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Education Consortium for the Advancement of STEM in Egypt (ECASE)

QUARTERLY PROGRESS REPORT

July - September 2014

EGYPT STEM SCHOOLS

A PORTAL FOR THE EGYPTIAN STEM SCHOOL NETWORK



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QUARTERLY PROGRESS REPORT JULY – SEPTEMBER 2014

Education Consortium for the Advancement of STEM in Egypt (ECASE)

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Acronyms

| | |
|---------|--|
| 21PSTEM | The 21 st Century Partnership for STEM Education |
| ACT | American College Testing (exam) |
| AIP | Annual Implementation Plan |
| AUC | American University in Cairo |
| BOT | Board of Trustees (school) |
| COP | Chief of Party |
| DCOP | Deputy Chief of Party |
| ECASE | Education Consortium for the Advancement of STEM in Egypt (USAID) |
| EGP | Egyptian Pounds |
| GOE | Government of Egypt |
| GTM | GoToMeeting |
| HR | Human Resources |
| ICT | Information and Communications Technology |
| MAP | Management Assessment Protocol |
| M&E | Monitoring and Evaluation |
| MOE | Ministry of Education |
| MOHE | Ministry of Higher Education |
| NCEEE | National Center for Educational Evaluation and Examination |
| PARLO | Proficiency-based Assessment and Reassessment of Learning Outcomes |
| PAT | Professional Academy of Teachers (MOE) |
| PD | Professional Development |
| PMP | Performance Monitoring Plan |
| SCOPE | Standards-based Classroom Observation Protocol for Egypt |
| SEPUP | Science Education for Public Understanding Program |
| STEM | Science, Technology, (Engineering), Math |
| STTA | Short Term Technical Assistance |
| TIES | Teaching Institute for Excellence in STEM |
| TFI | The Franklin Institute |
| WL | World Learning |
| US | United States of America |
| USAID | United States Agency for International Development |

Preface

As we reached the last quarter of this second year ECASE began to witness a remarkable improvement in the implementation environment from the year before. While during the first year and most of the second year ECASE was catching up to the existing schools, managing and navigating the turbulent times in Egypt, coping with their opening and operations of the schools as we reached the last quarter of the second year, and after the curriculum was completed, ECASE began to witness the advancement and growth of systems that could leverage and begin to maximize previously exerted efforts on the ground.

ECASE achieved significant milestones throughout the first two years and it has a STEM Model through implementation that is ready to be replicated.

USAID Wind-up and Roll-back

In October 2013, a notification was received from USAID instructing ECASE to give sufficient time and resources to existing activities to allow for their orderly closure, and in some cases completion, to minimize/limit expenditures to those necessary wind-up programs and not initiate any new activities. This meant concentrating only on the existing two schools and stopping all efforts to open new schools, not even in the future.

This notification had a major impact on the project activities. In addition to taking time explaining the specific nature of ECASE activities, it took the project time to present a new Annual Implementation Plan that curtailed all but essential activities in general and specifically with respect to new schools and set a project closer date for the end of the 2013-14 school year. ECASE submitted its new Wind-up AIP to USAID for approval and proceeded with this plan with a sole focus on the current two schools. Accordingly, the award was modified as a result of the Wind-up and a modification was put in motion to accommodate these changes.

In March 2014 ECASE received another notification from USAID instructing it to resume its project efforts as originally designed and awarded, without the Wind-up Plan. This required ECASE to return all activities under the project to their originally planned and approved program description, implementation schedule, work plan and budget. As a result, in April 2014, ECASE submitted a revised AIP that rolled it back to its original form, most importantly including the new schools.

The Wind-up, followed five months later by the Roll-back to original form caused ECASE lose valuable time in its implementation. Not only did ECASE have to reduce and retract its efforts but it had to restart and activate the now dormant activities five months later which took time. This resulted in an unavoidable delay generally and in particular for the new schools. It became nearly impossible to start new schools in September 2014 primarily due to this reason. Also, other activities related to new schools such as school specialization and mapping, outreach to preparatory schools, PPP work, implementing an admission system, in addition to other activities were put on hold or significantly negatively affected by the Wind-up process. The remaining but narrowed activities in the Wind-up period had to be reduced to focus on their implementation within the limited period of project time left.

There were Activities and Tasks that could not be implemented during the Wind-up and they were as follows:

Objective 1: Increase student interest, participation, and achievement in science and mathematics with a special effort geared to underrepresented groups such as girls and economically marginalized students

1.1 Implementing an admissions system that is transparent, inclusive and criteria-based

1.2 Promoting the STM School within the surrounding community

Promoting parent involvement through a school-level STM Board of Trustees:

Educating and mobilizing STM community advocates:

1.4 Outreach to Egyptian Preparatory Schools

Discovering Science Program:

Science Education for Public Understanding (SEPUP)

Objective 2: Strengthen the STM School local initiative through developing an effective model of specialized high schools focusing on science, technology and mathematics for gifted students

2.1 Tailoring the STM School to the surrounding community through school specializations

Other activities, although implemented, were significantly slowed such as the establishment of PPPs. The instability of the process caused delays and slowed being able to achieve the desired results.

Challenges within the MOE

In its contract agreement ECASE is setup to work with the STEM Board as its primary counterpart in taking decisions related to the operation of the schools. The Board functioned during the first year with guidance from its Chairman, Dr. Amr Ezzat Salama, who led its stewardship, joined trips to open new schools, facilitated negotiations between the MOE and the Supreme Council of Universities and exerted pressure on both its branches to allow for the STEM schools graduates access in public universities, coordinated implementation efforts with USAID and provided overall guidance. During its second year of implementation ECASE Dr. Salama reduced his active role and after some time of indecision the Board was ultimately headed by the Minister of Education which brought another set of much needed services to the schools, most prominently the scholarships with private universities. This shift in leadership helped the schools but also necessitated the presence and development of an unplanned intermediate executive body who would be responsible for receiving the necessary know how from the ECASE consultants and working with ECASE to help sustain activities within the schools beyond ECASE.

The schools, since their establishment, have been operating under a contract between the MOE and an independent entity that is contracted to pay salaries to teachers and administrators and provide maintenance activities to the schools premises. School operating costs were initially provided in part by the Misr El Kheir NGO during the first year. Even so, during that first year ECASE had to intervene on a regular basis to provide necessary operating items to the schools to ensure their uninterrupted operation and that activities were implemented according to the school schedule. These expenses varied in range and type, from necessary equipment to materials for capstone projects and classroom needs. Because MEK stopped its support to the schools after the first year and due to the nature of the fixed contract between the MOE and the independent entity that is negotiated on a yearly basis, the second year witnessed more expenditures on the schools by ECASE to ensure their proper and timely operations. While ECASE strives to involve the

Ministry more into the daily operations and expenditures made and needed by the schools, the MOE resources have been limited to the amount of the contract signed with the independent NGO and almost nothing else.

There was a need for collecting school fees as stated in the STEM schools establishment Ministerial Decree to avail additional resources to the MOE and the schools, but the National Board did not support asking for annual fees and disregarded the idea so as to ensure there would be equal enrollment to all students regardless of their ability to pay. This year, the MOE, unilaterally took the decision to request school fees from the newly admitted students capitalizing on the school popularity and achievements. The MOE asked for EGP 3,000 to cover the cost of a student's laptop and EGP 2,000 for school fees, and allowed students who provided their own laptops to only pay EGP 2,000 annually as school fees. It should be noted that currently laptops are provided by ECASE at a wholesale cost of about EGP 5,000 and offered to the students at no cost. In order to continue to serve the economically disadvantaged the MOE is allowing students to pay on installments and to be exempted from paying any fees whether for the laptop or the school if they are proven to be needy and unable to pay due to their limited income. This is allowing the STEM schools to still serve the students based on their achievement and not their socioeconomic status. Also, ECASE is working with the private sector to make funds available to pay for such students.

It is understood that the fees collected by the MOE this year is a fraction of the actual costs incurred by the MOE to operate the schools. But, due to the fact that the MOE is now collecting partial fees for its annual expenditures, ECASE is looking to work with the schools to establish their respective Board of Trustees to complete the necessary administrative requirements to open a bank account for each school to receive funds. ECASE aims to work with the Ministry to deposit some of the fees it collects from the students into the respective school bank accounts. Also, the existence of such accounts will help the schools solicit contributions from the BOT members, the private sector and others directly into the schools and not through the MOE as an intermediate. This will ensure the schools' financial independence and their ability to manage their expenses. This will eventually result in ECASE being able to reduce its expenditure on operation costs for schools. While this transition will take time, it will eventually work to the advantage and sustainability of the schools and for setting a system that can be applied in other newly established STEM schools in the future, thus, strengthening the STEM model and making it more independent.

