

QUARTERLY REPORT FOR INnovations in Technology-Assisted Learning for Educational Quality Project (INTALEQ)



A Global Development Alliance Project



Quarter 3 FY 09 Report for the INTLALAQ Project (April-June 2009)

Prepared and Submitted by Education Development Center, Inc



EXECUTIVE SUMMARY

The dominant theme this quarter was monitoring and evaluation. By far, the largest percentage of project work this quarter was directed toward M&E. This does not mean there were no other significant activities. The project held its first official advisory committee meeting in Ta'iz, on May 10th and, antecedent to that, the project held a summit in Ta'iz to look at project progress to date and share lessons learned from the pilot phase in Sana'a with stakeholders from the three governorates which will begin INTALEQ activities in the summer of 2009.

Monitoring and evaluation activities centered largely on student assessment in this quarter. Students in the INTALEQ and control schools were given a pre-test last quarter and sat for the post test this quarter. Results for the INTALEQ schools were excellent, demonstrating that the project has had a positive impact on student learning in the four subject areas, in comparison to students in the control schools. On average, in all subjects, students in the INTALEQ schools scored 8 points higher on the post tests than their counterparts in control (non-INTALEQ) schools. This gap was statistically significant (i.e. did not occur by chance) and the results have a 95% confidence level. The impact results were extremely encouraging and the full student assessment report is attached as an appendix to this document. The statistical analyses were completed in June, although the report was released in July.

The INTALEQ project summit in Ta'iz was the other real highlight of the quarter. Teachers from the six INTALEQ schools in Sana'a did a remarkable job of presenting their work with the new teaching methods, using audio and video clips and sophisticated PowerPoint presentations. The presentations highlighted their grasp of the concepts behind student centered instruction and showed their creativity in utilizing the new method and the learning objects to animate their instruction. The event was attended by dignitaries from the Ministry of Education, the four governorates and the private sector. The Haile Saeed Anam Group sponsored the event and it served to highlight HSA's strong commitment to public private partnerships for improving the quality of education in Yemen.

The project also held its first advisory committee meeting on May 10th and this proved to be a very useful meeting for the implementing partners in particular. USAID and private sector partners shared some excellent, "on target" feedback with the MOE and EDC and offered suggestions on generating further interest and involvement from other private sector and community partners. David Besch from USAID Egypt's Regional Alliance Office offered some very salient suggestions for strengthening the partnership based on his extensive experience with PPPs in the region.

Finally, EDC and the MOE met several times, once with the EDC home office present, to discuss modes of implementation going forward. While there were operational and logistical issues to work out, the meetings signaled the Ministry's keen interest in and ownership of the project.

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ACRONYMS and ABBREVIATIONS

EDC	Education Development Center, Inc.
ERDC	Education Research and Development Center
HSA	Haile Saeed Anam Group
MOE	Ministry of Education
MOU	Memorandum of Understanding
USAID	U.S. Agency for International Development

I. Overview

This report covers the period of April – June of 2009. This was an eventful period for INTALEQ, as the interventions were in full swing in the six pilot schools in Sana'a. INTALEQ staff and the MOE were busy providing support to teachers using the new teaching methods and the digital learning objects and were especially busy with monitoring and evaluation activities in Sana'a. In addition, work was ongoing for the next semester in terms of planning for the expansion of the project to Mukalla, Aden and Ta'iz and with the adaptation of the digital learning objects for the 1st semester of 10th grade math and science subjects.

This overview presents a brief summary of the highlights that occurred during each month of the quarter. The report is then organized in terms of technical domains—Digital Content Development, Dissemination and Capacity Building as well as Project Administration—and further details on both accomplishments and challenges are shared in those sections. Next, the report contains a section on Results Reporting. In addition to reporting on expected results named in the proposal, we also report on output indicators in this section as well. At the end of this section, we have included the project workplan, with the activities that have been completed in this past quarter highlighted in blue, the activities completed in past quarters highlighted in green and the activities still to be completed marked with an X but no color fill (See Appendix A). Finally, there are several appendices attached to the report to provide further detail on the quarter's activities and results.

