aims to deploy VISSER, a DOST-funded technology, to 10 priority schools that are struggling in teaching Science and research due to lack of appropriate laboratory equipment, tools, and materials. It intends to replace traditional teaching aids such as Manila papers and dioramas with more modern tools such as the VISSER technology. Though textbooks, lectures, and demonstrations facilitate learning, hands-on experiences are proven more effective. Lab experiments that show how Science concepts work in real life can pique students' interest and curiosity and can facilitate retention and analytical thinking more profoundly. Learning becomes more fun, and students become more interested in pursuing careers in Science, Technology, Engineering, and Mathematics (STEM).

On top of the provision of VISSER kits, this project will involve VISSER's users training to teachers who will manage the laboratory at each school. Training resource persons coming from UP-Diliman will demonstrate how to use the kit and its modules to facilitate Science teaching and reinforce learning. This project will be conducted in partnership with the Department of Education Romblon Division Office together with the management of the priority schools namely:

1. Concepcion National High School
2. Corcuera National High School
3. Esteban Madrona National High School
4. Santa Fe National High School
5. Calatrava National High School
6. Alcantara National High School
7. Don Carlos M. Mejias Memorial National High School
8. Cajidiocan National High School
9. San Andres National High School
10. San Jose Agricultural High School

In the Philippines where human resources in the field of STEM are scarce (only 189 scientists per million, Merlyn Mendioro, 2019), ensuring competent science education will help in cultivating our youth's passion to contribute to our country's progress founded on STEM.

OBJECTIVES (General and Specific)

The general objective of this project is to deploy the VISSER technology and put modern science laboratories to enhance science education and research among the priority schools selected.

Specifically, it seeks to:

1. award 10 units of VISSER kits to the 10 priority schools under DepEd-Romblon Division;
2. tap the technology developers from UP-Diliman to provide VISSER's users training to teachers who will operate the kit;
3. conduct users' training to the teachers assigned from school-beneficiaries;
4. serve at least 30 students from each school-beneficiary through the VISSER kits;
5. increase awareness and appreciation of students on STEM and research subjects by at least 30%; and
6. strengthen partnership with project stakeholders.

METHODOLOGY

The project will be funded under the GIA program of DOST-MIMAROPA. Once this project proposal was evaluated, finalized, and recommended for approval, securing the regional director's approval and finalization of budgetary requirements will follow. Meanwhile, the PSTC-Romblon would organize project meetings, and orientation to the stakeholders of the project. Memorandum of agreement between the DOST-MIMAROPA and the DepEd-Romblon Division will be forged and signed after both parties confirmed their commitments to the project. Subsequently, the DOST-MIMAROPA will be in-charge of the procurement of the VISSER kits, and the conduct of users' training for the teachers. The DepEd-Romblon Division on the other hand would identify and designate at least 1 teacher from each priority schools who will be assigned to maintain the kit and serve as coordinator for the project. To jumpstart the project, the PSTC-Romblon in partnership with the DepEd-Romblon Division will organize an event for the awarding of the VISSER kits and the users training. The event will be a 3-day activity where assigned teachers from

each priority school will be gathered and involved. The first day of the event will be the awarding of the kits and the next two days will be allotted to train the teachers on how to use the kits and its modules. Resource persons from the UP-Diliman as technology developers will be invited to provide the training. After the training, each priority school will be advised to conduct their own echo trainings to their students under the STEM curriculum. These echo trainings will be the counterpart of the priority schools. The PSTC-Romblon on the other hand will assist during these echo trainings to ensure knowledge transfer among students. Provision of a designated area as part of the laboratory space will also be the counterpart of the school-beneficiaries. The PSTC-Romblon will also assign a staff to closely monitor the project and ensure the deliverables are met. Towards the end of project duration, impact assessment will be done by the PSTC-Romblon to measure its success.

EXPECTED OUTPUTS

Publication	None
Patent/Intellectual Property	None
Product	None
People Service	10 teacher-coordinators from school-beneficiaries 300 students (30 students/school-beneficiary) 1 DepEd-Romblon Division coordinator
Place and Partnership	DepEd-Romblon Division
Policy	None

EXPECTED OUTCOMES

1. deployed 10 units of VISSER kits to the 10 priority schools under DepEd-Romblon Division
2. deployed at least 2 experts from UP-Diliman to provide VISSER's users training to teachers who will operate the kit
3. conducted 1 users' training to at least 10 teachers assigned from school-beneficiaries
4. served at least 300 students the school-beneficiaries through the VISSER kits
5. increased awareness and appreciation of students on STEM and research subjects by at least 30%
6. strengthened partnership with project stakeholders.

PERCEIVED IMPACT

Social Impact

1. improved STEM teaching among the priority schools
2. increased awareness and appreciation of students on STEM and research subjects
3. empowered teachers to administer STEM teaching using modern laboratory technology

Economic impact

1. increase in the number of human resources in the field of STEM to help in spurring our country's progress that is founded on STEM

SUSTAINABILITY PLAN

Monitoring of the project during the implementation will be done by PSTC-Romblon. The assigned staff from the PSTC in partnership with the DepEd-Romblon's project coordinators will ensure that the assistance provided are utilized to the maximum and all project deliverables are realized according to schedule. Outcomes and impacts of the project will also be recorded, analyzed, and evaluated for policy making, and future project endeavors that would adapt similar methodologies. The DepEd-Romblon Division Office will also be enjoined to create a memo that recommends the 10 priority schools to regularly use and maintain the VISSER and the other secondary schools to adopt the said technology.

(9) Workplan (See Form B)

(10) Project Management (not to exceed one page)

The project will be implemented by the DOST-MIMAROPA through its PSTC-Romblon with close partnership with the DepEd-Romblon Division Office. The project team will oversee the implementation of the project. The DepEd-Romblon and the school-beneficiaries will provide focal persons to manage the use and maintenance of the technology at their respective schools. The PSTC-Romblon on the other hand will provide another staff to assist and directly oversee all the activities relative to project implementation.

III. ATTACHMENTS (Please refer to the DOST-GIA Guidelines for the necessary documents.)

Prepared by:

MELCHOR M. FAMORCAN, Ph.D.
Officer-in-Charge Chief, Curriculum Implementation
DepEd-Romblon Division Office

Endorsed by:

MARCELINA V. SERVAÑEZ
Provincial S&T Director
DOST Provincial Office Romblon

Approved by:

DR. MA. JOSEFINA P. ABILAY
Regional Director
DOST-MIMAROPA