To achieve this, ECASE worked this year with another sister USAID funded project called the Education Support Program ESP to help the schools establish their BOT according to the currently prevailing laws and regulations. Several meetings were held in both schools by MOE personnel trained by ESP and supported by ESP staff to provide technical assistance to both schools and this academic year a BOT will be established in each school to start assisting the principal in taking decisions, opening school bank accounts and raising funds to support the schools.

At the start of this school year principals in both schools were changed by the Ministry. A new female principal was assigned to Maadi and a former English language teacher was assigned in the boys' school. In Maadi the principal is new to the STEM system and needs time to learn and cope with the rest of the trained teachers and administrators. In October, the new principal is very well aware of the STEM system as he took part in previous training. He is demonstrating good

ability to manage, work well with the teachers and to gain the respect of the students. ECASE is working with both principals to provide the support necessary in both schools.

STEM Unit

In January 2014, it became necessary to get an MOE representative body more involved in the STEM work being implemented by ECASE. It became clear that the structure and processes of the STEM National Board will not allow it to commit the time needed to transfer the knowhow to the Ministry, and that more needed to be done on the executive level to ensure that the knowledge developed within ECASE and among the schools is fully transferred to the Ministry. This was needed to guaranty sustainability beyond the project lifetime. ECASE worked closely with the Ministry to establish what is termed a STEM Unit. The purpose of the Unit is to create an agile body that is primarily representative of the Ministry and replicates within its structure the relevant departments and Centers most associated with the STEM education and schools. The vision for this Unit built up by STEM School stakeholders (MOE, NCEEE, PAT, Curriculum Center for Instructional Material Development, National Center for Educational Research and Development) is to provide a mechanism to support in-country capacity building and sustainability for the Egyptian STEM Model Schools. The STEM Unit will adhere to Design Principles that were developed:

1. The UNIT works to primarily support the STEM Schools.
2. The UNIT will be directed by a leader (head) who will oversee appointees to coordinate UNIT work from the respective stakeholders (MOE, NCEEE, PAT, Curriculum Center, Center for Educational Research...).
3. The UNIT will work in collaboration with the US STEM Technical Consultants to design and activate essential elements of the STEM school model resulting in the expansion and to build capacity within their respective Centers.
4. The UNIT will initiate, expedite and ensure the tech-transfer of all programs and processes designed and implemented at the STEM Schools by the US STEM Technical Consultants.
5. The UNIT will coordinate, convene and direct participation of its appointees in all aspects of STEM School support.
6. The UNIT members (Center's reps +) will co-lead Center activities relative to their expertise and ability to deliver.
7. The UNIT will enable the STEM schools to overcome and tackle any problems or difficulties that the schools may face as the schools continue to develop.
8. The UNIT will initiate and develop partnerships with various institutions.
9. The UNIT should ensure proper documentation and reporting.

The first meeting was held in January 2014 in the presence of the Minister of Education with representation from the Ministry's Counselors' offices of Math and Science, the Professional Academy of Teachers PAT, NCEEE, CCIMD and the NCERD. A decree was issued by the Minister in April 2014 outlining the detail the functions of the STEM Unit based on the above design principles. Weekly meetings have been held on a regular basis since this first meeting. STEM Unit members have been slowly taking responsibilities in various activities that started with the last capstone exhibition and evaluation. Other responsibilities related to curriculum, laboratories, extracurricular activities, the review of training manuals, and preparation of TOTs

was started during the past period of time, thus, promising great successes for the STEM Unit to come.

ISEF-The Intel Science and Engineering Fair

ECASE worked with the Ministry of Education's Technology Development Center who already had an ongoing working relationship with the Intel Science and Engineering Fair sponsored worldwide by Intel and technically supported in Egypt through IT Blox under the auspices of Intel. Egypt has been entering the ISEF competition for the past seven years and this year the STEM schools participated for the first time. A pre-selection process, supported by ECASE, was held in the October school where both the Maadi and October school students were invited to submit their projects for pre-evaluation by IT Blox official evaluators. Finalists were selected from the Maadi school and they participated in the Los Angeles ISEF event held in May 2014 to win a position for Egypt in one of its categories for the first time.

Winning their segment in ISEF catapulted the STEM schools into the public media and gained the schools and the students' nationwide notoriety. They were later invited by the Minister of Education for recognition and later by the President of the Egypt to receive a certificate of achievement. Not only has this allowed everybody to believe in the STEM schools but it boosted morale within the Maadi schools and made the girls believe that they can win on the international level if they set their minds to it. This also created a competition between the girls and the boys' school, where the latter is striving to win comparable international competitions and are preparing themselves for ISEF next year. Certainly, the participation in ISEF this year has been a boon to ECASE's support activities as it had wide positive effects in both schools and STEM education in general.

University Admission and Enrollment

The university acceptance was a concern during the past two years with students worrying about finding a seat in the top practical and most competitive public universities. All students, in both schools, were waiting to see what will happen to this cohort of October boys who graduated this 2013-14 school year. The placement of those students was expected to have an impact on the future enrollment of students' starting next year.

The fact that the Minister secured about sixty scholarships in a variety of private universities this year, in addition to over thirty scholarships offered by Misr El Kheir nonprofit organization to private universities in Egypt, the US and Italy (five in each of the foreign countries), availed a number of scholarships that exceeded the total number of students graduating. Students ended up applying to more than one scholarship, one with Misr El Kheir and another with the Ministry. In addition to applying to the regular Supreme Council of Universities Matching Office that matches students with public universities nationwide according to their Thanaweya Amma grades. The STEM students were able to secure very good seats in all top practical public universities. This resulted in students having at least one seat at a top practical public university and another scholarship at a private school; sometimes even two scholarship offers. The fact that an abundance of opportunities were made available this year, with efforts exerted from the MOE to secure such scholarship and MEK to act upon its promise to make its scholarships available, allowed the

students, this year, an opportunity to be properly placed in the university that best suits their talents and qualifications.

Last year each school received about 400 applicants to its grade 10 class. This year about 800 applications, double the previous number, were received at each school for grade 10. With such successful university placement results this year, ECASE expects the number of applicants to further increase next year to exceed 1,000-1,500 in each school. This will help raise the credibility and reputation of the schools as schools that not only offer good quality education, but because of this quality education its students are accepted at the best public and private universities nationwide.

Security Situation

In general, the security situation in the country has drastically improved during the past six months and this is positively reflected within the schools. There are no more student demonstrations and demands, and the schools are better operating within a calmer environment. This is showing on the students' classroom schedules and their school time. Although the country still has its own political struggles, this is not affecting the schools. This calmer situation resulted in an improved operation of the schools this second year.

1. Summary of ECASE activities

This Quarterly Progress Report illustrates the progress achieved through the implementation of the USAID- funded Education Consortium for the Advancement of STEM in Egypt (ECASE) Program, from July 1, 2014 to September 30, 2014. The report demonstrates in details the work carried out by the World Learning and its partners (TFI, 21PSTEM, and TIES).

During the first part of the quarter, most of the ECASE work was accomplished stateside due to Ramadan and limited availability of teachers. This time was used to prepare for the Professional Development Institute (PDI) and opening of new schools. Adding to the Integrated STEM Curriculum V2.0 was developed and a rubric was created to openly bid and evaluate texts to support the curriculum.

- **New Teacher Selection** - The process of recruiting new teachers started last July in collaboration with the Professional Academy for Teachers (PAT) with an advert posted on the website of PAT calling for applications to be submitted by those who can meet the requirements. Multiple adverts were subsequently published by PAT and this was the fourth round of teacher selection process that has been implemented by ECASE project in close collaboration with PAT personnel.



The recruitment process started with online reading and writing English and aptitude tests prepared by ECASE. STEM applicants who scored 50% or more and English teachers who scored 70% or more were invited to have reading and listening English tests plus a concept inventory exam related to the subject each teaches. These exams were held at PAT premises with ECASE providing logistical support. The applicants were sorted according to their scores. The top scores in each subject were selected and a meeting arranged with the MOE counselor of each subject for final selection. While PAT's role has been increasing since ECASE implemented the first round of teacher selection and recruitment, it is ECASE's intention to let PAT manage this process completely next time. This will allow PAT to completely own this process from beginning to end and see firsthand the process required to find qualified teachers and the significant challenges in finding these teachers. While the number of applicants was more than 1300, the problem is finding the ones who are qualified especially in the science and math subjects. The result of the most recent process was that ECASE was able to substitute the university teachers who were hired last year on a temporary basis to meet the immediate needs of the schools. The direction now is to run the advertisement again this coming quarter in order to recruit teachers for the new schools in Alexandria, Daqahleya and Assiut and possibly for replacement teachers who are being prepared as trainers for the new teachers and new schools. ECASE plans to provide support to PAT to implement this process and select the best suited teachers in these governorates so that ECASE can start training them in early 2015 with the hope of placing qualified teachers in each of these three schools as soon as they open in September

2015. This is an important step as the Minister has stated that the project should be prepared for the new schools to open in September 2015.