April:

The month of April was devoted largely to two sets of activities; 1) monitoring and evaluation and 2) planning the project summit in Ta'iz, generously funded by the Haile Saeed Anam Group. The monitoring and evaluation activities revolved largely around data management, test correction and data entry (of student pre-test data) and planning for the student post test slated for the following month. EDC's sample from the Sana'a schools (both project schools and control schools) was approximately 1100 students. Each of the 1100 students took four tests (math, physics, chemistry and biology). Thus, there were approximately 4400 test papers to correct and enter into an Excel spreadsheet for subsequent transfer to SPSS and data analysis. EDC engaged classroom teachers to correct the tests, according to an answer key, and then the EDC training and logistics manager and the administrative assistant entered the student scores, by test subject, student name, and school into Excel.

Additionally, preparation was underway for the project summit, May 10th in Ta'iz. EDC's project field director was very busy interacting between the Ministry of Education and the

Haile Saeed Anam Group to agree up an invitation list, an agenda, the venue, etc. Teachers from Sana'a were asked to prepare presentations on various aspects of the project in their schools and EDC took the opportunity of the summit to produce a video on the project, drawing on the multitude of video data collected on the project over the course of the semester. EDC's home office developed a script for the video and drafted the initial agenda for the event.

May:

Like April, May was also devoted to monitoring and evaluation as well as the actual realization of the summit. Regarding the latter, the INTALEQ project held a summit in Ta'iz, under the generous sponsorship of the Haile Saeed Anam group. The purpose of the



The main speakers at the Ta'iz summit

summit was to share and examine the experience of INTALEQ's phase 1, which took place in six secondary schools in Sana'a. Indeed, the summit was an opportunity to highlight INTALEQ's progress throughout the spring semester, in order to prepare for its expansion to Ta'iz, Mukalla and Aden in the fall. The summit brought together almost all of the INTALEQ partners and was

presided over by the Minister of Education.

Partners in attendance included Al Awn, USAID, EDC, the Ministry of Education and HSA as the host. Intel sent a video greeting to the group and Curriki also sent regards via EDC's Dr. Robert Spielvogel. See Appendix B for a copy of the Summit Agenda, and Appendix C for a copy of the address delivered by Mr. Shawki Ahmed Hayel.

After the summit, the INTALEQ Advisory Committee held its first meeting in Taiz, which was presided over by Mr. Jamil Al Khalidi, Deputy Minister for Curriculum and Supervision. Committee members in attendance included: Ridha Alkazdaghli of the HSA Group; Adel Bahameed of the Al Awn Foundation; Susan Ayari and Abdulhamid Al Ajami from USAID/Yemen and Dave Besch from USAID/Cairo's Regional Alliances Office, Ali Al Haimi, and Khaled Al-Jabari, Jamal Jaylani from the Yemen MOE and Helen Boyle, Towfick Sufian, Ameen Al Kaderi and Abdenour Boukamhi from EDC.

Mr. Al Haimi, leader of the localization team at the MOE gave a chronological update of the project activities from inception through the summit meeting on May 10th and Helen Boyle gave an update on the student pre- and post-testing, mentioning that the post-testing would be completed by mid-May. Each funding partner then spoke. In general, partners expressed satisfaction with the project, but made suggestions to improve project management and communication between partners and offered valuable ideas on whether

and how to attract more support for the project, including parents, community members and other companies. (See Appendix D for a copy of the meeting minutes.) The next advisory committee meeting was set for August 5th in Sana'a.

Following this meeting, the two implementing partners, EDC and the MOE had a productive working meeting in Sana'a to discuss modalities of operation going forward. The meeting clarified communication protocols and allowed the team to plan as a group for the upcoming months.

The rest of the month of May was devoted to carrying out the student post test in the pilot schools in Sana'a, correcting those test papers and entering those data into Excel. This task spilled over into June. Likewise in May, the training and logistics manager collected secondary data in the form of student scores on monthly classroom tests in the target subject areas over the whole 2008 -2009 school year.

June:

In June the final test corrections and data entry for the student post tests were completed in the four subject areas. Data were then sent to EDC in Washington where they were uploaded into SPSS. EDC conducted the statistical analysis on the data and produced a report on the results by early July, which was augmented with background information on the sampling, test development and test administration procedures and distributed to partners in mid-July. However, the bulk of the data analysis was done in June. The project's training and logistics manager began to collect secondary data from teachers (lesson plans, student monthly test grades, student attendance data). EDC had planned to conduct a series of teacher "end of semester" interviews but teachers were so busy with exams that the interviews had to be postponed to the next quarter.

