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

**QUARTERLY PROGRESS REPORT  
APRIL - JUNE 2013**



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# QUARTERLY PROGRESS REPORT APRIL – JUNE 2013

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

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The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

## CONTENTS

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Acronyms .....	4
1 - Executive Summary .....	5
2. Activities leading towards accomplishment of Program objectives .....	9
2.1 Project Management .....	9
2.2 Project Activities.....	10
3. Challenges and Resolutions.....	24
Annex A: Capstone Independent Evaluation.....	26
Annex B: Summer PDI Teacher Companion .....	27
Annex C: English Language Program.....	28
Annex D: Training Hours.....	29
Annex E: Student admissions criteria .....	30
Annex F: Board of Trustees Training Package.....	31
Annex G: Egyptian College Guidance List.....	32
Annex H: Actual Field Trips .....	33
Annex I: Classroom Observation Scale III.....	34
Annex J: National Board Workbook and Recommendation for Establishing a Charter.....	35
Annex K: Proposed Assistance to MOE Strategic Plan.....	36
Annex L: Minutes of Meeting During the Quarter .....	37
Annex M: Samples of Capstone Projects .....	38

## Acronyms

21PSTEM	The 21 <sup>st</sup> 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
EGP	Egyptian Pounds
GILO	Girls' Improved Learning Outcomes Project (USAID)
GOE	Government of Egypt
HR	Human Resources
ICT	Information and Communications Technology
MAP	Management Assessment Protocol
MEK	Misr El Kheir Egyptian NGO
M&E	Monitoring and Evaluation
MOE	Ministry of Education
MOHE	Ministry of Higher Education
NCEEE	National Center for Educational Evaluation and Examination (MOE)
PAT	Professional Academy of Teachers (MOE)
PD	Professional Development
PDI	TFI's Professional Development Institute
PMP	Performance Monitoring Plan
SCOPE	Standards-based Classroom Observation Protocol for Egypt
STEM	Science, Technology, Engineering, and Mathematics
STTA	Short Term Technical Assistance
TIES	Teaching Institute for Excellence in STEM
TFI	The Franklin Institute
TILO	Technology for Improved Learning Outcomes (USAID)
WL	World Learning
US	United States of America
USAID	United States Agency for International Development

## 1 - Executive Summary

This Quarterly Progress Report (QPR) details activities and accomplishments of the USAID – funded Education Consortium for the Advancement of STEM in Egypt (ECASE) Program, from April 1, to June 30. The report discusses work undertaken by ECASE staff during the quarter.

The beginning of the quarter was fraught with school level issues, specifically student demonstrations and parent upset about college admissions at both schools. The demonstrations resulted from what was perceived as students and their parents wanting to guarantee seats in Egypt's public universities. To quell these issues, World Learning worked with MEK, BOT leaders and MOE to identify scholarship opportunities and confirm support for university admission by the higher Council for Universities. Further, over this quarter, the project has seen changes in the overall school leadership by the MOE after the end of the school year, also teachers at both 6th of October and Ma'adi may be leaving the schools due to their end of contract.

MEK, which was supporting school operation in terms of administration, meal provision and subsidizing teachers' salaries decided not to continue managing these activities and pay instead a total amount of EGP 3 million, under these expenditures, in the coming school year. Such an amount will be deposited into a STEM Trust Fund put up by the Ministry of Education where the STEM Board has access to expend from. A letter of commitment was received by MEK in this regard. Annex X

- **Capstone** - In April 2013, TIES intervened in both schools to provide course corrections to the capstone work, which resulted in a significant portion of the student grades. As such, TIES provided a revised rubric, training on the rubric and capstone methodology to teachers, administrators, and students, and trained a cadre of external professionals (university teachers) in the evaluation of student capstone work. **Annex A Capstone Independent Evaluation outlines the process and Annex M includes samples of Capstone projects.** Further, TIES created an expert team to evaluate the student progress on the capstones, and provided points of feedback on the student work from both schools. Finally, the TIES team leveraged an external review panel in the US to evaluate the scoring and to determine that the scoring was consistent among the evaluators and aligned to the rubric – which was determined to be the case. The end of April 2013 was seen as a large success with positive capstone work provided at both schools.



Both schools hosted local capstone exhibitions to celebrate student work and display their efforts to a wider audience. On May 21, the Ma'adi school hosted a capstone exhibition where members of USAID, prominent Ministry of Education officials, and corporate representatives toured the school while students presented their projects. On June 5, the 6th of October School hosted a 'STEM Festival', during which the lab complex was open to a similar set of visitors. Students designed pamphlets, posters, a large scale banner, and served as the welcoming reception team and tour guides for visitors. An introductory welcome video was assembled and presented by students, after which visitors were split into groups by student coordinators and taken to tour various labs where capstone projects were on display. This tour was visited by the USAID Deputy Mission Head, the Head of the USAID Education Department and other officials from the Education Department. A reception followed with music performed by students as well.

- **Curriculum** – 21PSTEM worked over this quarter too on the revised scope and sequence of the Integrated STEM Curriculum 1.0. In a trip in June 2013, 21PSTEM shared the revised scope and sequence with representatives from the MOE and with teachers from 6 October and Ma'adi STEM schools for feedback and finalization. The scope and sequence will be used as a guide to create units in science and math for all three grades. Model lesson plans will be included. 21PSTEM recommended the Egyptians use science texts Active Chemistry and Active Physics and LabAids SEPUP/Biology books. However, in evaluating various curricular materials to support the scope and sequence for math, 21PSTEM determined that the math textbooks which best met the requirements of an integrated curriculum presented too many problems regarding its American context. Therefore, 21PSTEM has been working closely with World Learning to further evaluate Egyptian curriculum and determining a suitable path forward for Math curriculum. Near the end of the quarter, it was determined that 21PSTEM would continue to work with It's About Time publishers to map and revise existing math content from the Interactive Mathematics Program and Math Connections with the scope and sequence and to the Egyptian Context. Going forward, World Learning will engage with It's About Time to leverage Egyptian STEM teachers to provide local contextualization to the content and to essentially create course material fully customized to Egypt. The mapping, alignment, contextualization, publishing, and beta testing of the content will occur in waves over this year, with the first release from the publishers prior to the beginning of school year 2013-14.



- **School Design** – On a less positive note, the TIES work for new school design at Mansoura was put on hold due to a change of the governor. Therefore, planned activities both in-country, and for a U.S. STEM Learning tour and design studio were delayed until new leadership can be appropriately engaged.

