PROJECT/ACTIVITY REPORT

Project Title:

Praxis translating theory into practice for the effective training of geoscientists and environmentalists.

Project Coordinators:

Elikplim Abla Dzikunoo

Abdul-Samed Aliou

Project Dates:

9th – 11th December, 2019

Report Date:

January, 2020

Executive Summary

The "*Praxis, translating theory into practice for the effective training of geoscientists and environmentalists*" was organized as a 3-day geophysics field school with the aim of providing free training in geophysics to upper level undergraduate students, graduate students and geoscience workers. The programme received monetary support from the Danida Alumni Network under the flagship Activity Grant programme. The main objective of the programme was to allow participants to have a feel of the practical aspect of geophysics with special emphasis on the right data acquisition and processing techniques.

Geophysical surveys were conducted on University of Ghana campus using different equipment to measure various geophysical parameters including,

- ABEM Terrameter LS to measure resistivity
- GEONICS EM-34 to measure ground conductivity
- MountSopris MGXII borehole logger to measure down-hole resistance
- Magnetotellurics to measure ground conductivity
- Magnetometer to measure magnetism

Field measurement and data processing sessions were facilitated by professionals who apply the various methods in their daily lives.

On the whole the programme was received well, with calls to have it organized again.

Introduction

The "Praxis translating theory into practice for effective training of geologists and environmentalists" was a 3-day geophysics field school aimed at offering students and practitioners of geophysics, the opportunity to experience and learn the practical aspect and proper application of geophysics; complementing the extensive theoretical knowledge already acquired.

The idea of the field school was born through the interaction of the organizers with Danish scientists. During this time, we recognized the need to introduce a platform for instruction on proper field processes.

The field school was held at the University of Ghana campus, with practical sessions organized at the botanical gardens of the University. Participants were engaged in data collection, processing and interpretation using equipment including EM-34 and Magnetotellurics (for Electromagnetic surveys); LS Terrameter for resistivity/conductivity among others.

Participants were guided through the period with a manual and by experienced geophysicists on the use of different geophysical methods using different equipment.

It must be noted that, the project received significant contribution from the Water Research Institute – Council for Scientific and Industrial Research (WRI – CSIR). The institute provided us with equipment and resource people to help facilitate the field school.

Activities

The field school was held over a 3-day period with activities as follows,

1. Day 1 – Participants spent the first half of the day going through the basics of geophysics, to refresh some minds on what the subject entails and the rationale behind all geophysical procedures.
   The second half of the day saw participants begin with the field work to collect data.
2. Day 2 – Participants continued with field data collection
3. Day 3 – Participants were taken through processing, analyzing and interpretation of the various geophysical datasets they had collected in the field.

Personnel

Most of the instructors and assistants who took part in the field school did so charitably. A total of 11 personnel assisted in organizing and facilitating the field school. The portfolio of personnel ranged from lecturers, senior researchers, and research assistants to PhD candidates. The PhD candidates (Mr. Fynn and Miss Addai) form part of the DANIDA funded GhanaAqua project in the Department of Earth Science (University of Ghana) while Mr. Akurugu is a PhD candidate on a DANIDA funded project with the WRI – CSIR, Ghana.

Accomplishments

1. First ever geophysical field school was organized in the Department of Earth Science, University of Ghana
2. Certificates were issued from the Department of Earth Science, University of Ghana.

Challenges

1. The initial plan was to conduct field surveys on a site located out of Accra (the capital) however, upon further discussions and consultations it was agreed that the constraints on logistics will not allow for that.
2. Some equipment were old and malfunctioned.
3. Timing of the programme as this clashed with some end of semester exams which had been re-scheduled without the knowledge of the organizers.
4. Minor challenges with providing accommodation for students from outside Accra. They were however housed on campus through the benevolence of a facilitator.

Participation Criteria and Participant Evaluation

Initial plans were to admit a total of 20 participants into the field school. However, because of the good number of interested applicants (totaling 58) the slots were increased to 30 participants, with over 34 actually attending.

In order to validate the application process and to encourage participants to follow the laid down rules of engagement, only verified participants were given Certificates of Participation at the end of the 3-day programme.

Out of these, 10 participants completed the online observation form. The general consensus was that the programme was a good initiative which they benefited from, with all participants suggesting that the duration for subsequent field schools should be increased to allow for better learning opportunities. The detailed results of the evaluation are presented in Appendix 1.

Acknowledgements

The team will like to acknowledge the immense contribution of individuals and organizations that contributed to the success of the programme. They are as follows,

1. Department of Earth Science, University of Ghana
2. Dr. Thomas Armah (Department of Earth Science - University of Ghana)
3. Prof. Sandow M. Yidana (Department of Earth Science - University of Ghana)
4. Dr. William Agyekum (WRI – CSIR, Accra)
5. Mr. Patrick Amankwah Mainoo (WRI – CSIR, Accra)
6. Mr. Francis Okai (World Vision – Tamale)
7. Mr. Obed Fiifi Fynn
8. Mr. Bismark Awinbire Akurugu (WRI – CSIR, Accra)
9. Mr. Richard Mejida Adams (Department of Earth Science - University of Ghana)
10. Miss Millicent Obeng Addai (Department of Earth Science – University of Ghana)

NB

A Dropbox link which contains selected photos and videos from the Geophysics Field School is below,