Also in June, the MOE digital materials adaptation team began work on the 1st semester digital learning object localization.

II. Progress and Challenges in Programmatic Domains

A. Digital Content Development

The third quarter was quiet in the area of digital content development, as work on the first semester 10th grade learning objects did not begin until June.

1. Accomplishments

Work on adapting content for the first semester of 10th grade math, physics, chemistry and biology began in June. It was agreed between EDC, Intel and the MOE that the MOE would

endeavor to select items (largely from the Egyptian digital content) that would not need extensive adaptation for use in Yemen, both for time and budgetary reasons. The 1st semester digital learning objects will be ready to use in the teacher trainings, which are planned for the second and third weeks of August. We expect the process will be less labor intensive this time around as both the localization team, EDC and Intel know better the process and what is required to smoothly localize the learning objects.

2. Challenges

The digital materials localization team put in a lot of work during the first two quarters of the project, in order to have the 2nd semester 10th grade materials ready to use in February of 2009. As we began the process of looking at the 1st semester materials, the localization team wanted to discuss the option of greater compensation for their work as it involved much overtime beyond their normal duties. This issue was raised in the meeting between the implementing partners in May and the MOE and EDC agreed to look at the issue and consider ideas to provide the digital materials localization team with more incentives. While getting a late start on the 1st semester materials due to these discussions, the localization team did pick up the work again in June.

In addition, Intel also expended the majority of its budget on the second semester localization and adaptation process. For this reason, and because the MOE team did not begin the localization until June, all parties agreed to select items that were not in need of extensive changes. The localization team felt that there were many objects in the Egypt skool.com collection that would work very well for math and science instruction in the 1st semester of 10th grade, with minimal changes.

B. Dissemination Systems

The 3rd quarter has focused largely on getting the open source platform translated into Arabic so it will be ready for the teacher trainings in August.

1. Accomplishments

Given the difficulties that Curriki ran into with the translation of their platform (discussed below and in the last Quarterly Report), the major accomplishments of this quarter, is the development of the project's dissemination system, using Drupal software and a simplified, more streamlined model of Curriki for the teachers to use. The system was developed and translated in the 3rd quarter and will be checked over and tested in July to make sure it is ready to launch in August. It will be introduced to all INTALEQ project teachers, as well as principals and supervisors; in the August teacher training and they will be shown how to use it.

Until the Curriki platform is ready, the Drupal platform will provide all of the options of Curriki including a place for teachers to share lesson plans, a system for the MOE to review those plans and a space for teacher journaling and reflection, all online.

While in Yemen in May, EDC presented the issues with Curriki to the advisory committee in Ta'iz and to the MOE technology department. The MOE technology experts were briefed on how the Drupal system would work and were onboard with its use. Once up and running, EDC will provide a through orientation to central MOE technology department members so that they can train teachers and supervisors on its use, beyond those in or connected to the project schools.

2. Challenges

The major challenge of the quarter was the ongoing difficulty Curriki faced in translating its platform into Arabic.

C. Capacity Building

There were no formal capacity building activities scheduled for this quarter.

1. Accomplishments

Informally, capacity building was ongoing with the MOE in terms of the back and forth and consultations regarding the construction of the Drupal platform, teacher follow up and the localization of the next set of learning objects.

EDC and MOE staff paid visits to the school in Sana'a using the digital learning objects to conduct observations and provide support to teachers as needed, as well as to troubleshoot any problems that arose. EDC's training and logistics manager helped teachers to use the flip cameras the project provided to allow them to capture video of students and classroom activities in order to reflect on their lessons, document what they were doing and capture success to share with others.

Another accomplishment in the area of capacity building relates to the presentations that each of the six schools prepared for the Ta'iz summit. Teachers, with minimal training from the project in the use of Flip cameras and MS PowerPoint put together impressive presentations involving video and audio, graphics and animation. The presentations not only document the progress teachers have made in using multiple media and presentation formats, but they also demonstrated that teachers understood the goals and concept of active, student centered learning and were able to put it into practice in their classrooms.