**Professional Development** - Finally, in support of teacher professional development, TFI held a Professional Development Institute (PDI) with both existing and new teachers in late June, 2013. The PDI involved close to 70 participants (Existing and New Teachers) and focused on STEM best practices and teacher pedagogy. During the course of this training, it was apparent that the existing teachers had evolved and learned from previous trainings and

were ready to further engage the curriculum in their work. The PDI team made adjustments to the PD to accommodate teacher needs and further leveraged the 21PSTEM team to provide an introduction to the curriculum scope and sequence and the associated curricular materials. TFI was prepared to make further adjustments for the second week of PDI, but June 30, 2013 demonstrations



and increasing anticipation of in-country violence, it was decided that the U.S. team should reschedule the second week of PDI for a later date and return their staff to the US to assure safety. Going forward, TFI will work closely with 21PSTEM to define the goals for professional development – both for the PDI and for the curriculum. **Annex B is the Summer PDI Teacher Companion.**

- **Fab Lab** - The originally planned site assessment by Fab Foundation was put on hold pending project approval since the site assessment was not part of the original procurement. In lieu of a site visit, Fab Foundation worked through TIES and World Learning to better define the lab space and associated equipment requirements. Further, Fab Foundation worked directly with World Learning to finalize the Fab Lab procurement package, prepare shipping documents and arrange for shipping and customs. At the time of this report, the materials had arrived to both schools.

World Learning has created summer internship programs to allow students to be more directly involved in the preparation of the Fab Labs at their schools. A small group of students was selected via an application process which required students to submit an essay explaining why they were the best candidates for this task. Students selected meet once a week at their schools with WL personnel and a teacher, in addition to frequent online discussions and collaboration. Students have been tasked with helping to manage procurement of local items, background research on the machines and processes of the lab, as well as constructing 3 dimensional models of the space envisioned for the Fab Labs. This 3D modeling process is being completed using Google SketchUp (a tool which is compatible with the workflow of the 3D printer to be installed), giving students valuable experience with the software which they can use to prototype designs once the 3D printer is installed. Models are shared with the Center for Bits and Atoms at MIT, and used as the basis for designing the layout of the lab. The models are also being used as the basis for recommended infrastructural modifications to existing rooms (particularly in Ma'adi), where new electrical, plumbing, ventilation, and cooling systems are needed. Q4 will focus on installation and training.

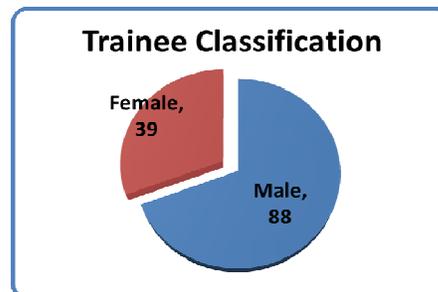
Additionally, the Fab Lab Team from TIES met several times during the quarter to develop integrated fab lab curriculum and fab lab related professional development for teachers. Specifically, the team held a meeting in Cleveland with Fab Lab Gurus from MC<sup>2</sup> STEM High School, Lorain Community College, and Case Western Reserve University to customize both the curriculum and the Fab Professional Development for the program. In May 2013, a similar team met in Cleveland to develop a Fab Lab training timeline based on the proposed Fab Lab shipment date and contextualized training approach. In June 2013, the team worked together in the Lorain Community College lab to continue discussions and refine and customize the ECASE curriculum while leveraging the equipment in the lab. The Fab Lab

team also participated in the activities to develop capstones for the 2013-2014 school year by mapping learning outcomes to fab lab activities in the capstones. Further, the team worked to develop a preliminary schedule to introduce teachers and student to fab labs over the course of Semester 1.

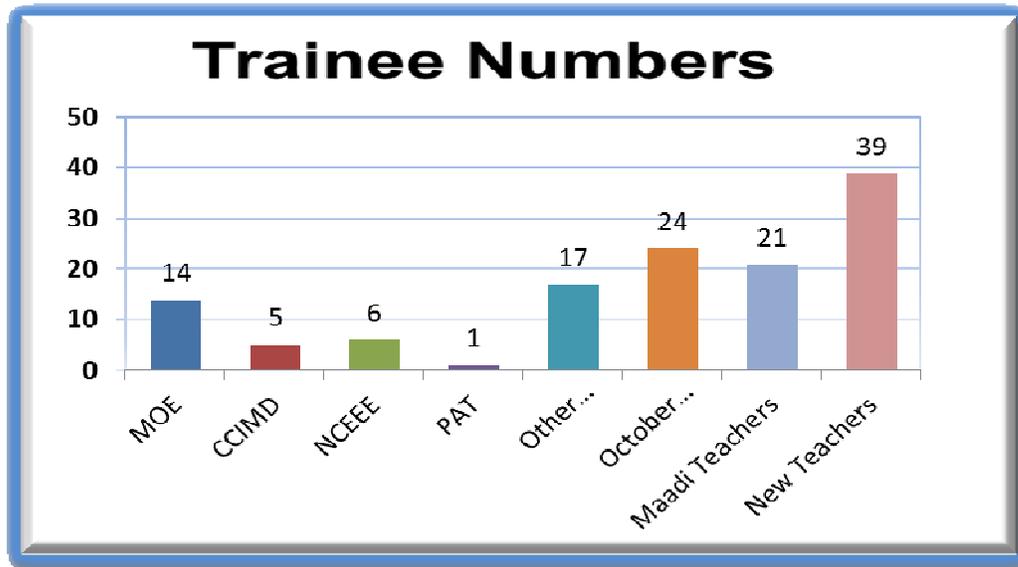
- **Video summer internship** - World Learning has created an additional summer internship for students interested in video production. The goal of this internship is for a small group of students to produce a brief promotional video highlighting some of the accomplishments of their schools. The application process was similar to the Fab Lab internship program, and currently two students from 6th October are working on producing this video. Their work includes translating the footage of Essam Hegy's interview on Egyptian TV, filming and photographing school events (including the aforementioned STEM Festival), learning to use non-linear editing software, and designing titles and graphics. The Academy of Science and Technology has offered their editing station for student use, but to date all work has been done on student laptops. Once a larger body of footage is prepared, students are planning on using a professional editing suite to finish their work.

- **English Proficiency** - STEM school curriculum uses a trans-disciplinary approach to enhance students' abilities to use project-based learning to address real-world issues that affect their family, their community and their world. These English-medium schools provide all content in English, preparing students with the knowledge and skills required to enter top-notch universities upon graduation. A challenge that emerged early in ECASE STEM school implementation is the lack of English skills among both teachers and students. Many teachers, good educators in their area of discipline, do not have the command of English required to deliver content in English and to guide students in understanding English-medium textbooks. Students also struggle with the English language skills required to comprehend academic texts, carry out research, write academic papers and reports, and to deliver academic presentations in the language. This is in spite of the fact that all students achieved a full grade in the English language as a prerequisite of their admission according to the Minister's admission decree. To meet the demand for rapid English proficiency improvement, and to help students and teachers gain confidence in using English for their STEM studies, World Learning developed an after-school English language program for students and teachers. During this quarter, World Learning carried out a rapid needs assessment of teacher and student English language needs, developed an English language curriculum to meet those needs, and implemented the ECASE English Language Program (ELP) at October 6th and Al Ma'adi Schools. This was done as World Learning took over the delivery of the English Language Proficiency training to both teachers and students from the British Council.  
**Detailed English Proficiency report attached in Annex C.**

**Training** – ECASE continues to compile all training data from the beginning of the project up to date. Despite the obstacles facing the project represented in students demonstrations and changing political climate, ECASE project held 8 events to reach a total number of events to 30 for total number of trainees 127, since the start of the project. Trainees included 39 female with



and 88 male. **Detailed report for each trainee with total number of training hours is attached in Annex (D)**



## 2. Activities leading towards accomplishment of Program objectives

### 2.1 Project Management

During this quarter ECASE Project submitted new version of PMP to comply with USAID requirements and still awaiting for USAID feed back

More cross-functional work in efforts to accelerate the curriculum development, prepare for the PDI, and to refine and create capstones for the 2013-2014 school year. While many protocols and tools have been put into place, these cross-functional activities provide the greatest opportunity for team alignment, understanding, and uncovering and handling of issues.

