

Report about NASE AFRICA programme developed by NASE in Africa in 2013-14

Summary

NASE organized two courses for secondary school teachers and university students (future teachers) in Kenya and Ghana in cooperation with the NASE Local Working Group (NASE LGW) that will continue working in astronomy education in their countries in coordination with NASE after these courses. They continue organizing other astronomical activities in their countries (courses, seminars, festivals, performances, workshops and the basic NASE course too).

- Local Organizer Institutions in Kenya was the Nairobi University and we teach the NASE course in its campus in cooperation with Stanford University under NSF and NASA funding as part of the ISWI program.
- Local Organizer Institutions in Ghana were Ghana Space Science and Technology Institute and Ghana Atomic Energy Commission in cooperation with Ghana Association of Science Teachers and Ghana Planetarium in Accra where we organized a session of the course.

The courses and materials were carried out in English

<http://www.naseprogram.org/>

Objectives satisfied

We verify the objectives that we propose in our OAD application

GENERAL OBJECTIVE:

It had been covered the objectives on training teachers in astronomy topics with special emphasis on the transmission of specific tools that allow teaching concepts of the discipline in any curricular area of secondary level education.

SPECIFIC OBJECTIVES:

- Show the interdisciplinary nature of natural sciences and especially of Astronomy. In particular we introduce contacts with culture and astronomy in the country
- Transmit accurate concepts regarding the issues addressed by Astronomy. Discussions about misconceptions took place during the course, in several activities
- Facilitate learning tools for teaching Astronomy to secondary teacher in any curricular area. Including discussions about topics that should be included in curricula
- Provide training in the construction and use of simple instruments for astronomical observations (such as sundials, astrolabes, quadrants, goniometers, celestial charts, spectroscopes, telescopes, between others). Participants produce some of them themselves
- Promote and maintain a net of teachers in and between the countries where the course is given, in order to continue with this program beyond the presence of NASE members.

Target Audience

Our Target Audience is Secondary school teachers and in some cases university students and post graduated.

- Our participants in Kenya were secondary school teachers and university students in the last year of their degrees.
- Our participants in Ghana were secondary school teachers and some post graduated students too.

NASE Project verify Strategic Plan

Taking into account the main objectives of the Strategic Plan, is possible remark that this Program act on all the education levels, and has a big impact because:

- Universities, governmental departments of education, planetariums and teachers associations are involved (this depends on the characteristics of each country)
 - University of Nairobi
 - Ghana Space Science and Technology Institute.
 - Ghana Atomic Energy Commission
 - Ghana Association of Science Teachers
 - Ghana Planetarium in Accra
- NASE create a local NASE-group in each country. This group of professors and teachers will continue with astronomy activities in the country using our materials and other materials created by them.
 - Kenya members: 7 teachers and professors
 - Ghana members: 15 teachers and professors
- Courses involved:
 - Kenya course: 20 participants and 7 members of NASE Local Working Group (secondary school teachers and university students)
 - Ghana course: 25 participants (secondary school teachers) and 5 members of NASE Local Working Group (secondary school teachers)
 - In total, about 6000 students involved in NASE program per year (in average a secondary school teacher teach 200 students per year)

Project implementation

NASE project works focus on basic astronomy courses for teachers. Our courses were of 3 or 4 days teaching several activities. These activities were distributed in 4 lectures, 10 workshops, 2 working groups for discussions, a couple of observations (depending on the weather of course) and an astronomical visit to an archaeological site, astronomical aspects of a building of city or cultural events related astronomy. In particular in our courses we visit in this occasion the Nairobi University Campus (orientation of buildings from an astronomical point of view) and the Planetarium of Ghana in Accra.

Two NASE members visit Kenya (Dr. Rosa M. Ros NASE president and Dr. Mirjana Povic) in order to work very close with the NASE group in the country (Dr. Paul Baki, Susan Murabana, Dr. John Buers Awuor, Dr. Dismas Wamalwa, Leggesse Kebede and Mr. Goffrey Okengo members of Local NASE group NASE-LWG in Nairobi). We teach the course with them (50% of activities by NASE members from abroad and 50% teach by local NASE group members). Our goal is that local NASE group can work themselves in the future.

Two NASE members visit Ghana (Dr. Eder Viñuales NASE treasurer and Dr. Mirjana Povic) and they worked with NASE Local Working Group in Ghana created in our 1st visit in 2012. In this occasion 7 members of this LWG teach with us the 50% of the course (Mr. Proven Adziri, Ms. Savanna Nyarko, Ms. Yaa Asenso, Mr. Solomon Lomotey, Mr. Bismark Kushiator Dr. Mrs. Nana Klutse and Mr. Prosper Nyassor. The NASE-LWG involve 15 people in total, 8 more that the 7 members mentioned before.

Structure of the Basic course:

Participants were divided in 2 groups in order to work in small groups for workshops and participants receive a more personal attention.

The course comprised 3 days in Kenya and 4 days in Ghana of classes about basic astronomical concepts included in secondary school curricula. Simple observations that teachers can do in class, were included.

Every day a lecture could take place and 2 workshops about practical activities were carried out in the classroom without special instruments, or using devices produced for the teachers themselves and software free of charge. Also, during the course, 2 General Working Groups for discussions were organised.

Every participant received a copy of all PowerPoint presentations and the digital material that they will need. Also these materials are available in NASE website.

This website is supported by NASE WG of IAU and its members (IAU members and secondary and primary school teachers cooperate with NASE). Several participants in the NASE courses sent us their reports about the activities that they carried out after the course

<http://www.naseprogram.org>

Local facilities:

Local Organisers facilitate the place where the course session took place, list of participant teachers and participants university students, provided materials necessities for the course in a coordinated way with NASE WG according NASE application to OAD.