2. Challenges

It was a challenge to get teachers from the six schools in Sana'a (mostly female) to travel to Ta'iz for the summit meeting. Each school had prepared a presentation of under 10 minutes to share with the principals and supervisors, as well as dignitaries from the MOE and other governorates. Unfortunately, only three teams were able to present as the agenda at the summit was very full. The teachers who were not able to present on behalf of their school were very disappointed, but the Minister of Education promised to visit each of the schools that did not have a chance to present at the summit in the coming weeks and see their presentation at the school itself.

INTALEQ staff did pay visits to all of the schools to meet and talk with teachers and express regret about the scheduling issue to those who were not able to present. On a positive note, however, the project did run a dress rehearsal the night before the summit meeting so the project staff, some MOE staff and the teachers themselves did have the chance to see all six of the presentations.

D. Project Administration

The Ta'iz summit concerned the project as a whole and was organized to begin the project's expansion into Ta'iz, Mukalla and Aden by sharing the Sana'a experience. Hence, we are reporting on it under project administration, rather than try to fit it exclusively into one of the technical areas above. Other areas under project administration that we are reporting on include the advisory committee meeting held in Ta'iz, a meeting that the implementing partners had in Sana'a after the advisory meeting and USAID's meeting with the localization team.

1. Accomplishments

On May 10th, 2009, the INTALEQ project held a summit in Ta'iz with support from the Haile Saeed Anam group.

The opening ceremony was graced by the presence and encouraging words of many prominent Yemeni educators, government officials, private sector partners, as well as principals and teachers from the participating schools. Mr. Shawki Ahmed Hayel, Deputy General Manager of the Haile Saeed Anam Group, explained HAS's support for the project by saying: "We believe that INTALEQ program will improve the capacities of the teachers and administrators to promote greater student learning including the acquisition of 21st century skills". Likewise, Dr. Adel Bahameed, Executive Director of the Al Awn Foundation, another key project partner, shared insights on educational development work gained from the stellar work the



Mr. Shawki Ahmed Hayel speaking at the INTALEQ Summit in Ta'iz.



Dr. Adel Bahameed addressing the participants on behalf of the Al-Awn Foundation.

Foundation does in Yemen and voiced his hope for the INTALEQ project. Ms. Susan Ayari of USAID spoke about USAID's work in helping to create the INTALEQ partnership, thanked all of the partners and reaffirmed USAID's commitment to support the improvement of education in Yemen. Partners from Intel sent a video address saying how pleased the organization is to be involved in the project and Curriki sent greetings to the assembly as well. The Governor of Ta'iz H.E. Hamoud Khaled Alsoufi said in his remarks that he was pleased the project would be working in Ta'iz and finally H.E. Dr. Abdulsalem Al Joufi, Minister of Education, spoke of the importance of public private partnerships like INTALEQ to improving education. In addition to the featured speakers, many prominent educators and government officials attend the summit. In attendance at the meeting were H.E. Dr. Abdullah Hamidi, Vice Minister of Education, Mr. Jamil Al Khalidi, Deputy Minister of Education for Curriculum and Supervision, Mr. Ali Al Haimi, director of the Educational Technology Section within the Ministry as well as representatives from the Curriculum Department, the Educational Technology Department and the Education Research and Development Center. In addition, nine school principals from the schools that will join the INTALEQ project in August and the Directors General from Sana'a, Ta'iz, Mukalla and Aden were in attendance, the latter three to gain a better sense of the project itself and hear about the experiences of the schools in Sana'a that implemented the project already. (See Appendix E for a copy of the list of invitees; those who attended have a check mark by their name.)



Ta'iz Summit Attendees

Highlights of the summit included the school presentations, which illustrated the teachers' accomplishments quite impressively. Likewise the video created to explain and document the project was very well received. Overall, principals and supervisors, as well as DGs from the three expansion sites (Ta'iz, Mukalla and Aden) left with a better sense of what the project is about and what to expect as they prepare to implement the project beginning in August 2009.

2. Challenges

Logistical challenges are always present in organizing and running large events, with many high level officials in attendance. The opening was delayed a bit in waiting for important guests. An unexpected coffee break after the opening ceremony necessitated some "on the

spot” adaptation to the summit agenda. More people from the MOE arrived than the sponsor or EDC had expected. The teachers coming from Sana’a did not like the hotel that had been selected for them, necessitating a change of venue after the first night.