Specifically, representatives from both TIES and TFI were integrated into the curriculum development activities over the last quarter, led by 21PSTEM. Similarly, all three organizations provided support to TIES work on the capstones. The organizational representatives proved invaluable to the additional work to refine and create new capstones for the upcoming year. As such, these cross-functional individuals were able to support the creation of an internal interface system to further refine the objectives and interfaces between the PDI and the curriculum PD, in efforts to maximize on the ground support for teachers.

Schools Videoconferencing Finally, in efforts to work with the team, the greater use of virtual communications is needed, both for on-going feedback and communication across the globe, but also as a backup plan for in-country training due to escalating political issues in the country. While Cisco Systems may be able to offer access to a 30 person Virtual Technology Center near the World Learning office, a standard tool may still need to be used to access various people from multiple locations globally who may not have the same

technology as provided by Cisco. As such, other virtual meeting platforms were evaluated (through on-line forums and comparison articles). Options reviewed in online reports and documentation included well-known platforms such as Microsoft Live meeting, Citrix GoTo Meeting, and WebEx and more obscure names like Zoho, Yuma, and DimDim. Essentially, many of the lesser-known options may not have the support infrastructure in place needed for the on-going work of this project and are noted as being less reliable even with good internet capability. Of the more well-known products, GoTo Meeting received rave reviews across the board for functionality, ease of use, and the ability to use additional features to support training (raising of hands, surveys, etc). Additionally, the cost of GoTo Meeting seemed to be consistent or less than other providers, but with greater functionality and ease of use. It is anticipated that the schools will not need to purchase any license for these projects. Rather, they will need a good internet connection and the ability to download the product add-in on their computer prior to any virtual training session. World Learning will be running tests next quarter to test the validity of the bandwidth and ensure that such communication is available based on the current infrastructure within each school. Features of the basic functionality of GoTo meeting exceed options like Skype or Google Chat in that they offer not only audio and visual access through the internet, they also offer options to share computer screens, materials, record sessions, ability to do polls and surveys, and dashboards to monitor attendee participation. Additionally, GoTo meeting offers High-Definition video and tracking of people who are talking on the screen.

Currently, both TIES and 21PSTEM have licenses for this technology, which can be upgraded to GoToWebinar to provide greater training functionality. Therefore, it is recommended that the following activities occur in Q4:

- Pilot GoTo Meeting with select members from the schools to assess feasibility before any licenses are adopted further or existing ones upgraded.
- While it is anticipated this technology will work well with Cisco VTC, a conversation should be had with Cisco to determine their technology requirements and recommendations.
- Simple equipment like meeting microphones, speakers and a web camera have been procured for each school to run such software independently when needed.
- Explore cost options for a project license to reduce overall costs to each of the partner organizations.

## **2.2 Project Activities**

This section summarizes key accomplishments against the 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. The summary, below, is presented according to the AIP framework for ease of monitoring and reference against the implementation plan.

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

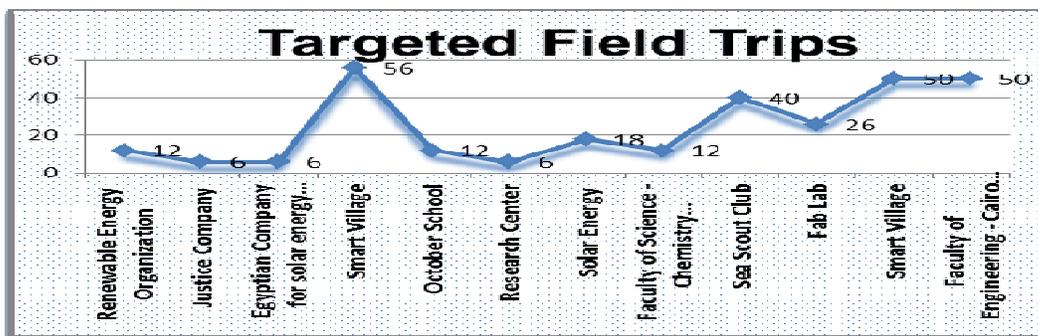
During this quarter, TFI worked to refine the specifics for implementing a student admission system to the STEM school that is transparent, inclusive, and criteria-based (Activity 1.1). The proposed framework for the student admissions process was sent to the MOE. A meeting with MOE representatives was held on June 19, 2013, to discuss the tools and tests (Suggested IQ test and math and science subjects test) which are used in the students' selection processes. MOE agreed to review admission tool which are used in order to achieve accurate selection in the future. **Suggested admission system attached in Annex (E).**

**In an effort to promote the STEM school within the surrounding community (Activity 1.2),** TIES underwent developmental work in preparation for meetings with BOTs (Activity 1.2.2) from both Ma'adi and 6th of October. A training documentation package (**Annex F**) was prepared for the Board of Trustees (BOT) or parent groups to provide an orientation regarding how parent groups can serve as advocates and partners in the startup of new STEM schools. The package was prepared by surveying of best practices from similar parent groups in the United State STEM schools during their startup periods. The schools were selected from those associated with the TIES team, specifically MC2 STEM High School and Metro Early College High School. Further, the lessons were transferred to those areas of parent involvement that were most relevant to the situation among the Egyptian STEM model schools and the context of the Egyptian Ministerial Decree regarding the role of the parent board.

During the April 2013 visit, training of the BOTs from both Ma'adi and 6th of October schools was planned. However, due to protests ongoing in April 2013, the partner board at Ma'adi had been dissolved just prior to the training visit. The prepared training package was provided to the Chair of the October BOT through a one on one meeting, with guidance regarding its use.

Future plans for BOTs involve feedback and just in time question response as the board package presented to them is put into practice by the group and as the schools evolve. Based on the circumstances associated with the protests, some aspects of the formulation of the parent board and how it interacts with school administration will need to adapt over time. However, the general lessons learned and the instructions provided in the training package are still considered valid.

