

**Progress Report**  
**Gonder science center**  
**(October 2013-February 2014)**



**I. Introduction**

Gonder Science center was inaugurated on October 30, 2013. The center was funded by The Gelfand Family charitable Trust and implemented by American Jewish Joint Distribution Committee (AJJDC). The first and foremost center's objective is for students to understand the basic principle of science, Technology, Engineering and Math (**STEM**) and related science concepts and application to enrich them with hand on practice. The trainees come from KG, primary, secondary and preparatory schools in Gondar city and surrounding towns. The center's ultimate goal is to harvest young scientists which will eventually solve the society's problems scientifically contribute more to globally.

At the Gonder science center there are seven labs but currently only four are fully equipped & operational and the remaining three labs are awaiting equipments to be functional. We hope and look forward it would be fulfilled soon. The labs which have been equipped and giving service are Electronics, Optics, Mechanics and ICT labs. Each lab has a sitting capacity of maximum 20 seats at a session.

The center's core teaching methodology is being conducted through experimental practices and demonstrations by using our rich expert's knowledge and with new lab resources. Student Curriculum development is based on Ethiopian Ministry of Education system. As the theoretical part is being covered in the students regular school/class this will reduce the burden of the center and we focus only on lab session. We motivate students to do research on physics topics in recognition of currently undergoing projects. The selection criteria are based on student merit. Some of criteria are GPA result of science subjects, creative nature, being member of science club at their school and their respective schools criteria etc.

Assessment is done for those who are registered to attend practical session. They must sit for pre-test exam in order to know their status of prior science knowledge. Ask them to fill questioners to evaluate teaching-learning process. At the end they must sit again for post-test exam. This helps us to understand the depth of what they observed, what they acquired during their stay, what science skills they got and principles they applied.

In Gonder city there are more than 40 schools but based on our capacity we has selected three schools namely Meseret 1<sup>st</sup> cycle primary, Debreselam Kindergarten, primary and 2<sup>nd</sup>ary, Waliya Primary schools. We visited many schools and their labs and observed all of them need help on practical activities. We received 40 students based on the above criteria from three schools with a total of 120 selected students.

Numbers of students currently registered by the center are 120 which come from three schools namely Meseret 1<sup>st</sup> full cycle, waliya and Debreselam primary schools. We are preparing to start for secondary and preparatory class for the coming summer vacation. Meanwhile in parallel, we are developing curriculum and lab manual for Grade 9-10

and 11-12 and also we have prepared rooms for those who are interested in project work. We will start KG Saturday program as soon as we got kid's materials from Gelfand Family Charitable Trust.

Starting end of January we gathered student information like number of students from 7,8,9,10,11 and 12 Grades, Number of sections, member of registered science and technology club, theoretical class schedule and etc. This data is helpful for our the center to prepare our yearly plan.

We had several discussions with some of the school principals regarding establishment of science center in their schools if they don't have one and center's objective objectives and current plan and how they can benefit from this. We also arranged visits of the center following the inauguration ceremony. They told us they will do their utmost to link with the science center as it is commitment to assist in practical training which they lack and is more in-line with their theoretical class science topics.



Fig. Grade 7 and 8 students in Optics Laboratory.

## II. Short Term plan

- 1) Begin kid's Saturday program.
- 2) Design, simulate, Test, construct and develop prototype student's project.
- 3) We try our best to use the center at full capacity of resource and expert's knowledge.
- 4) Give practical training and workshop for science teachers.
- 5) Ensure effectiveness of the center and deepen integrated work with stakeholders.

Gonder science experts got one week on site training and experience sharing with foka science and Engineering center experts which was held in Debrezeit for a week. We had excellent time and grasp rich Lab skills and knowledge. In general it was fruitful and productive for our future career. We expect also to share different experience from other similar center.

Regarding the Pilot program which we are currently running based on the advice of Ato Getachew to be based on the current resource and shift nature of schools in Gondar. He recommended starting practical class for Grade 7 and 8 students in line with their regular class which we are applying.

We crafted experimental procedure tailored with what they are taught in in their theoretical class. The pilot program for Grade 7-8 started on February 11, 2014 and will continue up to May 17, 2014. They have already sat for Lab pre-test theory exam and they have began practice on Lab safety and are on their first experiment. One of many ways of learning STEM concepts are watching Science related documentary. Before and after practical class is held in the auditorium and we observed that they got interested and amazed with science finding and inventions.

Every Friday the science center has opened its doors for visitors especially for all kindergarten, primary and preparatory schools students and others who are interested.

In this globalized world Gonder science should do more exposure to the student community and stakeholder via Internet. We are to build and launch center website and our ICT Lab is undertaking these urgent tasks.

### III. Long term plan

- 1) To become a model science center.
- 2) We should encourage schools to provide practical thought for all students specially STEM disciplines and teach them on the spot by excite student's hand-on activities on mobile labs.
- 3) We should harvest creative student via science fair competitions.
- 4) Go beyond urban and work with schools which were built JDC.
- 5) Establish a pool for science centers linkage.
- 6) Ensure sustainability of program and to make Gonder science center a center of excellence.

Weekly program schedule is as follows.

#### Weekly Schedule

Days Time	Monday	Tuesday	Wednesday	Thursday	Friday
Morning 2:30-6:00	Preparing Lab Manual and Test Experiment	Lab for Meseret Fullcycle Primary School 40 Students.	Preparing Lab Manual and Test Experiments	TBA Reserve & to be Assigned for Any work	Visiting for requested schools
Afternoon 7:30-11:30	Special Student STEM Project testing & construction	Lab for Waliays Primary School 40 Students	Special Student STEM Project testing & construction	Lab for Debereslam Primary School 40 Students	Expert's Pre-lab Experiment Verification for Grade 9-12

#### **IV. Achievements so far**

- 1) Now we have four active Labs giving service.
- 2) Collaborated with different primary and high schools principals.
- 3) Drafted and designed experimental Lab manual for Grade7-8 and also we are doing weekly based programs in parallel.
- 4) Launch pilot program for Grade 7-8 students comes from private and government schools.
- 5) Started project works with students who came from Fasildes Preparatory school.
- 6) Student and teachers are doing STEM concept in practice.

#### **V. Draw-backs**

- 1) Till today we don't have Electric power and we are complaining to official of EEPCO and city administration. Currently we are using electricity from nearby society.
- 2) We applied to get Broadband internet but till now we didn't get. Ethio telecom promised to give service in near future.
- 3) Not getting the above two key infrastructure facility is the hindrance to related tasks which can be done through them. We are struggling and involving Gondar City officials to help to overcome these problems.