IAU paid travel expenses of NASE visitors.

Local Organisers cannot offer subsistence and accommodation to NASE visitors, then IAU paid (by means of the OAD grant gave to NASE) their expenses in Kenya and Ghana and also supported the travel expenses and meals of participants in the Ghana course.

Project timeline

We cannot verify the timeline proposed because the countries contacted decided to cancel our course several times. This is a special situation that we discover in Africa and that normally we did not have in other continents.

We want to recognize the help receiver by means of OAD and in particular JC Mauduit and Kevin Govender about to try to achieve concrete dates for NASE course and also to get that people involved in different countries replied emails.

We received facilities from OAD in order to organize one of our two courses during 2014.

We planned the 1st course according our timeline during first month of 2013 and the course was developed in October 2013 because this period was the most appropriated for schools in Kenya.

October 24-26th, 2013, Nairobi, Kenya

The second course in 2013 was cancelled because the country where we planned the course cannot organize it. At the end of 2013 we begin to work with Ghana in order to teach the course in Accra and we do it in July 2014.

This was the second edition of NASE courses in this country and the results for the course were very positive. In our program we plan to repeat our courses twice or three times in the country in order to support the NASE LWG much more.

July 28-31st, 2014, Accra, Ghana

Project evaluation

As part of NASE courses a very detailed questionnaire was replied by participants during the last day. In it, the questions are about the didactics, contents, utility of the topics, interests, and with the aim to receive the critics from the participants and the proposals to improve the Program. The results of the full questionnaires are in the annex of this report and in the website. But as summary we include here the result of the 2 key questions about the course:

* *The level of activities has been:*

too low *too high* *satisfactory*

Kenya course: 95% satisfactory, 5% too high

Ghana course: 100% satisfactory

* *The subjects, have met your expectations?*

very well *well* *poor* *very poor*

Kenya course: 90% very well, 10% well

Ghana course: 45% very well, 50% well and 5% poor

* *What is your opinion about the usefulness of the course to their teaching?*

very useful *useful* *not very useful* *useless*

Kenya course: 100% very useful

Ghana course: 86% very useful, 14% useful

After the questionnaire we organize a working group in order to talk about the situation of astronomy education in the country. Participants have the opportunity to include some comments about the course in this working group. The conclusions session and its contents are included in the annex and in the website













More details:

http://sac.csic.es/astrosecundaria/en/cursos/realizados/reglados/039_nairobi_2013/ListaDocs.php

http://sac.csic.es/astrosecundaria/en/cursos/realizados/reglados/052_accra_2014/ListaDocs.php

Project budget (Please provide a full breakdown of all expected costs of the project including taxes. An example of possible budget items is outlined in the table below but you may modify this as required for your project):

We received from IAU OAD TF2D an economic help to give some astronomy courses for teacher training in African countries.

The aid received net was € 4,991.00

In 2013 the expenses we had in the concept by which we granted financial aid are as follow:

A) Travel to Kenia in November 2013 of Dr. Rosa M^a Ros and Dr. Mirjana Povic.

MIRJANA

Travels & Flights:

Madrid-Cairo-Nairobi-Cairo-Barcelona-Madrid 516,61€
 Granada-Madrid 21,12

Hotel: en Nairobi15200 kenyan shillings 131,18

Official documents: visas and permits 40+15,56+11,77=67,3 67,33

Restaurant: Nacese Resource Centre Restaurant 15,20

Total in euros: 751,44 €

ROSA

Travels & Flights:

Barcelona- Zurich-Nairobi-Bruselas-Barcelona 685,35 €
 Taxi to Barcelona airport 29,95

Hotel: en Nairobi18240 Kenyan shillings 157,42

Restaurant: Nacese Resource Centre: 14,60+3,65= 18,25 18,25

Official documents: visas and permits 40+11,77x3=75,31 75,31

Total in euros: 966,28 €

BANK FEES

For account maintenance for the visa and for different operations... **221,65 €**

TOTAL EXPENDITURES IN 2013 1939,37 €

TOTAL REMAINING 3051,63 EUROS

We have at your disposal all the bills of payments we have made and detailed above.

In 2014 the expenses we had in the concept by which we granted financial aid are as follow:

B) Travel to Ghana in July 2014 of Dr. Ederlinda Viñuales and Dr. Mirjana Povic.

In 2014 the expenses we had in the concept by which we granted financial aid are as follow:

B) Travel to Ghana in July 2014 of Dr. Ederlina Viñuales and Dr. Mirjana Povic.

Travels & Flights and visas of Mirjana&Ederlinda:

Madrid <=> Casablanca <=> Accra	1.203,50 €
Mirjana: Granada => Madrid	139,88
Mirjana: Madrid => Granada	144,64
Eder: Zaragoza <=> Madrid	63,90
Visa of Eder	84,82
Visa of Mirjana	83,80
Suitcase of Mirjana Iberia go&back	60,00
Taxis Mirjana&Eder 38+30	68,00
Materials for workshops	44,70

Total in euros: 1893,24 €

TOTAL EXPENDITURES OF INSTRUCTORS IN GHANA IN 2014: ... 1893,24 €

THE TREASURER OF NASE, Dr. Ederlinda Viñuales, HANDED 1.000 €, on July 28, TO Dr. Nana Ama Browne Klutse of the Ghana Space Science and Technology Institute FOR BOARD AND LODGING EXPENSES FOR STUDENTS ATTENDING THE COURSE.

BANK FEES

For account maintenance for the visa and for different operations... **170,0 €**

TOTAL EXPENDITURES IN 2014: B) 3.063,94

TOTAL REMAINING 0 EUROS

We have at your disposal all the bills of payments we have made and detailed above.