Within Grade 3, it is critical for students to be provided with guidance for testing, assessment, and university admission. TIES suggested becoming the consultant support for the STEM college guidance program. During the past quarter, TIES provided World Learning with an *Egyptian STEM Model Schools College/University Guidance System List* for consideration in the overall College Guidance approach. In the future final determination to



move this activity forward and a plan to work closely with STEM schools to meet student needs will be further laid out. **Annex (G) includes the suggested model.**

Since this quarter includes the final year exams (May-June), the field trips were scheduled just for April. During this month 13 trips for both Ma'adi and October Schools were implemented for 12 different places with a total number of 294, students. **Annex (H) includes a detailed table for targeted field trips by October and Ma'adi to different locations.**

**In an effort to prepare students for the rigors of STEM education and leadership roles (Activity 1.3)** During this quarter World Learning continues the English proficiency program for October and Ma'adi students. Students were enthusiastic, motivated and eager to improve their English proficiency level. However, results have shown that the students in both schools need to work on improving their speaking and writing skills. They still have problems with the fluency and the accuracy in both of these skill areas. Students still lack the essential lexis and grammatical points that would enable them to produce a well-structured sentence in both speaking and writing. **Annex (C) includes English proficiency detailed report.**

**Objective 2: Strengthen the STEM school local initiative through developing an effective model of specialized high school focusing on science and math for gifted students**

During this quarter, the team was planning to work to **tailor the STEM school to the surrounding community through school specializations (Activity 2.1)** in the new vicinity of Mansoura. However, activities with Mansoura were put on hold due to a governor change and Alexandria is no longer set to open in September 2013. Efforts in both regions are on hold pending USAID determinations on support for those regions and further political stability. Further, to provide essential educational infrastructure to support experiential classroom activities (aka Procurement), TIES planned to support procurement lists creation for MOE approval for new schools. Again, this activity is on hold pending the initiation and approval of new schools once the supporting government is stabilized.

While not planned for Q3, TIES initiated a second school preparedness survey (Activity 2.2.1) in mid-June to collect baseline of teacher needs data for the 2013-14 School year. The World Learning team administered the survey to the teachers upon contract or hire.

During this quarter 60% of science lab equipment were delivered to Ma'adi School, moreover science lab books and kits were delivered to both Ma'adi and October schools. Most of the requested lab furniture (shelves, half cabinet, drawers, glass holders and basin) were delivered to both Ma'adi and October schools. Finally Fab Lab items were cleared from custom and delivered to both schools and installation will be during next quarter.



In further support to provide IT infrastructure to both Ma'adi and October Schools during this quarter the following activities were done;

- Two Dell servers were delivered to Ma'adi School and also air conditioning unit for the server room was installed.
- As mentioned in the previous quarter ECASE project tendered for LAN in the two buildings in Ma'adi School (main building and dorms). During this quarter the LAN is installed and ready in Ma'adi and is under construction in October.
- Active network elements solutions (switches and fire wall appliance) for October and Ma'adi schools were technically selected. Cisco switches were ordered, however, Firewall, Web Filtering and bandwidth Control appliance are under negotiations, making sure that the model selected is capable of supporting more than 450 users at a time.
- October Fiber Optics and LAN Network which connects the main school building, three dorms buildings and twelve Labs using about a thousand meter length of network cables was tendered, awarded and installation is underway.



During Q3, TIES and World Learning have continued to collaborate to **create sustainable and mutually-beneficial Public Private Partnerships (Activity 2.3)**. TIES has continued to talk with IBM, National Instruments, Intel, and Cisco about their social investment in the ECASE project as private partners. TIES worked with World Learning to formalize the National Instrument procurement and the Cisco Academy internship. World Learning and TIES host weekly calls to advance the work with nine additional companies previously contacted during the April 2013 visit to Cairo.

Girls ICT Day is an annual initiative organized by the International Telecommunication Union (ITU). ITU is a United Nations agency. In celebration of Girls in ICT day Cisco invited a group of 20 female pupils from Ma'adi school. The event, designed to introduce girls to exciting opportunities in the information and communications technology (ICT) field. They also met women working in the ITC field and students from Morocco and Lebanon using Cisco's technologies through (TelePresence).

On May 1, 2013, Essam Heggy visited the STEM school at 6th of October. He gave a lecture to students – both boys and girls - in which he stated how he developed his own career and got his postgraduate study. He mentioned how he was able to get a chance to work at NASA. He described his research and work on discovering life on Mars and gave a presentation and movie to explain the work done on his research. At the end of the day, Essam Heggy had a tour in October School and viewed the students' capstone projects. He made constructive comments concerning the students work.



In the last quarter, the local offices of Google have agreed to provide training and technical support to both schools. Specifically, a representative from Google (Peter Kozman) and his teammates have led several trainings on Google's cloud-based toolset for teachers and students at Maadi. Each training session was carried out in the computer lab with small groups of students and a separate training for all teaching staff. A similar training was conducted at 6th October prior to the ECASE project and the IT team in place is currently well-equipped and effectively managing their Google Apps deployment.



After discussion with leadership at Google regarding the existing disparity between the email system at 6th October and Maadi, a subdomain was established for Maadi with address ending in "[@stemmadi.edu.eg](mailto:@stemmadi.edu.eg)", and emails created for all students and staff. A unified email system at both schools will greatly increase their capacity for long distance coordination and school wide organization. The IT team at Maadi have eagerly adopted this toolset and worked with Peter Kozman to develop their own in-house solution for emailing all semester grades to students.

Additionally, Google Apps was heavily used during the Capstone process as a tool for collecting student work, soliciting evaluation from experts in the US and Egypt, organizing all data, and communicating feedback to students. This template was created with the input of the 6th October Capstone coordinator and IT staff and is ready for use in the upcoming school year if deemed necessary.

To develop relationships with universities, 30 Teaching Assistants, professors, and environmental experts were selected from Cairo and Ain Shams Engineering and Science faculties to evaluate Capstone projects of STEM schools. The full day event took place at the big gym hall at Cairo University. It was a good opportunity for the students to present their projects and interact with university professors for the first time; giving students a preview of how projects are evaluated in universities. On two different days, the students' capstone projects were exhibited at the schools for university teaching assistants, Ain Shams Dean of Engineering, IBM CSR person and the General Manager of National Instruments in the Middle East attended the exhibits, viewed the projects and asked students technical questions about them that indicated their deep understanding of their design concepts.

To expand the scope of PPP, many international companies, such as BP, Apache, Unilever, Nestle, Proctor & Gamble, Henkel and Shell were approached to support STEM schools for corporate social responsibility contributions and financial investments. Unfortunately, the current difficult economic and political situation does not allow some companies to invest in social responsibility projects this year. ECASE is still in touch with those who have not given us final answers yet regarding different in kind means of support.

Throughout Q3, TFI continued to develop **extracurricular activities that complement classroom content and school specializations (Activity 2.4)**, specifically as related to the EiPIC program. In addition, TFI completed the initial phases of web design and development to facilitate student registration in this program. EiPIC's online student registration process is now active and can be accessed at <http://www.fi.edu/EiPIC>. In Q4,

TFI will work with World Learning and the schools to set dates for the program rollout during the first half of the upcoming school year. To facilitate implementation of the program, TFI will need to determine a time to meet with students (only a few hours) to introduce the extra-curricular program and to identify 3-5 days (without teachers) for the first portion of the program implementation (workshops and panels with experts) development phase.