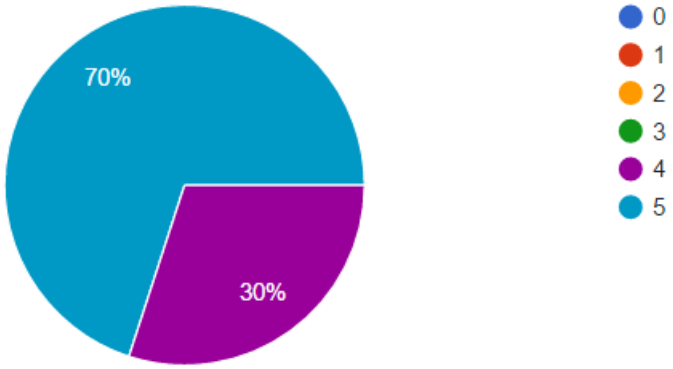
https://www.dropbox.com/sh/qs5hfp1bbmhen5i/AAATUvRAXtMrE-7gffWxJArRa?dl=0

APPENDIX 1

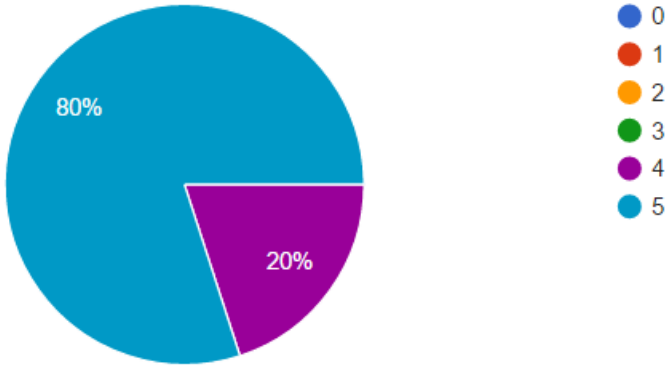
Appendix 1 - Summary of Programme Evaluation (N = 10)

Rate all activities on a scale of 0 - 5, with 0 being the lowest and 5, the highest.

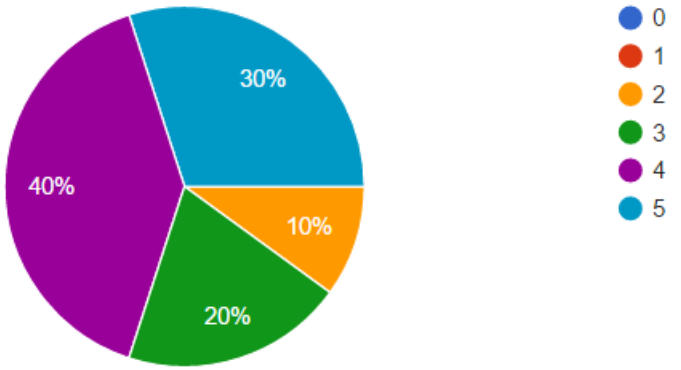
1. Introductory Sessions



2. Field Practical Activities

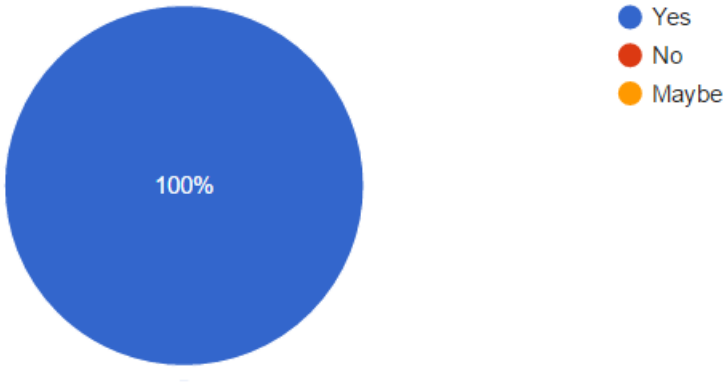


3. Data Processing Sessions

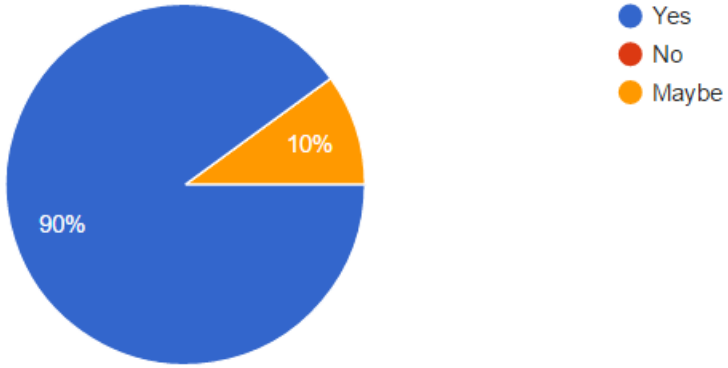


Kindly answer Yes, No or Maybe for the following questions.

4. Did the field school live up to your expectations?



5. Was the field manual provided helpful?



6. What would you like to see done differently for subsequent editions?

General Theme	**% of respondents**
Increase duration of field school	100
Specialize in fewer geophysical methods	10

7. General Comments

General Theme	**% of respondents**
Helpful programme	90%
Good rapport with trainers	10%