- **Post STEM Study** - The ‘Post STEM Study’ question has been the major worry for all the STEM students as they were worried about which schools they would be accepted into. Therefore, it is worth to point out the results of the students’ admissions along with the effort exerted from the College Guidance unit.

Five students started their undergraduate studies at Rutgers, Illinois Institute of Technology, Minnesota, and Iowa, all of which are highly selective universities in the United States. The students received International Students Scholarships given their high achievements, their excellent performance and ambitions, and the continuous support from the school and the project that they have received.

The project has helped in developing a system for college guidance at the October school in order to develop the documents needed for universities’ admissions and others. In addition, the project focused on creating linkages with public and private universities in order to explain about the STEM system and facilitate the admission process. Other students have been able to get accepted in private universities such as AUC, NU, BUE, MSA, Arab Academy for Science & Technology, and others. Last but not least, the results of the Tansik/ public placement confirms the success of the STEM educational system, with 44% of the students being placed in Engineering Faculties and 28% of the students placed in Medicine Faculties. More details on the STEM students’ placements are listed in the report.

New Academic Year for Maadi and October – The MOE approved a 2-week early start for the STEM schools so the ECASE team implemented an orientation at each school during their respective opening weeks, September 7-8, 2014 for 6th of October and September 14, 2014 for Maadi. The goal of the orientations was to introduce the students to the mission of their school and their roles as students. All grades participated with some common elements and some grade-specific elements. The original approach was to use four or five days, including some free time for some students to implement a series of six baseline concept inventory tests. When the starts for the schools became staggered due to maintenance issues at Maadi this plan was changed and schedule was reduced to two days at 6th of October. The orientation at 6th of October was complicated due to the lack of teachers on campus because they were needing to address contract issues in their home districts, however, the two-day orientation was largely successful and included common introductions on Laboratory Safety, STEM Curriculum, and Capstone. Grade 1 participated in an egg drop design challenge, Grade 2 participated in a tower building design challenge, and Grade 3 participated in a college guidance session. At Maadi, given the delayed start of school, the orientation was compressed to one day while containing largely the same core



elements. At Maadi many more teachers were able to participate and the ECASE team role was largely one of support.

- **Professional Development Institute (PDI)** - The PDI was successful, enabling the first ever completion of the 4-week institute and engaging a new cohort of teachers. Going forward, ECASE is working with the field office to formalize a plan to enable teacher trainers to support and lead an on-going flow of new teachers. Further, a compendium and manual for the PDI has been drafted.



In addition to the PDI, a series of additional trainings were held with teachers to assure the fidelity of implementation of the curriculum, providing key support to teachers for lesson planning, assessments, and capstones. Additional training/coaching was provided to school leaders and a process for classroom observations was proposed.



- **STEM Unit** - Ongoing support has been provided to begin to transfer activities to the MOE STEM Unit. Various transfer plans for topics such as assessment, curriculum development, and capstones have been discussed as well as a mechanism to begin to review and provide feedback on key content manuals. As such, an overall structure, with subcommittees is being discussed. A transfer plan will be a major topic of discussion during the ECASE Y3 planning to be held in Philadelphia October 26-28, 2014.

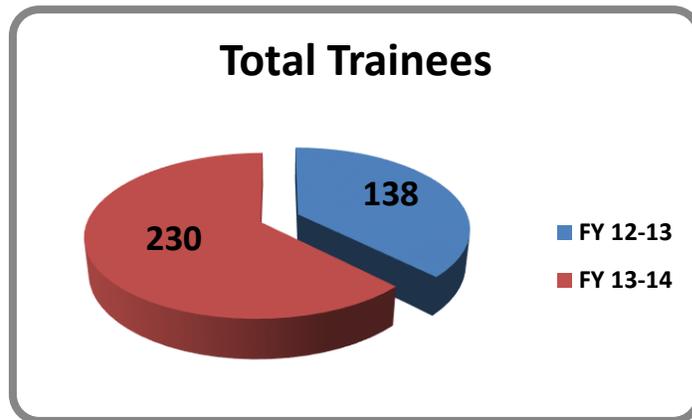


- **English Proficiency Summer Camp** - New students in both STEM schools joined the Summer Camp for two weeks. For Maadi school 93 students divided into 5 classes and for the October School 122 students divided into 6 classes. As per the Baseline test, all grade 10 students in both Maadi and October STEM schools were placed in the Basic level. The Baseline test was divided into two parts to test the 4 English language skills: Writing, Speaking, Listening, and Reading. The daily classes ran for 6 hours, Sunday to Wednesday and 3 hours on Thursday. The daily classes covered the 4 English skills of Reading, Listening, Speaking, and Writing. In addition to the English classes, the ELP provided Extended Reading sessions daily to enhance the students' reading skills and pace. The Extended reading classes were scheduled to meet daily, for 60 minutes. By the end of the Summer Camp program, the students in both STEM schools, Maadi and October, sat for the Exit Test that re-assessed the students' levels and accordingly, the students were placed in the appropriate levels in the regular afternoon classes during the first academic semester, 2014-2015. Some students have been promoted to the Pre-Intermediate level

while the rest of the students were placed in the Basic level. The Summer Camp concluded with the “Students Final Evaluation of the Intensive English Classes and Materials”. The main objective of this evaluation was to elicit the students’ feedback for their first experience at the STEM schools with ELP and to elicit their suggestions to investigate and implement those appropriate in order to use in the STEM schools future Summer Camps. (Annex I)

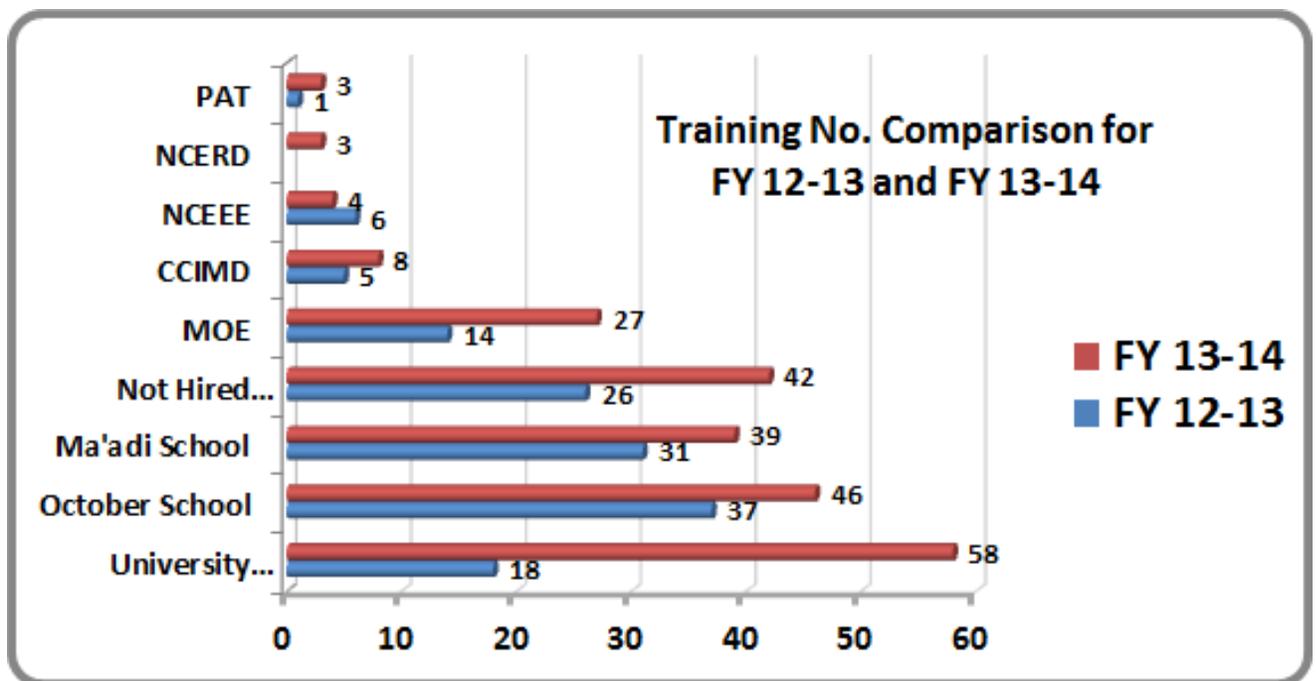
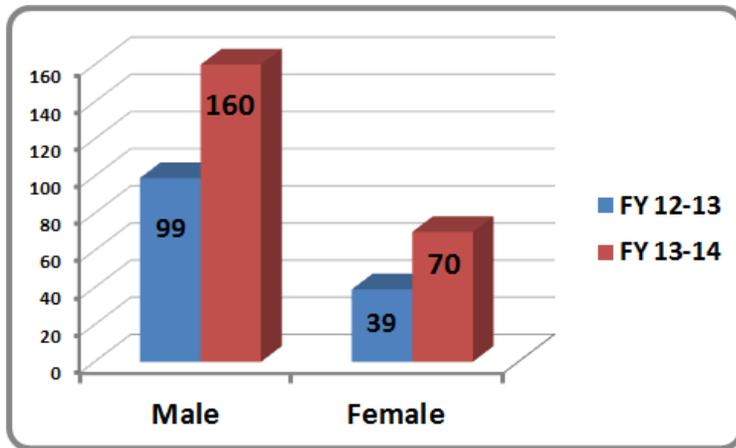