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

In efforts to **adapt teacher and administrator performance standards for the STEM school context (Activity 3.1)**, **assess progress through classroom observations (Activity 3.3)**, and **build school principals' ability to develop and implement strategic STEM action planning frameworks (Activity 3.4)**, 21PSTEM further refined ECASE's Observation Protocol and Observation Protocol documents. In April 2013, 21PSTEM created a preliminary draft of the instruments, resulting from research conducted into five of the most popularly used observation instrument in the U.S. It was a stopgap to be used for those observing classes that was based upon descriptive criteria rather than evaluative measures. Subsequently, a new classroom observation tool was developed with a two-fold purpose: 1) To promote long-term growth of teacher pedagogical skills through supervisor-teacher reflection on classroom practice and 2) To provide evaluation of specific lessons in the context of measures proven to enhance classroom performance and subsequent student learning. Version 2 entitled, *Classroom Observation Scale and Using the Classroom Observation Scale*, promotes a much deeper examination of classroom practice and is predicated upon a holistic understanding of classroom practice and features a rating scale that resembles a proficiency scale similar to the PARLO continuous learning practice. It should be noted that prior to implementation, there is a need for supervisor and teacher training. **Classroom Observation Scale attached in Annex I.**

In addition to the observation instrument, 21PSTEM created a matrix comparing the Classroom Observation Scale to Standards-based Classroom Observation Protocol for Egypt (SCOPE). The SCOPE instrument is a classroom evaluation tool designed to assess teacher use of instructional practices that are characteristic of the standards and reform-based teaching methods outlined in the National Standards for Education in Egypt. Funded by USAID, the SCOPE instrument was developed by the Education Reform Program (ERP) and has been used to assess teachers in ERP schools since 2006. The instrument consists of 23 items: 17 indices to measure teacher's instructional behavior and six indices designed to assess engagement with learning behaviors among students.

All of the indices of the SCOPE document were matched to at least one of the scales on the Classroom Observation Scale. Additionally, the Classroom Observation Scale has two advantages over the SCOPE instrument. First, it is considerably shorter than the SCOPE instrument and easier to administer, and second, it focuses upon development of supervisor-teacher reflection of classroom practice in addition to serving as an evaluation tool.

Finally, there were two other documents referenced in the Q3: End of Year Evaluation Instrument for Teachers and End of Year Evaluation Instrument for Teachers. 21PSTEM discontinued development of these two instruments pending the go ahead from Egyptian officials.

**In order to build teacher capacity to effectively implement STEM curriculum in the classroom (Activity 3.2)** World Learning continued the English proficiency program for October and Ma'adi teachers. School teachers showed some improvement in their speaking and listening performance. However, they were not punctual in showing up in class on time. Generally, school teachers' performance and attitude towards learning English has been positively changed to a great extent. They are willing to share in pair and group work. They are able to do self-correction and aware of the errors they produce, especially in grammar. They are eager to ask for meanings of new words; they even remind each other that they have to speak in English all the time inside the class. **Annex (C) included English proficiency detailed report.**

TFI hosted two orientation meetings with the teachers who would be facilitating the workshops that comprise the 2013 Summer Professional Development Institute (PDI). The facilitators learned about the ECASE project and how the Summer PDI fits into the bigger picture. Using the pillars of backwards design, inquiry, and projects, TFI is helping the Egyptian STEM school teachers to understand how to be effective in the classroom, how to take a curriculum and implement it using the pedagogical foundation of the initiative, and best practices for encouraging student-centered and student-driven learning.

The TFI group collaborated to design and refine the PDI schedule, deconstructing each hour of each day to determine where the schedule has its greatest strengths, weaknesses, and to examine the logic of the sequencing. TFI also drafted the Teacher's Companion, the primary purpose of which is to provide a more detailed overview of the schedule for the four weeks of the Summer PDI (two weeks in June and two in August). All participating facilitators closely reviewed the Teacher's Companion to ensure alignment with the Summer PDI schedule and clarity and consistency of vocabulary. The PDI facilitators also worked in discipline-specific teams to review the curriculum materials that have been provided by the partners at 21PSTEM. The purpose of this exercise was to identify points of integration between the curriculum materials and the plans for the pedagogical professional development workshops in the Summer PDI. To advance these efforts, the participants drew on their past experiences to craft specific activities in order to advance each of the objectives of the Summer PDI.

PDI was finally initiated at the end of June 2013, with 10 days of scheduled PDI for the teachers, held at the Wady el Nile Club in Ma'adi. To address the needs of teachers at different levels, teachers were split into "experienced/existing" and "beginner/new" groups. Teachers returning to the 6th of October and Ma'adi schools who participated in previous pedagogical professional development trainings were placed in the experienced group. All others participated in the program for beginners. At several points, these groups were combined to encourage collaboration between teachers of different experience levels and to more efficiently deliver material relevant to all. The format for each session varied to ensure a broad exposure to different teaching strategies and techniques.

The PDI was originally scheduled for a total of 10 days across a 2-weektime frame. Due to the scheduled protests on June 30, 2013, and the anticipated escalation of violence in-country, the second week, 5 total days, was cancelled and the PDI Team had to leave early. Details of the daily progression of activities and an assessment of the learning outcomes are included in the TFI trip report. The following key accomplishments can be noted:

- The support provided by the smaller US team during the difficult student protests in March paid off. Experienced teachers arrived at this PDI with extreme enthusiasm and investment in the PD and support of the US team. They also demonstrated that they have built and strengthened a solid community amongst themselves that they can leverage to support one another during the school year.
- Similarly, the beginning teachers demonstrated excellent enthusiasm and investment in STEM teaching and student-centered practices. They worked hard throughout the week to build skills and vocalized the importance of their work consistently and emphatically.
- Due to the desire of experienced teachers to do more with the curriculum, the first semesters of years 1 and 2 were introduced to teachers on Day 1 by 21PSTEM. This effort, in combination with experienced teachers demonstrating a readiness beyond what was expected based on prior PD sessions, allowed TFI to focus efforts on working with the curriculum in lieu of emphasizing capacity –building exercise as originally planned. This change was specific to experienced teachers. New teachers’ training mostly progressed as planned.

PDI for Q4 will be reevaluated based on a greater focus on curriculum and also to accommodate the abridged schedule of PDI I cut short in June. TFI will consider plans to return again in July 2013 or to accommodate an accelerated schedule over an additional two week timeframe in August (as originally planned for PDI II). **PDI complete document attached in Annex (B)**

In addition to PDI, initial work with PARLO was planned. However, training workshops in the past quarter were delayed due to uncertainty in teacher selection and because a greater focus was needed on completion of the curriculum. At this time, an introduction to PARLO will be integrated into the curriculum Professional Development to be scheduled after PDI II and prior to the start of school, most likely within the first two weeks of September, 2013. That said, all work on curriculum and capstone development has focused on the development of key learning outcomes and activities associated with implementation in PARLO.