Finally, and most unfortunately, the Al Awn Foundation’s logo was left off the conference banner. The logo was present in the electronic version of the banner but somehow did not come out on the printed version. EDC gave Al Awn a letter of apology in response to this very regrettable turn of events.

III. Results Reporting

This section of the report will deal with updating our reporting on achievement of project results. The organization of this section of the report focuses on the major deliverables.

A. Student Assessment

Student assessment was conducted in the six project schools in Sana’a, in addition to three control schools. We used a pre-test, post-test model to look at whether students who use the INALEQ digital materials and whose teachers have been trained in how to integrate them into lessons, show increased learning gains over their counterparts who do not use the materials.

Expected Result: Improved student achievement in 10th grade math and science in INTALEQ schools

Target: 60% of students in 10th grade will have improved their scores in math and science after participating in the program.

Results achieved to date:

Student assessment results for students in the Sana’a schools were impressive. On average students in the project schools received scores of almost nine points higher on the post tests than students in the control schools. Gains in all subjects for the project schools were statistically significant and have a confidence level of 95%. Hence, the project did have a positive and substantial impact on students’ learning in the target subjects. See Appendix F for the full report on the student assessment.

In addition to the pre and post-test model, the project is also looking at students’ scores on the tests that are given to them monthly in each of the subject areas by their teachers. We have collected students’ scores from the teachers for the period from September – May to examine whether, in addition to achieving significant gains on the INTALEQ project tests, the students scored better on their regular tests. These data were collected in June and will be entered and analyzed in July/early August. We will also be able to look at what percentage of students in each class and each school who did better (or not) on the

monthly tests after the introduction of the project. Anecdotal evidence from teachers suggests the percentage will exceed the 60% target.

B. Teacher Performance

Regular classroom observation, computer lab usage logs, teacher lesson plans and teacher interviews will assist us to determine the extent to which teachers regularly use the materials in their 10th grade classes and give us information on how well or how effectively the teachers use the materials with their students. Repeated observations will also allow us to monitor teacher improvement over time in terms of effectively using the materials.

Result: Grade 10 math and science teachers in INTALEQ schools employ additional digital materials and active, inquiry-based methods for teaching and assessment in their classrooms.

Target: 70% of teachers regularly use digital learning support materials in the classroom with their students

Results achieved to date:

Data indicate that almost all target teachers in the INTALEQ schools have used the digital learning objects. We are defining regularly as 3 times per month minimum per subject. This would mean that a teacher took his or her class to the computer laboratory once a week for three weeks out of a month. The digital learning objects are meant to be used as part of a larger lesson that the teacher is preparing and giving on the topic of the day or week. They are not “stand alone”, hence, if a teacher gets his or her class into the lab once a week for three weeks out of a month, that seems feasible. As all science and math teachers are using the digital learning objects with their 10th graders in the project schools, a student would get to the lab 4 times a week (once per subject) for three weeks out of a month.

Teachers’ lesson plans were collected in June and will be tallied in July to see whether the project reached the 70% mark targeted above. Initial analysis from the teachers’ lesson plans and journals, all indicated that all the INTALEQ teachers have been using the learning station technique very often, and each time they used this technique they would set up the digital learning objects as one of the lesson stations. Generally, they used did this at least once a week once a week on average. Initial examination of the data suggests that the math and biology teachers have been using the LOs at least twice a week, while the physics teachers have been using them once a week for physics and the chemistry teachers have met the “three times a month” threshold. There were 29 10th grade math and science teachers across the 6 project schools in Sana’a; 9 were math teachers and 20 teach science. Data were collected from 23 out of 29 teachers. Three teachers from Omer Abdulaziz

School and three from Hadroum Girls' school did not submit their materials by the end of June and the project is following up with them. So, 100% of the teachers for whom we have data are using the learning objects regularly in their lessons. Even if none of the six teachers whose data are missing were using the learning objects, the project would still exceed the target of 70% (achieving a usage rate of 74% in Sana'a) of teachers using the learning objects regularly. We expect this will be higher as anecdotal evidence again suggests that the six teachers who did not submit data are indeed using the learning objects. The next quarterly report will have a final percentage for the Sana'a teachers as the teacher data will all have been tabulated and analyzed by then.