- Training** – ECASE project implemented two separate professional development trainings for both new and current teachers. Two training weeks were dedicated for the experienced teachers and two training weeks for the new teachers. Moreover, experienced and new teachers joined together in PARLO training for another week. Also during this time the project continued to handle the MOE STEM Unit workshops and 7 workshops were held successfully during the last quarter. The total number of trainees was 230; 160 males and 70 females. (Annex II)



The following table compares the number of trainees by gender and by organization over the past two years;

| | Organization | MOE | CCIMD | NCEEE | NCERD | PAT | University Professors | October School | Ma'adi School | Teachers Not Hired | Total |
|-----------|--------------|-----|-------|-------|-------|-----|-----------------------|----------------|---------------|--------------------|-------|
| FY 12 -13 | Male | 11 | 5 | 1 | | 1 | 18 | 30 | 13 | 20 | 99 |
| | Female | 3 | | 5 | | | | 7 | 18 | 6 | 39 |
| | Total | 14 | 5 | 6 | | 1 | 18 | 37 | 31 | 26 | 138 |
| FY 13-14 | Male | 20 | 3 | 3 | | 1 | 46 | 39 | 19 | 29 | 160 |
| | Female | 7 | 5 | 1 | 3 | 2 | 12 | 7 | 20 | 13 | 70 |
| | Total | 27 | 8 | 4 | 3 | 3 | 58 | 46 | 39 | 42 | 230 |



2. Activities leading towards accomplishment of Program objectives

2.1 Project Management

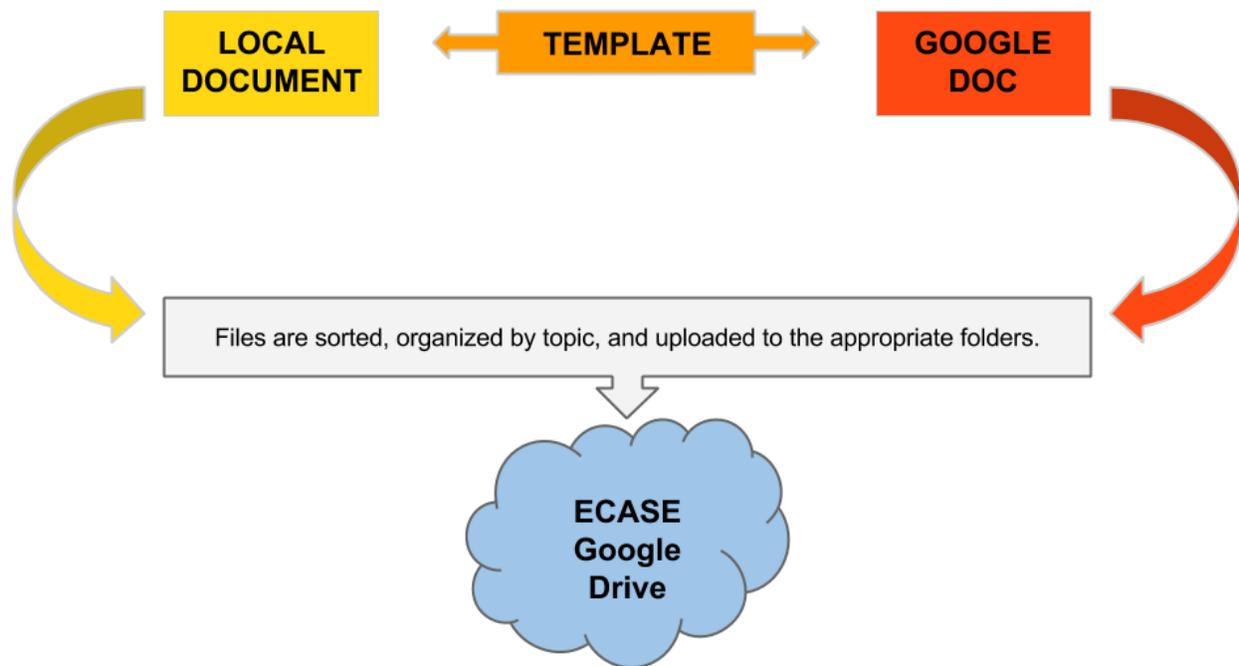
As the ECASE team wraps up this quarter, the project moves into the third year of a four-year agreement. As such, it is timely to review progress, lessons, and plans to assure the STEM model is solidified and all stakeholders are aligned. Further, the ECASE team plans to focus on sustainability of the model moving forward by enabling a formal transfer plan to provide the model and associated processes and content to the MOE and schools. Thus, the team continues its pivot from a role of implementation and reactive support to one of planned transfer and

ownership by the local counterparts. As the team moves into the next year, significant work remains to replicate the STEM model into additional schools. The ECASE team is planning an approach to new school implementation – one that includes local support, transfer of the curriculum, training of staff, and networking of all STEM schools. Outputs of the planning meeting in Philadelphia will inform the final Y3 Annual Implementation Plan (AIP) for approval by USAID. This planning meeting will also inform the team of priority needs, gaps, and interfaces among the various work activities to ensure a seamless transfer of content and collaboration to support up to 3 more new schools in Egypt.

Because of the critical nature of the work moving forward, the ECASE team has provided essential documentation via two mechanisms:

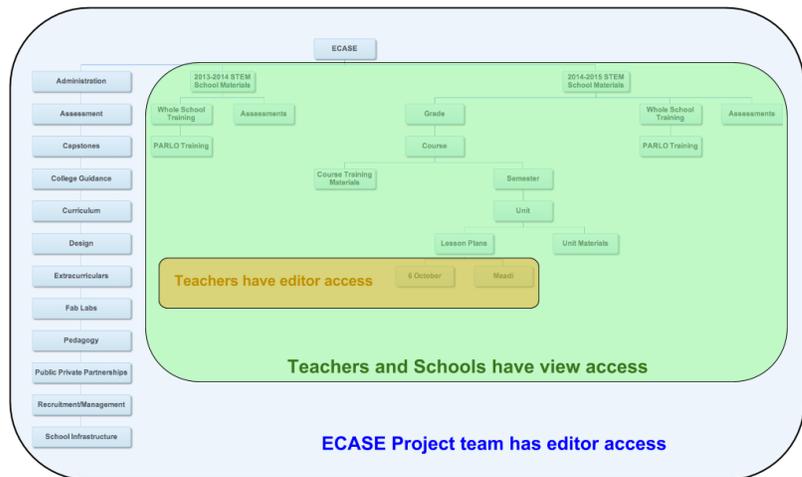
- 1) Egypt STEM Schools Portal: a website to inform the public, teachers, students, MOE, and project staff of necessary information regarding the STEM schools. Currently, the focus is toward the ECASE project and the interface with the schools and MOE. As the project progresses, it is intended that the portal will transfer ownership to the MOE and the content will be more focused on the schools, teachers, and students. Regardless, all content is managed via Google Drive and permissions/security is set such that content is made available only to those who need the information.
- 2) Egypt STEM School Design Blueprint: a website to encapsulate all work products for replication to new STEM schools while providing a road map for implementation. This tool will be provided the MOE with the STEM schools design features, success indicators, action items, and content/manuals/protocols, for the work needed to start a new STEM School.

During the last quarter, the Egypt STEM Schools Portal underwent a major redesign to assure a simpler user interface to access content already maintained in Google Drive. In order to organize the massive amount of documentation needed for a project of this scope, ECASE uses Google Drive to keep files organized and accessible to project team members. Using Google Docs allows the team to keep a single version of a document with revision history and managed collaboration. This is the preferred option, as it prevents fragmentation, duplication, and allows work to be shared easily. However, locally created documents (Microsoft Word, PowerPoint, PDFs, etc.) can also be uploaded to the Google Drive although they will not be open for editing once uploaded. In general, the pathway for documents looks like this:



The ECASE Drive is organized in three accessible areas: ECASE only, whole school materials, and course/unit specific materials. The diagram below illustrates permissions for the entire ECASE drive and color codes these areas:

In addition to the organization of the content, the user interface assures a more seamless interface to the content. Moving into the next quarter, the Egypt STEM School Blueprint website will be transitioned to this model.