**To build school principals’ ability to develop and implement strategic STEM action planning frameworks (Activity 3.4)** Further, activities in support of whole school change management (Activity 3.4.1) involves training in school leadership during a two week school leadership program to include specific STEM related areas, as well as general leadership and management skills. During the last quarter, however, much emphasis occurred around end of year activities and there was much discussion regarding the change in administration at the schools. As such, this effort was put on hold due to lack of stability in the principals at the schools and the MOE's reluctance to approve their travel to the US for training. Formal school leadership training programs exist and may be utilized during the following summer, however, the model for leadership training also needs to be revisited with planning for Year 2.

During the visit by TIES staff in April 2013, TIES provided significant support around the capstones (see activity 4.1). It was apparent that the principals needed additional support to carry out successful capstone projects, which constitute a significant portion of student grades. Within a 4 week timeframe, TIES provided action planning workshops for principals, teachers, and students centered around the conduct and evaluation of capstone projects (Activity 3.4.2). Overall, a support activity was undertaken to assist in completing

the capstone experience for students at Ma'adi and 6th of October during the month of April 2013. Due to the unanticipated delays and distractions associated with various protests and related unrest throughout the school year, it was determined that capstone activities were falling behind and work among student teams was being inconsistently applied and supported. For this reason, a capstone journaling and poster presentation approach was adopted and implemented over the last four weeks of the current school year. A capstone design and rubric process was established based on interviews with student teams and an assessment by the TIES team regarding the practical measures in matters of implementing during the final weeks of their school year. It was determined that a highly valuable experience for the students would be to complete and demonstrate their capstone design challenge work in the form of a research poster, presented to an authentic professional audience, in a public university setting. The logistics were established during the visit to Cairo, and university evaluators, principals, teachers, and students were trained in the process. TIES also implemented a training protocol via Skype to maintain continued training and support to principals and university evaluators (Activity 3.4.4). A journal to capture progressive reflections of students also was established and a mechanism for students to complete electronic entries into this journal was put in place by the World Learning team. Six journal sessions following a learning progression shown was provided and trained to the students and teachers and administrative principals of both schools.

Further, TIES and 21PSTEM sent staff to support the formal poster presentation at the end of April 2013. This team worked with World Learning and the schools around the clock to train evaluators for product demonstrations and poster presentations. They also helped refine the logistics for the Poster exhibition and supported set up of the materials. Key outcomes of the poster presentation as takeaways are:

- Students were very proud of their accomplishments and many talked about how hard it was to juggle the teamwork, progression of ideas, material procurement and other classes and still have enough time to sleep with the Capstone Exhibition expectations. That said, they also expressed concerns over the grading and impact on college acceptance.
- Panelists/Evaluators (from Universities) were impressed with the level of work. In fact, several indicated that when these students hit their university classrooms they would have to revise what they teach in universities and how it is taught. Many of the panelists wanted to know if there may be opportunities for them to get more deeply engaged with these schools.
- The exhibition events tied up several WL staff members in planning and organization as it was a huge undertaking. In the future, it is recommended that a standard schedule and playbook be created and that the event be expanded from 1 to possibly 3 days. Due to the timing and availability of the Exhibition hall, the parents and teachers did not get to enjoy the student work. This was arranged later during exhibits at the respective schools.
- Identification and training of the evaluators is critical. While it proved successful, much training and normalization was needed. In the future, it is recommended that training be calibrated with a video. In addition the scoring methodology and platform created by World Learning was excellent to distribute, view, and assess posters.

To provide consistent interpretation and scoring of the student work, members of the TIES team evaluated the student responses in six journal sessions and provided scoring feedback as part of the overall score for *The Student Experiences*. Following the completion of the capstone experience, which was designed and accomplished in a matter of just 3 ½ weeks, the TIES team also carried out an independent review evaluation of the approaches taken during the capstone experience – examining the design of the Capstone, the fidelity of how it was carried out, and the consistency of the reviewers scores. All this was compiled based on interviews with three experts in the field. This independent evaluation will serve helpful in developing the capstone approach for next year.

While not an expected activity this quarter, the creation of the Egyptian STEM Model School Design Blueprint (Activity 3.4.3) continues to evolve. The Blueprint and process tools are in development and are intended to assist the current and new schools in assessing the progress toward the design and implementation of the ECASE STEM program.

Finally, TIES was scheduled to support end of school year 3-day retreats (Activity 3.4.5). Because of the overall focus on Capstones and their grading, it was determined it would be more feasible to conduct a retreat at the beginning of school and as part of the overall training on curriculum and capstones. In the interim, the team has held an internal retreat with the Capstone team, created a needs list for school startup in conjunction with 21PSTEM, conversed with school leadership, and plans to participate in a management retreat with World Learning in Q4.

To support **creation of a virtual STEM professional learning platform (Activity 3.5)**, TIES worked with an independent consultant to identify an approach to overall platform selection. As the work progressed, it became apparent that there were several complexities to overall selection, some of which being:

- No Student Management System in place at the schools for information to feed into a learning platform
- Decisions regarding other platforms to support assessment and curriculum had already been made
- The priorities of cost, sustainability, and technical requirements were unable to be sorted due to the ongoing changes in the schools and complexities of various work demands
- The priorities needed to be defined locally and in conjunction with MOE

Due to the inability of the TIES consultant to define these priorities directly within the ECASE team, a decision document was created, identifying the next steps and also including a preliminary evaluation of various tools to support Student Management and a broader focus of a learning Platform. At this time, TIES work is on hold as the Consortium determines the appropriate path forward to procuring some of the basic infrastructure for the schools.

Finally, the ECASE team had been working to provide opportunities for Egyptians to **experience best practices in STEM through Interactive US Study Tours (Activity 3.6)**. The focus of the visit was designed to be done in the early part of Q3 with representatives from Mansoura and in support of their school design work. However, the governor in Mansoura was changed and the activities were put on hold pending further decisions on a STEM school in that region with the new governor, World Learning, and USAID.

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

21PSTEM had several meetings throughout this Q3 to coordinate the **design of school-driven curricula (Activity 4.1)**. 21PSTEM initiated the use of CurricuPlan software for course mapping and unit development and in support of ultimate lesson plan creation. This tool was adopted by the entire 21PSTEM Curriculum team for the creation of the Integrated STEM Curriculum 1.0. By mid- June 2013, all STEM disciplinary courses had the first semester mapped out and at least the first unit developed so that the PDI team could use these materials for the teachers to work on lesson plans. By the end of June 2013, all 3<sup>rd</sup> year courses had been identified and many textbooks were in the process of review. In the early part of Q4 and by July 31, 2013, 21PSTEM expects to have all units mapped into CurricuPlan Also by July 31, 2013 21PSTEM anticipates identification of all Year 3 textbooks.

During 21PSTEMs April 26-May 3, 2013 trip to Cairo, in addition to assisting with the capstone presentations for both schools, two one day workshops were conducted, one for each school, reviewing and getting faculty input on the curriculum and capstones. The capstone decisions by the faculty were critical in setting the stage for the capstone development workshop in Cleveland in early June 2013. In this workshop, TIES, 21PSTEM, and TFI reviewed previous capstones and mapped out the details of all capstones for all grades and all semesters (Activities 4.1.4 and 4.1.5). In addition, the team cross-referenced the capstones with disciplinary learning outcomes to ensure the trans-disciplinary linkages.