In addition, observations and interviews (not yet completed) suggest that teachers were using the active learning methods in the classes they taught that were not in the computer lab (i.e. where the students were not necessarily using the digital learning objects). Again, this will be more fully reported on in the next Quarterly Report when the data analyses are completed for the teacher results.

C. Digital Library of Materials

This result area focuses on documenting the finalization of the localized Intel materials but is also broader to encompass the inclusion of other materials that the MOE might locate and establish links to or that teachers might create themselves to share online.

Result: The Yemeni MOE has made a solid start on compiling a library of authentically Yemeni digital materials, keyed to the Yemeni curriculum, which can be used by teachers and students.

Target: 10 Physics, 10 Math, 10 Chemistry and 20 Biology Learning Objects from the Intel skool.com sites are fully adapted to the Yemeni context for use in 10th grade classrooms.

Results achieved to date:

Teachers and administrators working on the project are able to access the online components directly off the Ministry of Education's web pages. A new link will be added so that project participants can go directly to the INTALEQ portal and be directed to the Yemen Skool site with the digital learning objects selected and localized by the curriculum experts in the MOE and eventually the Curriki/Drupal Yemen site which will allow teachers an online place to write their project journals and share lesson plans that use the digital objects found in the Yemen Skool collection. These components will form a permanent resource and dynamic tool set that will continue to be used by teachers and school leaders long after the INTALEQ project is completed. While the INTALEQ portal will be open to any educator or interested visitor and the digital learning objects and lessons are available for use, only project participants will be able to post journal entries and add lesson plans to the collection. To date, more than 10 digital

learning objects per subject (and more than 20 in biology) have been adapted for Yemen and are in use by teachers. In July and August approximately 40 additional objects will be added to the collection, for use in the 1st semester of 10th grade. Likewise, as the Drupal open source portal goes up, teachers will be able to post lesson plans to share and the MOE will be able to provide a page of preferred links to other sites housing materials it deems useful for teachers.

D. Ministry of Education Portal

This result will document the creation of the MOE portal and will essentially allow us to determine the level of access and ease of access available to teachers and others in utilizing digital content.

Result: Fully functional portal tailored to Yemeni context and containing basic digital materials and/or links that teachers and students can use.

Target: Yemeni MOE portal up and running and used by teachers and students by June of 2009

Results achieved to date:

- E.** The Moe website has functioning links to the Yemen skool.com site and the digital learning objects, In August it will have links to the Drupal site as well. **Future Partner Recruitment**

We have included this result area as one goal of the partners is to be able to extend the project to other grades and other governorates. In order to be able to do this, it is highly likely that the project will need to expand its funding base by attracting additional private sector contributors.

Result: Additional partners join the INTALEQ project and provide funding to expand the project's work to other grades and other governorates.

Target: Two additional partners by the end of the first year of the project.

Result achieved to date:

At the Ta'iz Summit the minister announced that some other companies, such as CAC Bank and Yemen Mobile had expressed some initial interest in joining the INTALEQ partnership. Project staff and the MOE will follow up on these possibilities. In addition, the Sana'a DG, Mr. Mohammed Al-Fadli highlighted the impact that the INTALEQ Pilot had in the Sana'a schools, and how it positively contributes to the improvement of education quality. Inspired by the project's results, the DG and his staff developed a plan to expand INTALEQ activities to other schools in Sana'a. The plan was handed over to the Mayor of Sana'a who

immediately authorized the purchase 4000 PCs to be distributed to additional schools in Sana'a where INTALEQ can be implemented. This is a first step in positioning the schools to be able to use the digital learning objects created by Intel and adapted by the MOE to the Yemeni context. The next step will be to secure support for the teacher training to ensure that the objects are used effectively with students to bring about real learning gains.

IV. Progress Against Project Workplan

Activities completed are highlighted in green; those completed in the last quarter are highlighted in light blue. Activities marked with an X and no highlighting are scheduled to be completed in the months ahead.