2.2 Project Activities

This section summarizes key accomplishments against the revised AIP for each objective area. All project activities are part of a larger iterative process and many aspects of individual activities overlap with other activities.

Objective 1: Increase student interest, participation, and achievement in science and mathematics with special effort to underrepresented groups such as girls and economically marginalized students

During this quarter, a manual was updated and enhanced to support ***implementation of an admissions system that is criteria-based, inclusive, and transparent (Activity 1.1)***. During August 2014, the Student Selection Manual was presented to the MOE STEM Unit for review and approval. The manual lays out the process and criteria for attracting, interviewing, and accepting students for admission to the STEM schools. The selection process for students this fall (for the 2014-2015 school year) was conducted by the Ministry of Education.

In the month of October 2014, members of the MOE STEM Unit will make any revisions to the manual and secure the necessary final approval on the document. It is expected that the process described in the manual will be used to admit students to all STEM schools beginning with the 2015-2016 school year.

While a Board of Trustees at each of the schools will be critical to ***promoting the STEM school within the surrounding community through BOT (Activity 1.2)*** the original BOT were disbanded at both schools. Ad hoc representatives are in place and the schools were expected to formalize the process last quarter. General assessment of parents and BOT election will be by November, with organization by the schools and the MOE. Once a BOT entity is established, they will be engaged and training will begin.

In Preparing students for the rigors of English Language based STEM education (Activity 1.3) Grade 10 students in both STEM schools; Maadi and October, sat for two weeks; 10 days, intensive classes prior the school start day. As for Maadi school 93 students joined the Summer Camp, divided into 5 classes. On the other hand, as for October School, 122 students joined the Summer Camp, divided into 6 classes. As per the Baseline test, all grade 10 students in both Maadi and October STEM schools were placed in the Basic level. The Baseline test was divided into two parts to test the 4 English language skills; Writing, Speaking, Listening, and Reading. The daily regular classes ran for 6 hours daily, Sun. to Wed. and for only 3 hours on Thu. The daily classes used to cover the 4 English skills, Reading, Listening, Speaking, and Writing. In addition to the English classes, the ELP provided Extended Reading daily sessions to enhance the students' reading skills and pace. The Extended reading classes were scheduled to meet daily, for 60 minutes. By the end of the Summer Camp program, the students in both STEM schools; Maadi and October, sat for the Exit Test that re-assessed the students' levels and accordingly, the students were placed in the appropriate levels in the regular afternoon classes during the first academic semester, 2014-2015. Some students have been promoted to the Pre-Intermediate level while the rest of the students were placed in the Basic level. The Summer Camp was concluded with the "Students Final Evaluation of the Intensive English Classes and Materials". The main objective of this evaluation was to elicit the students' feedback for their first experience at the STEM schools with ELP and to elicit their suggestions to investigate and implement those appropriate in order to use in the STEM schools future Summer Camps.

In order to ***Propagate STEM education by opening new STEM schools in unserved areas and providing essential educational infrastructure (Activity 1.4)***, During the fourth quarter, the MOE decided that no new school openings would occur in time for the 2014-2015 school year. However, late in the quarter, ECASE received word that the MOE had agreed to support the opening of three new schools by September 2015. At this time, it is expected that teacher

recruitment will begin immediately and professional development will happen throughout the remainder of the year.

In this quarter, the project focused on building the STEM School Design Blueprint structure that will serve all of the new schools. The Design Blueprint is to be used over the course of a design year to help the stakeholders put all of the essential pieces in place to open a new school aligned to the STEM model. Going forward, the Design will serve as the guiding document to design and institutionalize changes at the appropriate pace. The Design Blueprint framework contains design features, indicators of success for each, and actions required to meet the goals. It is designed with the new school stakeholders in mind to include protocols, processes, documentation such as manuals where appropriate, and examples from Maadi and 6th of October schools. The Design Blueprint framework built in Q4 is continually updated with support documentation, protocols, manuals, and other instruction.

Objective 2: Strengthen the STEM School local initiative through developing an effective model of specialized high schools focusing on science, technology, and mathematics for gifted students.

In the fourth quarter, ECASE made significant progress toward enabling *extracurricular activities (Activity 2.1)* within the context of STEM schools. The draft rubric for the evaluation of the proposed activities was presented to the MOE STEM Unit. In addition, the team presented the first draft of the Extracurricular Activities Manual, designed to guide the transfer of knowledge and responsibilities for this area to local stakeholders. The STEM Unit created a subcommittee to focus on this area, which provided feedback on both the rubric and the manual at meetings on September 21 and 28, 2014. In addition, several private sector partners gave presentations about the activities available to students at each school.



Over the next quarter, the finalized rubric will be used to re-evaluate all proposed programs for the 2014-2015 school year by the STEM Unit subcommittee, and implementation will follow under their supervision. The subcommittee will meet again on October 12, 2014 to discuss this activity. Additionally, at the suggestion of the subcommittee, the name of this area of activity will henceforth be “Supplemental Curricular Activities,” which aligns with the definition of terms already in use by the MOE.

To *Support Creating sustainable and mutually beneficial PPPs (Activity 2.2)*, The Public Private Partnership team continues to seek to create sustainable partnerships from the schools stakeholders. These partnerships should add value to the schools’ different aspects: curriculum, extracurricular, services, finances, logistics, with outlook to securing undergraduate opportunities in named universities. The following gives an overview and expected outcomes from meetings, discussions and/or visits to potential partners:

Al Alfi Foundation: our relation with Al Alfi foundation enabled us to secure \$14,000 towards covering students' school fees:

- Criteria set by the ministry of education to cover the highest achievers with little or no financial means
 - i. Fees 5000 LE (five thousands Egyptian Pounds) –covers the tuition fees of one academic year along with one laptop
 - ii. Fees 3000 LE (three thousands Egyptian Pounds) covers the tuition fees of one academic year

These amounts along with the relationship scope is being revised for potential more involvement from Alfi Foundation

Pepsi: A cooperation proposal is currently being revised by Pepsi International; mainly financial cooperation. ECASE met with Pepsi at the end of 2013 at which time they informed us that their CSR budget is focused on funding very small entrepreneurial projects. However, in mid-2014 Pepsi contacted us showing interest in cooperation and asking for a proposal. ECASE is currently following up with Pepsi Egypt to understand how best to move forward.

Al Korra Foundation: a meeting was held with Al Korra foundation with the following outcome:

- 1- Al Korra Foundation is interested in supporting STEM school sustainability
- 2- They recommend a board of trustees including major supporters

Next step is to hold another meeting with them by mid-October to further understand the potential scope of this relationship.

EMC2: Provided cash contribution of \$21,500 towards supporting the purchase of laptops. For the second consecutive year EMC2 is contributing to the purchase of IT and tech hardware to benefit the schools and the students.

College Guidance for local and international college admittance (Activity 2.3), this quarter has witnessed wonderful news concerning the students' placement in public, private and international universities. Starting with the 11 students who received acceptance letters from universities in the United States, and ending up with 5 students who had finally succeeded to secure funds to pay for the tuition fees and make it to the U.S. These students are currently enrolled in Illinois Institute of Technology, Rutgers, Iowa, and Minnesota.

The result of Tansik/ placement was also a success, as the students were placed in faculties upon their requests and everyone was satisfied. The table shows the number of students who got accepted in each faculty, also a detailed spread sheet is attached to the report giving the scores of each STEM student and the faculty he got accepted in Versus the Minimum scores required for the Thanaweya Amma holders to be accepted in the same faculty. (**Annex III**)

| Faculty | Engineering | Medicine | Dentistry | Computer Science | Science | Urban Planning |
|---------------|-------------|----------|-----------|------------------|---------|----------------|
| # of Students | 37 | 24 | 13 | 9 | 1 | 1 |

| | | | | | | |
|---|-----|-----|-----|-----|----|----|
| % | 44% | 28% | 15% | 11% | 1% | 1% |
|---|-----|-----|-----|-----|----|----|

Securing Funds

An effort was directed to the students who were requesting funds in order to pay for their tuition fees. The project has categorized the funding requests into three different scenarios for those who got accepted in universities in the U.S., in addition to two other scenarios for the students applying to the American University in Cairo (AUC) and the German University in Cairo (GUC).