During 21PSTEM's June 16-25, 2013 trip to Cairo, a two-day workshop with the experienced STEM teachers from both schools to review CurricuPlan work to date was conducted and focused on unit construction, capstone development and coordination with the disciplinary courses. During this time, teachers worked on developing the pillars for the year 1 semester 2 capstone, and the teachers provided valuable input on the year 3 course selections.

In addition, during the June 2013 visit 21PSTEM presented the curriculum and CurricuPlan to the MOE Science and Mathematics Curriculum teams (Activity 4.1.4.1).

Going forward, 21PSTEM will work to further refine the curriculum, with a completion of the science curriculum in the early part of Q4. A formalized plan for the mapping, contextualization and rollout of the math curriculum will be defined, with the schedule pushing toward readiness of Semester 1 courses by the start of school. In addition, Q4 will focus on professional development around the curriculum, and will include training on the curricular materials for all grades, the implementation of PARLO, and connectivity and training for Capstones and Fab Lab.

Further, in support of curriculum implementation, the ECASE team is exploring a Curriculum Coaching model and plan, combining core elements of effective coaching with the essential goals of professional learning communities in ways that advance both school and systemic improvement. The coaching model is designed to create curricular delivery, internal consistency, and accountability for the learning outcomes. Through the model, being refined by TIES, curriculum, content knowledge, and instructional pedagogy coaching is embedded in daily practice. The coaching is tailored to needs identified by school data and school participants. The focus on curriculum content and instructional pedagogy encourages the continuous use of data analysis to inform reflective practice. A week-long training plan

and Coaching Manual, based on a preliminary outline shared with World Learning, is under development and is expected to be completed by late July.

To **develop comprehensive assessment instruments aligned to STEM curriculum (Activity 4.2)**, 21PSTEM collaborated with World Learning Cairo to define a plan to replace the Thanaweya Amma and to make decisions about college placement for students who will be graduating from 6th of October in the spring of 2014. This quarter, the assessment group at 21PSTEM has focused on developing recommended assessments. Assessment enable student placement based on an individual score comprised of 40% scores on an internationally benchmarked test of college readiness/aptitude (probably the ACT), 20% Misconception Inventories, 20% Capstone, 10% discussion and participation, 5% laboratory experiments, and 5% research/presentation. Work done follows:

- **Internationally Benchmarked Test** - 21PSTEM has gathered necessary information and devised a plan to prepare students for the ACT format, language, etc. in order to ensure the test does as fair a job as possible measuring student abilities. Before implementing the plan, 21PSTEM is awaiting the Ministry of Education's final approval of the ACT use. Final approval is anticipated in late July 2013.
- **Misconception Inventories** – Working with a psychometrician from the University of Delaware, 21PSTEM has developed and begun to implement a plan that will create valid and reliable misconception inventories that can be administered to Egyptian STEM high school students during the 2013-2014 school year. These inventories will measure students' deep understanding of central concepts in mathematics, physics, biology, chemistry, and geology that are addressed in the Egyptian STEM school curriculum. Before the end of 2013, 21PSTEMS will also identify a set of concept inventories that can be used to help screen potential teachers at the Egyptian STEM schools. These concept inventories were developed by professors at English-speaking and Arabic universities to test student understanding of key concepts addressed in STEM courses at institutions of higher education.
- **Capstone**- Partners from 21PSTEM, TIES, and The Franklin Institute worked jointly to incorporate subject specific learning outcomes from each semester's scope and sequence into this coming semester's Capstone. Later, the team will be able to build on this work. Specifically, 21PSTEM will develop rubrics integrated with an e-portfolio (Activity 4.2.5) that will use information from students' Capstone projects to assess STEM subject-area learning outcomes.
- **Discussion and Participation** – 21PSTEM has developed procedures for piloting and revising the 21st Century Skills Likert scale so that it can replace more subjective teacher judgments in evaluating student discussion and participation. While launching the 21st Century Skills measurement instrument during the 2013-2014 school year is likely, 21PSTEM believes that students will need time to learn about what is being measured and to work on improving the measured skills before it would be fair to use the instrument for high stakes decisions. Consequently, the use of teacher judgment to measure Discussion and Participation is recommended for students who graduate in the spring of 2014. With a subsequent cohort of students, the 21st Century Skills measurement instrument could begin being used.

During the next quarter, 21PSTEM will continue to support the adoption of assessment instruments by setting up Egyptian STEM schools as ACT testing sites, after consulting with MOW and gaining their approval, implementing ACT preparation as soon as students return

from break, developing and piloting a set of Concept Inventories tailored to the needs of Egyptian STEM schools, using existing concept inventories to help select incoming teachers, and refining and piloting the 21st Century Skills measurement instrument. To conduct this work, 21PSTEM will need to work with the STEM school teachers to develop end-of-course exams and will need to work with teachers to develop PARLO outcomes and assessments. PARLO documentation of student proficiency by learning outcome will be an important part of students' e-portfolio.

In Q3, to **build the capacity of the National STEM Board (Activity 4.3)**, TIES created a training package for the national Board of STEM schools (**Annex J**). The focus of the training package was to set in motion the important elements associated with the formation of a network of schools and the architecture that would be most helpful as new schools come online in the coming years based on the Egyptian ministerial decree. A theory of action was presented in the training package that demonstrated the progression of scale that can occur as new schools come online and become connected to the network. The training package was provided to World Learning and stands ready to be trained to National Board members as schools become more involved over time and new schools open. Again, this is all hinged on the political situation and whether new schools will open soon.

Further, work with the National Board to design a Network Framework and networked schools (Activity 4.3) is on hold pending principal and teacher stability within the existing schools and the creation of additional new STEM schools in Egypt.

**Objective 5: Support the MOE in the upgrading of science and mathematics curriculum standards, students assessment, and teacher preparation for the mainstream.**

As The Ministry of Education produced a worthy and comprehensive five year Strategic Plan back in 2007 to cover the period until 2012. Various local and international consultants and donors supported the Ministry in producing it, including a primary role by USAID, and the result was regarded as a model for other Ministries to follow suit.

Due to the unrest and the repetitive governments that followed the January 25th revolution in 2011, no effort targeted the update or reproduction of a new Strategic Plan. The last Minister, Dr. Ibrahim Ghoneim, considered the issue and embarked on a concerted effort to produce a new ten year Strategic Plan 2014-24. The Ministry's team that participated in putting together the first Strategic Plan was assigned to the task headed by Dr. Fouad, who was recruited from within the Ministry cadre to be responsible for this effort.

Early this year ECASE was made aware of this effort through its association with the Ministry but was never invited by USAID to participate or provide support. This invitation was verbally received from Hala ElSerafy this quarter by all USAID funded Education projects during a meeting at MOE. The request was to act through each project's mandate to try and support the Ministry's effort in laying out its Strategic Plan. Each project is obligated through its Agreement/Contract to institutionalize its activities within the Ministry, and such an objective opens the door for the projects, including ECASE, to act and channel their support through the laying out of the Strategic Plan that guarantees the inclusion of the projects' experiences and success stories. It is viewed that if each project contributes a technical input to this Strategic Plan based on each project's areas of expertise, this could

bring about very valuable content to the process. In addition to supporting the expenses incurred for the activities and other in kind contributions.