For the most part the project has stayed on track. There have been some delays and the delayed activities are highlighted in orange. The delays mainly related to the training of instructional leaders and the training of MOE supervisors to undertake the project's M&E activities. Principals and supervisors have received some training in instructional leadership in a break out session during the teacher training, in which they participated. However, we decided to wait until the fall semester, when the project is operating in all four governorates to do a more formal training for instructional leaders. Likewise, the training for the MOE supervisors will occur in the fall such that they can take over some of the data collection/M&E functions of the project.

Appendix A

Project Work Plan

INTALEQ PROJECT REVISED WORKPLAN

Legend: Clear background with X = scheduled; Green background = task completed in previous quarter; Blue background = task completed in 3rd quarter; orange background means task was delayed.

			2008		2009												2010
Revised INTALEQ Implementation Plan	Responsibility	Financial coverage	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan
Project start-up			X														
OBJECTIVE 1: DIGITAL MATERIALS ADAPTATION/LOCALIZATION																	
Project Launch event with MOE, US AID , Partners, others, press	MOE approves invitees and invitation; EDC conducts event	EDC pays for event; MOE hosts it	X														
Select 4 Yemeni MOE counterparts from the technology department in the MOE to localize skool content;	MOE	MOE to assign them for an estimated 10 to 15 days over the project period each semester to do this localization for both semesters	X														
Select 4 Yemeni MOE counterparts from the curriculum department and 4 from the ERDC in the MOE to localize skool content;	MOE	MOE to assign them for an estimated 10 to 15 days over the project period to do this localization for both semesters		X													
Orient 4 counterparts to INTEL's skool.com site and to its existing Arabic language digitized content and train in the localization process; (completed at workshop in Cairo).	EDC and MOE	EDC covers 1 trainer, translation costs, transportation, per diem; MOE covers normal salaries of employees; Intel provides main trainers/workshop facilitator	X														
Survey Yemeni curricula in science and mathematics for secondary grades and identify priority areas (i.e. hard to teach areas, critical concepts, etc.) for project support, in the form of digitized materials and teaching resources; (Cairo workshop)	MOE	As above; EDC will cover retreats or meetings in Yemen to continue the work begun in Cairo	X														
Identify and catalogue existing INTEL Arabic language materials for 10 th grade math and science for localization to Yemeni context;	MOE	As above; EDC will cover localization retreats or meetings in Yemen to continue the work begun in Cairo	X	X													
Train remaining counterparts in Localization	EDC and MOE	EDC covers workshop facilitator, transportation, per diem; MOE covers normal salaries of employees		X													
Localize skool resources according to priority areas from curriculum;	MOE	MOE--salaries; EDC--workshops--the Cairo workshop and "retreats" in Yemen (December 2008--2nd semester materials; summer 2009 --1st semester	X	X	X	X				X	X	X					
Develop and implement a school selection process with clear criteria; send 1 EDC and 1 MOE person plus DG and local partner representative team to the directorates to examine schools; then use a team to select the 20 schools	MOE	EDC covers minimal travel costs for a subset of the selection team out to review potential schools.		X		X											
Develop school agreement form that details what is expected from each school that participates in the the project.	EDC and MOE	No funding required		X													
Name the project coordinator/school liaison at MOE to keep schools informed, sign agreement with school head covering what the schools will be responsible for, and keep schools on track with using the materials	MOE	No funding required			X												
Identify a tech support person and project liaison at each school	EDC and MOE	No funding required				X							X				

Revised INTALEQ Implementation Plan	Responsibility	Financial coverage	2008		2009												2010
			Nov	Dec	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan
OBJECTIVE 2: MATERIALS DISSEMINATION SYSTEM																	
With counterparts from MOE design/adapt portal architecture	EDC presents options to MOE and they select architecture; EDC confirms with other partners	EDC to cover development of design options	X														
Build portal	EDC to create home pages for INTALEQ project; MOE to mount it on existing site	EDC covers development costs for pages and translation; MOE to mount on its site		X	X												
Send content to Intel as it becomes available to mount on the Yemen skool.com website (via email)	MOE	No funding required		X	X	X					X	X	X				
Second semester materials for math, physics, chemistry and biology on-line and ready for use	Intel and MOE	Intel				X											
Test portal accessibility in project schools in Sana'a	EDC and school participants	EDC pays internet costs for schools until school or MOE takes over				X	X	X	X								
Translate Curriki platform (or Drupal platform) and customize for Yemen									X	X	X						
Curriki , or Drupal option, added to portal	Curriki	Curriki											X				
Portal available to all INTALEQ schools in Sana'a, Ta'iz, Aden and Mukalla and in use by these schools	MOE	EDC pays internet costs for schools until school or MOE takes over												X	X	X	X
Open up portal to public/press event with partners at a local school.(Do it for the entire project in Sanaa and then encourage the other directorates to do a similar event locally. Implement in October, after Ramadan,when schools are fully in session.)	MOE with EDC	EDC but MOE hosts it													X		