The table below illustrates the funding requests for 11 students who were accepted in US universities. A total of 5 students have succeeded in securing partial funding from different sources such as the Misr El Kheir Supplemental Scholarship, the University's International Student Scholarship Program, and family support. A great effort has been dedicated to secure the remaining funds required for these 5 students.

As a result, contacts have been established with Mr. Hisham Al Khazindar, Mr. Naguib Saiwiris, and last but not least the Alfi Foundation. After a series of negotiations and discussions taking place, an agreement has been established with Mr. Hisham Al Khazindar in which he commits to sponsor the student Abdel Rahman Mehena for an amount of \$7,372 annually for a 4 years period to pursue his undergraduate studies at the Illinois Institute for Science & Technology. The Sponsorship Letter on the right hand side states the due dates of the installments that should be transferred to the student Abdel Rahman to confirm the Khazindar's commitment throughout the 4 coming years.

Concerning the negotiations that took place with Mr. Sawiris, it has been agreed that a plan will be developed for the students next year in order to sponsor those who are aiming to pursue their undergraduate studies in very specific majors that are not taught in Egypt. Thus Mr. Sawiris' approach was made clear that he would be interested to sponsor the students who have unique and specific majors.

As for the Alfi Foundation, meetings were held with Nermeen AbouGazia, the Director of the Foundation, in which she was briefed about the STEM students and their accomplishments, the school systems, and the curriculum, etc. The Alfi Foundation expressed interest in sponsoring 5 students with an amount of EGP 20,000 for each one of them for a period of 4 years to pursue their undergraduate studies at the German University in Cairo, on the condition that these students should have already partially secured some funds for their tuition fees. The principal of the October School nominated 5 students who were granted with either Supplemental Scholarships from Misr El Kheir, or elsewhere.

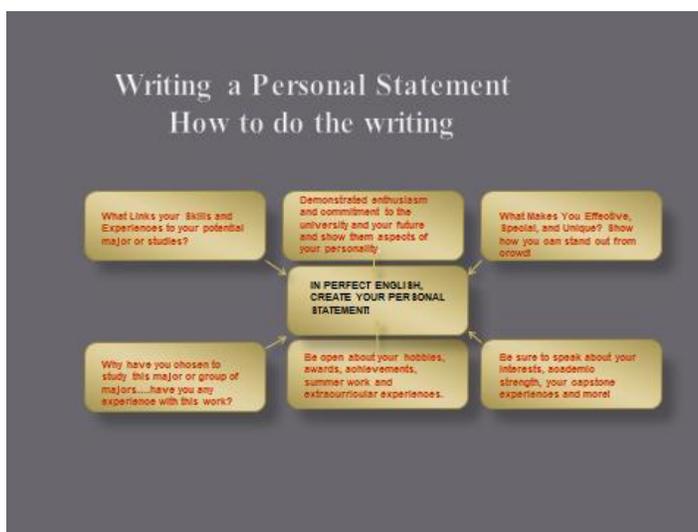
The 2014-2015 Grade Three Students have been granted 31 scholarships from Misr El Kheir. The table below shows the types of scholarships provided to the STEM students.

| Number of Students | Name of the University | Type of Scholarship |
|--------------------|---------------------------------------|---------------------|
| 8 | Nile University | Full |
| 3 | American University in Cairo | Full |
| 4 | Arab Academy for Science & Technology | Full |

| | | |
|---|--|--------------|
| 5 | University of Calabria in Italy | Full |
| 2 | Illinois Institute of Technology in U.S. | Supplemental |
| 1 | University of Minnesota in U.S. | Supplemental |
| 1 | Iowa University in U.S. | Supplemental |
| 1 | Rutgers University in U.S. | Supplemental |
| 6 | German University in Cairo | Partial |

A meeting was held with Mr. Hisham Ahmed, representative from the Ministry of Higher Education, to discuss the possibility of developing a system to manage the scholarships for the STEM students who will study in universities abroad. The Ministry of Higher Education has an office responsible for this type of service called ‘Cultural Affairs and Missions’ that provides educational, monetary and scientific supervision and creates a file for each student containing all the necessary documents, it also monitors and assesses the achievement of the students and tracks their educational records directly with the universities. It has been agreed that there will be a memorandum of understanding between the schools and the ‘Cultural Affairs and Missions’ in order to proceed and give the students the best assistance needed. The document has been drafted and sent to Mr. Hisham in order for him to take the approval.

With the start of a new academic year in September, a college guidance presentation was given to the students of October School on Sept 7 and of Maadi School on Sep 14. The presentation consisted of four main sections: last year’s achievements of Grade 3 students (Academic Year 2013- 2014), the college guidance process, the USA application, and how to write a personal statement. The students were introduced to the main steps to apply to universities in Europe, UK, and the U.S., how to prepare to fill the applications, choosing the university that best matches the major they want to study, and how to write a personal statement that will help them introduce themselves to the universities. The project has offered to review the personal statements that the students will develop in order to help them in writing a constructive and well-structured personal statement.



Objective 3: Build the capacity of a highly qualified cadre of STEM professionals and provide opportunities for training and sustained, intellectually rigorous professional learning

During this quarter, there was ongoing effort toward **STEM Professional development and Curriculum Training for New and Existing Teachers (Activity 3.2)**. ECASE project completed the first draft of the Year-Round Professional Development Manual. It was delivered and discussed with the MOE STEM Unit in September 2014. This manual describes the plan to conduct year-round professional development to new and existing teachers through various

means, including whole school, small group, and distance learning sessions and includes a timeline for conducting these sessions while training future trainers. During the month of September 2014, initial interviews and visits were made with teachers and principals at both Maadi and 6th of October schools to assess the initial professional development sessions to be conducted and to schedule those events. The proposal for training a first cohort of professional development trainers in conjunction with PAT and the STEM Unit was also approved. Principals made their suggestions for school-based trainers the last week in September 2014.

In the coming quarter, the MOE STEM Unit committees for the PDI and professional development are going to continue to meet regularly. On the agenda is the scheduling of teacher observations, formal sessions for trainers and committee work sessions to complete the manuals. It is expected that this work will be conducted both during in-person meetings (on Wednesdays and another mutually decided day of the week) and virtually. The completion of the manuals should take the remainder of the school year, with the goal being completion in June 2015, so that PAT can accredit the training process no later than August 2015. Professional development conducted during these months will take place at both Maadi and 6th of October and will include one-on-one sessions with new teachers and whole school sessions at the request of the principal during weekly faculty meetings. Professional development conducted during the months of November and December 2014, will be conducted virtually with US-based consultants. During these months, the group of new trainers will also be trained and coached on the planning and presenting of professional development for the January/February 2015 two-week PDI.

Beyond Teacher PDI, a special focus was made to *deliver school leadership training for management*. The weeks of August 31 and September 7, 2014 were used to coordinate school activities between the Maadi and the 6th of October Schools as well as resolve issues related to the opening of school. Of significant importance was the coordination of school schedules and course offerings between the two buildings. Whereas in prior years the Maadi School operated 90 minutes per day longer than the 6th of October school, it was agreed that the school day for both schools would be 7:30 AM-3:00 PM. Accordingly, both principals agreed that the schools will operate a schedule consisting of five blocks of time per day with each block being 80 minutes. Prior to this time, the 6th of October School operated in blocks of 60 minutes, below the MOE's standard of required time.

Allotment of blocks per course was further standardized. For instance, in all of the major courses, (2) 80-minute blocks will be the standard. This change eliminated the split block of 40 minutes. In addition, course offerings are now standardized in each school. For example, Geology will be offered in all three grades and an extra lab per grade 3 science courses was added.

Significant time was spent with the principals revising and collaborating on a number of issues to support the overall opening of the schools. Topics and coaching supported hiring of staff, securing supplies, creating master schedules and student orientation. Going forward, all organizations will provide continued support to the principals.

Finally, it was planned to *deliver principal PD* during a 3-day workshop at the start of school. The workshop was designed to focus on teacher annual evaluations and the Classroom

Observation Scale (COS). Two six-hour workshops held on September 3 and 10, 2014, were presented to MOE STEM members with the intention of reaching a consensus on an annual teacher evaluation process and a classroom observation instrument. Paramount to these discussions was a comparison of the SCOPE and Classroom Observation Scale (COS) instruments. STEM unit members reached consensus and accepted the proposed annual evaluation system, but decided to pilot two classroom observation instruments closely related to the COS.

In addition to the MOE sessions, ECASE staff held meeting with both principals collectively and also individually to present professional development on a variety of topics including: annual teacher evaluation, classroom observations, walkthroughs, entry level plans, building a culture conducive to learning and shared decision making.

Going forward, there is a need to work closely with the principals to execute the new Classroom Observation Scale and teacher evaluation system. In addition, intense training is needed to institute post-observation conferencing. Walkthroughs are underway now. It is recommended to send the developer of these protocols to conduct local training in November to fully implement the observation/post-observation process once the MOE has decided on a classroom observation process.