ECASE led the meetings with the Ministry in this regard and drafted a concept paper that outlines the types and levels of support that each project can provide (**Annex K**). This concept paper is exhibited in Annex Y. This concept paper was discussed among the projects and submitted to Hala ElSerafy for her review and endorsement. Hala communicated the concept paper to Dr. Fouad and his team and ECASE met with the MOE Strategic Plan team to explain its content and the limits of the contributions that each project can provide according to USAID regulations. Later on each project had a separate meeting with the MOE team to discuss their possible contribution. The projects also met with Hala ElSerafy and suggested a list of consultants, with whom the projects previously worked, including senior project staff who are well versed on certain technical topics, to act as moderators and facilitators in the workshops suggested by the Strategic Planning team. In addition, the projects agreed with the team to make available a strategic planning expert to act a liaison between the projects and the MOE Strategic Planning team to manage the support provided and ensure that whatever is offered is according to the needs of the team. Also, an accountant is expected to accompany the strategic planner to ensure that expenditures are swiftly made but according to USAID regulations.

During these sets of meetings between the projects and the MOE team it was agreed that efforts on the Strategic Plan should start soon because two of the four USAID funded education projects, namely TILO and GILO, are closing and it would be a golden opportunity to tap into their resources before they end. The efforts are borne by four project and not only two (ECASE and ESP). The MOE team indicated that they will work on a quick start and get back to the projects.

During this quarter Joseph Merlino and Deborah Pomeroy from 21PSTEM and Janice Morrison from TIES in March/April and in June held various meetings with Dr. Fouad and the Ministry's Strategic Plan team that are mentioned in the Meetings section of this report (**Annex L**). These meetings aimed to explain the STEM education system adopted by the project, the efforts exerted by ECASE so far, the role of the various subcontractors and consultants and what efforts are envisioned in the near future. It also focused primarily on STEM as an alternative to Thanaweya Amma, the collaborative process between ECASE and the MOE concerning the laying out of the STEM curriculum, the idea of the Grand Challenges, where it evolved from and how it brings about international best practices and tailors them to an Egyptian context. It also discussed assessment, technology, capstone projects and their successful manifestation of project based learning in schools.

ECASE expects for the MOE Strategic Plan team to act upon the agreed upon points presented by USAID to the Ministry and inform ECASE of its needed involvement soon so as ECASE can coordinate for such support. Joseph Merlino will lead this effort within ECASE and is expected to contribute in writing to the Strategic Plan in topics related to STEM Education and Curriculum.

21PSTEM collaborated NCEEE in upgrading science and mathematics curriculum standards and students assessments representatives (Activity 5.2) through a ½ day session. Further work will be scheduled pending approval from MOE.

### 3. Challenges and Resolutions

A variety of challenges have arisen in the this quarter, teachers training for the new curriculum 1.0 and for the infusion of capstone projects into the curriculum, and the continuation of the two weeks PDI training is expected next quarter and before the start of the school year in mid-September. The marches that took place on June 30th and caused the first PDI two weeks training to be shortened to only one week is a cause for concern. The US Embassy closed as a consequence and US non-essential personnel were ordered to depart. This closes the door for any US consultants to come and deliver training in country and throws the plans for training in August and September, if the ordered departure still persists, out. ECASE faces the rolling out of a new curriculum and teachers ought to be trained on its content and delivery mechanism, also the interlocking between this curriculum and the capstone projects is paramount in the first semester and needs to be transferred to the teachers. It is important to view this as a major impediment for the start of the school year and alternatives need to be presented, discussed and explored so that school starts smoothly.

As part of the political unrest and demonstrations engulfing the country, everybody is recognizing their rights and feels the urge to demand them whether they are rightful or not. This is part of the demonstrations at all levels all over the country. This euphoria for rights, while healthy and encouraged, has reached the schools and students, first in October and later in Maadi, demonstrated for their right to university admission. Since the STEM degree is regarded by the MOE as an alternative to Thanaweya Amma, it is a gateway to public and private university admission in Egypt. STEM schools students want to fully understand their chances when they finish their secondary STEM education: Whether they will have enough seats dedicated to them in top universities all over Egypt and particularly in Cairo and Giza where the two schools are located.

Because the students are accomplished and sustained outstanding grades during their preparatory education they foresee similar grades if they take the Thanaweya Amma route instead of the STEM education they chose, but this is not necessarily the case. One thing the Ministry is not willing to approve is for the students to use STEM schools as a backdoor to guaranteed admission in top universities. Students, therefore, have to take their chances and achieve high grades in their STEM exit exam in order for them to get admitted to the universities they wish. The Ministry of Education in agreement with the Ministry of Higher Education and the Higher Council of Universities have reached a percentage allocated to STEM school admissions in Egyptian public universities. That agreed upon percentage is 1% in each university, which the students do not see as adequate compared to their expected high achievements. Due to the fact that the STEM schools harbor high achievers, students claim that the 1% allocation is only commensurate with their total number but not with their expected achievement, and that they may consider their placement in typical Thanaweya Amma schools to give them a better chance because they will be achieving higher than a typical students.

Their argument does have merit, but the allocation cannot be increased. And the project along with the MOE has worked hard to improve this percentage, but unsuccessfully. There is a present attempt to add the STEM students to the 5% already allocated to American Diploma, International Baccalaureate and the British GCSE. This way the STEM students will have a better chance because the allocation is larger and the students in these types of degrees are

not all high achievers, hence, less competition. Until then, this issue will be a daunting problem for students especially the ones entering their third year in October.

This problem caused students to demonstrate, not attend classes, and abstain from corresponding/negotiation with the teachers and principals. ECASE through the STEM Board communicated with MEK to convince them to sponsor scholarships for students in local private universities, to which MEK agreed and promised funding 50 scholarships in Egypt in addition to five international scholarships in universities abroad. This scholarship eased the pressure off this upcoming third year and postponed the problem till next year. However, this year with about 107 students expected to graduate in summer of 2014, about fifty of them are expected to fill seats in top public universities according to the 1% allocation and another 55 are offered scholarships to local and international universities, which is quite adequate.

## **Annex A: Capstone Independent Evaluation**

## **Annex B: Summer PDI Teacher Companion**

## **Annex C: English Language Program**

## **Annex D: Training Hours**

## **Annex E: Student admissions criteria**

## **Annex F: Board of Trustees Training Package**

## **Annex G: Egyptian College Guidance List**

## **Annex H: Actual Field Trips**

## **Annex I: Classroom Observation Scale III**

## **Annex J: National Board Workbook and Recommendation for Establishing a Charter**

## **Annex K: Proposed Assistance to MOE Strategic Plan**

## **Annex L: Minutes of Meeting During the Quarter**

## **Annex M: Samples of Capstone Projects**