Beyond pedagogical training, the project offered *training of assessment instruments for student course work and college admission (Activity 3.3)*. As previously described, ECASE presented PARLO to teachers from August 31 – September 3, 2014 (though several teachers were not present during the presentations). During this time, the project staff worked with teachers to deconstruct the definition of PARLO by first examining the learning system and all of the instructional strategies that are part of the system. A discussion on learning outcomes followed with a focus on the characteristics of these targets and where they can be found in the curriculum. Next, the assessment system embedded in PARLO was examined: collecting evidence on student's level of understanding of the learning outcome, rating the evidence with a traffic light system, and then rating each learning outcome with N, P, H (Not yet proficient, Proficient, High performance). In collecting evidence, the importance of cognitive demand was emphasized, suggesting that the teachers focus on basic application and strategic thinking. A presentation was completed with a discussion on reassessment and provided the teachers with an example of a reassessment plan document that could be used with their students. On September 4, 2014, the project presented all of this information to the MOE STEM Unit during a 5-hour presentation.

Going forward, ECASE will continue to work with teachers on the PARLO system virtually by assuring implementation of the PD, reviewing evidence, providing additional materials and strategic thinking activities aligned to the Learning Outcomes.

In addition to PARLO, teachers were provided training on the Tracker system in August 2014, which utilizes PARLO. Follow-up sessions have occurred virtually. Since previously scheduled Tracker training (held February 2014) provided teacher candidates with an overview of the system and details on its functionality and because teachers were supported virtually throughout the year, it was determined that the August 2014 training would forego the extended training as

teachers and student become familiar with the PARLO philosophy and documentation of rating in Tracker. As such, in August and September 2014, on-the-ground training was conducted using a more “hands on” approach with thought provoking exercises rather than step-by-step “how tos”. The new teachers were paired up with existing teachers who acted as mentors. Teachers worked in teams of two to four to familiarize themselves with the system. All teachers were provided additional training on running reports, modifying their Tracker screens, student administration and attendance.

PARLO Tracker was incorporated into the September 2014 Student Orientation which was conducted by ECASE staff and teachers at 6th of October. Four selected teachers from Maadi were trained on the student orientation, provided a script, and conducted the training for those students as a first step in the Tracker Technology Transfer to the Egyptian staff. Also in September 2014, the MOE STEM Unit was provided an in-depth look at the PARLO Tracker screens for Teachers and Students to help with conversations with teacher regarding student progress. User Guides for all users, except System Administrators and other administrators, have been developed and rolled out. Continued virtual support has been provided to all entities utilizing the software.

During October, student, teacher, course and learning outcomes data sets for the first semester for the Math, Science and Capstone courses will be loaded into Tracker for both Maadi and 6th of October and teachers will use the system in “practice” mode with plans to go live and roll Tracker out to students second semester. Additionally, Fall Semester 2014, data will be loaded in the Tracker system as it becomes available from the schools through World Learning. Also over the next quarter, the project will continue to work with a designer to revamp the front end of the system to accommodate mobile devices and to be more intuitive and user friendly. Recent graphical interface screen shots were provided in the last quarterly report. The new User Interface is in the process of being coded into the main system and is projected to go online for the second semester. Finally, a training Guide for the Teacher Tracker Training was completed prior to the August 2014 training and will be edited in late November. Documents for Tracker Technology Transfer will begin to be developed in November and December with the beginning of the Technology Transfer taking place in February.

Objective 4: Strengthen MOE capacity at the systems and policy level to sustain and replicate these model schools

To refine and adapt the Integrated STEM Curriculum and to enable completion for training (Activity 4.1), a curriculum specialist in-country continued her work throughout the quarter to move from Curriculum 2.0 design/refinement to implementation in the 2014-15 academic year. The outcomes of the previous quarter (April 1 – June 30, 2014) informed the redesign of the curriculum, which led to refined course descriptions for all courses and a specified rubric for text and equipment needs. Ultimately, all STEM course descriptions were utilized in mid-July 2014 to conduct an open bid for curricular materials with the objective of aligning the integrated STEM curriculum and associated scope and sequence. This Curriculum 2.0 is the basis of work for the 2014-2015 academic year and was the focus of teacher training and orientation leading to the start of school in September 2014. New requirements were brought forth by the MOE efforts (early September 2014) regarding the Earth Science Curriculum, leading to an immediate

collaborative redesign. Adaptations in Earth Science had no impact on the bid for curricular materials.

In addition to new course descriptions for the science and mathematics courses, the course description format was utilized for humanities and enrichment courses and was used to guide the Professional Development (PD). To support PD (which is further described in the next section), the curriculum specialist in-country supported teacher preparation by assisting in the final two weeks of the Professional Development Institute (PDI). During the week of August 10, 2014, the specialist coordinated equipment training for all current STEM teachers, and during the week of the August 17, 2014 PDI, she conducted an introduction to the curriculum, new teacher assessment training. As a result of the August 10, 2014 equipment training, the curriculum specialist worked closely with MOE STEM Unit members, STEM teachers and US subject area consultants to produce a set of laboratory handbooks with expectations for student behavior, safety guidelines and supplementary laboratory investigations, one per grade for each science subject and mechanics. These were distributed in both soft and hard copies during the first 3 weeks of school (September 7 -20, 2014).

In further support of the curriculum implementation, ECASE initiated work on a model to contextualize the science curriculum through the development of case studies to supplement text, as opposed to writing full new texts. Additionally, the specialist worked closely with World Learning to assess the lab inventories and to improve their usefulness and validity. Teachers and curriculum specialists developed supplemental equipment lists as a result of the equipment training. Redistribution of books and equipment between schools was conducted as needed in early September 2014. The project also created lab safety manuals, defined safety and security issues for both schools and for all grades of Chemistry, Biology, Physics, Earth Science, and Mechanics, and prepared a safety presentation for science teachers to conduct to students during their orientation activities. All safety issues were addressed by World Learning and/or other appropriate agencies by the end of September 2014. Finally, ECASE has initiated development of a preliminary handbook documenting the development process for the full curriculum.

To further the integrated STEM Model, an initial technology plan was offered for use with the Integrated Curriculum 2.0. The initial plan, codifying much technical learning already taking place in the schools, includes proposed learning outcomes based on the International Society for Technology Education Standards, some ideas and language taken in part from Valerie Barra and Chris Stevenson, NSF Grant 0964217, *Bringing Computational Thinking to K12*. Additionally, a specific outcome was developed for the unique needs of the integrated Egyptian STEM curriculum. It is proposed that the evidence of learning be built over students' three year duration with the school and shared with learning outcomes in other courses, through capstone work, Fab Lab, robotics, computer science, hydraulics and/or through projects or accomplishments achieved through extra-curricular or summer activities and presented by the students. Evidence of achievement of the outcomes will be presented by students in an electronic portfolio. The US STEM curriculum specialist is currently working with a task force from the Ministry of Education STEM Unit to finalize the Technology Curriculum Plan for presentation and approval by the appropriate Ministry officials.

With respect to training and PDI, The Project completed the final two weeks of the Summer PDI. Sessions were held for both new teachers and existing teachers from both current STEM schools (6th October and Maadi) in August 2014. The first week included advanced lab training for existing teachers and continued pedagogical theory and hands-on application for new teachers. The second week was comprised almost entirely of lesson planning and model lesson preparation and performance by all teachers. This round of PDI marked the first time during the project that an entire,



planned 4-week PDI was delivered, and provided the opportunity to collect feedback from both teachers and presenters for analysis. Also during the fourth week of the PDI, the consultants were able to observe teachers during presentations and to make recommendations regarding possible “trainers” to conduct future professional development. The PDI Teachers’ Companion was shared with the MOE STEM Unit in mid-September 2014. The Companion is a document that contains a breakdown of all sessions conducted during the PDI and their respective Learning Outcomes. It also contains handouts and materials for attendees. Ultimately, there will also be a Trainers’ Companion, which includes the same materials with the addition of slide notes, presentation scripts, and material lists.

In the next quarter, additional activity will include the first meeting of the subcommittee to evaluate this manual (scheduled for Wednesday, October 1). The agenda for that meeting includes creating a timeline for the creation of supplemental materials, including the Trainers’ Companion. This work will be done in conjunction with the “Training of Trainers” (see Objective 3, Activity 1) who ultimately will be conducting sessions of the PDI in January, February and June, 2015. This training will utilize the analysis of the 4-week PDI (which will be documented next quarter). An ECASE Leadership Retreat also is planned for the end of October to discuss at length the transfer of processes in the context of integrated areas such as curriculum and professional development.

To further develop the *curriculum and to continue capstone curriculum implementation and training for all grades (Activity 4.2)*, The Project focused on refinement of the capstone design to improve sustainability by scaffolding the student experience and providing more integration with the rest of the curriculum. The revised design will enable a variety of improvements. The Grade 1 Capstone Challenge is now more prescribed to help the new students adjusting to a new school, new curricula and a new environment. A more prescriptive Capstone helps students adjust to the Capstone process while still meeting the learning outcomes and preparing them for a much more rigorous Capstone experience in Grade 2 (which remains the same). Grade 3 students will experience a Capstone in Semester 1 only, enabling these students to be available for internships and other activities in Semester 2. The Capstones are more directly tied to learning outcomes in other subjects developed in the Curriculum Design Studio V2.0 in June. In addition to the Journal questions on learning transfer, students are required to identify and document at least five additional learning outcomes they transferred to their Capstone. These

submissions will be evaluated in the context of the team's Capstone Portfolio. Finally, hosting the evaluation exhibitions at the schools for the first semester each year will reduce costs and bring more external partners to the schools. When an inexpensive venue is available, it will be considered. It is possible that partners will make venues available at little or no cost for future events.

The transfer of Capstone management to the schools and the Ministry STEM Unit is well underway. During this quarter, several activities occurred. On August 17, 2014, a Maadi teacher led the Capstone introduction for new teachers (90 minutes). On August 13-14, 2014, a Maadi teacher and a 6th of October teacher led the Capstone Professional Development for all teachers. Day one of this training focused on a simulated Capstone exercise for all teachers, simulating an entire semester of the student experience in one day. Day two included Journal training, how to run a Capstone Session and how to be helpful for students without having all the answers.



After the schools' Capstone Leaders teams created initial drafts, The ECASE support team provided feedback on the Capstone Challenges, Capstone Session Design Principles, and refinement of Capstone Leader scope of work in preparation for August 2014, when they were to finalize these items. Between September 1 and September 15, 2014, the Capstone consultant met briefly with Capstone Leaders from each school for one hour at a time to help finalize Capstone Challenges and supporting documents. During the school orientations, the lead Capstone Leader at each school provided a 90-minute Capstone orientation session for all students in each grade.

On September 17, 2014, the Capstone consultant met with the MOE STEM Unit to reflect on their participation in the Capstone during semester 2 of 2014-2015, to update the STEM Unit on the transfer of Capstone to the schools, and to recruit STEM Unit members to participate in various aspects of the Capstone this semester. To transfer ownership to the schools and the Ministry, STEM Unit members are needed to evaluate Grade 3 Journal assessments, prototypes and posters, and Capstone Portfolios. Organizers are also needed for the exhibition.

Capstone Exhibitions for Semester 1 are tentatively planned for January 2014, but may be moved to the end of December once the calendar is finalized. Regardless, the project will continue to support the schools and Ministry STEM Unit as they take more responsibility for planning and implementing the exhibitions/evaluations.

The ECASE team also will work with the STEM Unit and schools to develop a plan for assessing the work of Grade 3 in Capstones, including Journal assessments and Capstone

Portfolio assessments (part of the Prototype evaluation) in place of having the ECASE project team conduct the grading.

Also during this quarter, the Fab team continued working with the Capstone and curriculum teams to integrate **Fab Lab** use and competencies by developing the learning outcomes, facilitating teacher-fab lab manager-fab team interactions, and by integrating the Fab Lab use into the teacher professional development in August 2014. The Fab team also worked on further developing and implementing a week-long training course for a subset of students at 6th of October and Maadi. In this training, the Fab team instructors and Fab Lab managers were to be supported by a team of instructors from Fab Lab Egypt and a cohort of student teaching assistants. The Fab team also worked on developing a plan for the Fab Lab managers, student mentors, and Fab Lab Egypt representatives to run orientation training. To this end, training proposals and manuals were developed for student mentor training, teacher training, and the student orientation. However, none of these trainings were approved, and therefore did not occur. Due to this set-back, the Fab team re-developed a tiered student training plan and submitted the plan to the project leadership. The Fab team is currently working on revising the training manuals to reflect this new approach and is awaiting feedback and permission to proceed.

In the next quarter the Fab team will finish the training manuals for the new training, and prepare for its implementation. If given permission to run the training at the schools in the next quarter, the Fab Team will also implement the training plan.

In addition to advancements in the curriculum, significant progress was made toward the **development of assessment instruments for student course work and college admission (Activity 4.3)**. Progress is broken down into subcategories below:

Concept Inventories:

ECASE is retaining responsibility for the test of concepts (TOC) for the 2014-2015 school year. After a successful year implementing the TOC in 2014, work this year will follow a similar pattern of development, pilot testing, refined development, administration, and analysis and scoring. The project plans to develop new items for each of the 2015 Test of Concepts. Development work on the new TOC items will begin in the first quarter of Year 3. The team also will begin to plan for capacity building and transfer of activities to the MOE for these assessments in future years. Future work could involve testing the predictive validity of these assessments, although no such plan or activities have yet been approved.

University Readiness Test:

Use of a released version of the ACT as the URT was successful in the 2013-2014 school year. A decision will need to be made regarding the URT mechanisms and options for the 2015 school year. Realizing that the arrangement between ACT and the ECASE project for use of the ACT exam in its current form cannot be sustained, discussions will be held during Year 3 between the representatives of the MOE, project Assessment Committee regarding a suitable replacement for the upcoming year for the URT, and the ultimate plans for administrative transfer of this exam to

MOE.

Summative Exams:

ECASE Project will be working throughout year 3 to support capacity building and the guided activities for the transfer of the end of semester exams to the MOE in order to facilitate the development, administration, and analysis/scoring of these exams by the Ministry. The teachers and MOE are leading in the development of summative exams.

Professional Development and Meetings:

In August 2014, a weeklong training session was presented to the teachers of the 6th of October and Maadi schools by assessment staff on the use of the formative assessment system of evaluation, Proficiency-based, Assessment and Reassessment of Learning Outcomes (PARLO). This system emphasizes students attaining a level of “proficiency or high performance” on a limited set of high value learning outcomes. PARLO allows teachers, students, and parents to track a student’s performance toward mastering multiple learning outcomes and is being implemented in both the 6th of October and Maadi schools this year. In a separate August 2014 session, the assessment committee met and provided training to representatives of the MOE for creating high cognitive demand, multiple-choice items that are aligned to Learning Objectives for the purpose of developing high stakes assessments. All of these professional development sessions were successful in meeting their goals and received very positive feedback from those in attendance.

At meetings in June and August 2014, with the MOE, work began to develop on the assessment transfer plan that would shift responsibility and control of the project’s assessment program to the Ministry of Education.

Also, in furtherance of the *STEM School Design Model Codification (Activity 4.4)*, the project continued to lead the work to develop an Egypt STEM Schools Blueprint for the sustainability of current schools and the implementation of new schools. In this quarter, ECASE contributed “Actions” to the design features and success criteria. Each organization began to add supporting documentation.

Over the course of this quarter, all organizations have been developing manuals for training and other elements of the Design Blueprint. As the next quarter begins, the team will add these manuals to the Blueprint and continue to populate the various elements.

Objective 5: Support the MOE, establish and build the capacity of the MOE STEM Unit

In efforts to *support the newly established MOE STEM Unit (Activity 4.1)*, ECASE partners have worked with members of the Ministry of Education STEM Unit on a weekly basis throughout this quarter to enable collaboration and transfer of knowledge to enable the MOE to sustain the work. As such, STEM Unit members have:

- Participated in laboratory equipment training for teachers
- Assisted in conducting sessions for the PDI for new teachers
- Assisted in the preparation and presentation of power points for the dissemination of information concerning the Egyptian Model STEM schools.
- Collaboration in development of the training manual for the Curriculum Design Studio (still in process) and revision of the curriculum framework
- Collaborated to write laboratory student handbooks
- Collaborated on decisions regarding laboratory safety and the creation of lab safety handbooks
- Deferred procurement to World Learning and USAID for curricular texts
- Enabled redesign of the Earth Science curriculum according to newly defined criteria
- Discussed the organizational structure of the STEM Unit
- Collaborated with the assessment team to help organization and oversee administration of baselines
- Collaborated on the school and assessment calendar
- Formalized committees/task teams to review and finalize key critical manuals



In addition to these activities, the ECASE team has begun to draft transfer plans for key content areas and to provide preliminary manuals for all work. The overall transfer plan will be determined during a planning retreat with ECASE partners in late October, 2014.

Annex I: English Language Proficiency QR

Annex IIA: Training Events

Annex IIB: Training Hours

Annex III: October G12 Result

Annex IV: ECASE PMP Progress Report FY 13-14