Revised INTALEQ Implementation Plan	Responsibility	Financial coverage	2008		2009												2010
			Nov	Dec	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan
OBJECTIVE 3 ACTIVITIES: CAPACITY BUILDING																	
Refine/revise (as needed) IYHS and ILSI teacher and administrator/supervisor training materials; Post to Curriki	EDC	EDC		X	X												
Develop computer skills survey and administer to participating teachers in all project schools. (Mukalla will be done later than the rest because the survey instrument needs to be enhanced because the Mukalla teachers have had more previous training in using ICTs than the teachers in the other sites.	EDC with approval of MOE	EDC				X						X					
Train INTALEQ trainers (MOE localization team, supervisors, Curriculum Dept. people, Univ. master teachers from IYHS, etc.) in using the Portal, skool content, along with a strong foundation in active learning and learner centered lesson planning	EDC	EDC			X												
Train math and science teachers at each participating school in the Sana'a governate using the Portal, skool content, along with a strong foundation in active learning and learner centered lesson planning	EDC and MOE	EDC				X											
Train supervisors on instructional leadership to support teachers, including designing activities they can lead for in-service training in the LRC.	EDC and MOE	EDC				X									X		
Followup Training for Sana'a teachers - at least two-day workshop to review lessons learned, introduce curriki, and introduce the additional learning objects now available for first semester use	EDC and MOE	EDC										X					
Train trainers on Curriki	Curriki	Curriki										X					
Train teachers from Mukalla, Aden and Ta'iz on Curriki	Curriki	Curriki										X					
Revise Training Materials for Active Learning/Using Learning Objects training based on Sana'a experience	EDC and MOE	EDC										X					
Train math and science teachers at each participating school in Mukalla, Aden and Ta'iz on using the Portal, skool content, along with a strong foundation in active learning and learner centered lesson planning	MOE and EDC	EDC										X					
Post final version of training materials on Curriki	MOE	No funding required														X	
Train MOE inspectors to collect data on teacher practice and to administer student assessment and use Flip cameras for teacher and student observations	EDC	EDC				X								X			
Hold 3 hour meeting for supervisors to review their classrooms visits, data collection, discuss issues and plan for the next school year/semester; Sana'a supervisors in September and Mukalla, Ta'iz and Aden supervisors in January.	EDC and MOE	EDC											X				X
Hold 3 hour meeting for principals to discuss issues and plan for the next school year/semester; Sana'a principals in September and other governorates' principals in January	EDC and MOE	EDC											X				X

Revised INTALEQ Implementation Plan	Responsibility	Financial coverage	2008		2009												2010
			Nov	Dec	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan
MONITORING, EVALUATION AND REPORTING																	
Advisory Board Meetings	EDC and MOE	EDC								X			X			X	X
Additional partner recruitment	EDC and MOE	No funding required											X	X	X	X	X
Quarterly Reports submitted; reports are due 30 days after close of quarter; quarters are October - December; January - March; April - June; and, July - September.	EDC with MOE	EDC			X			X				X			X		X
Report on student assessment results from pilot in Sana'a due in June; report on student assessment results from the four governorates due in January.	EDC with MOE	EDC									X	X					X
Develop test based on Learning Objects for second semester content *	EDC and MOE	EDC					X										
Develop test based on Learning Objects for first semester content *	EDC and MOE	EDC										X					
Develop Teacher journal to record their lessons and use of the Learning Objects	EDC and MOE	EDC				X											
Develop observation instrument for supervisors to use	EDC and MOE	EDC				X											
Develop teacher survey for collecting their evaluation at end of semester	EDC and MOE	EDC							X		X						
Adminster second semester test as pre test in Sana'a project and control schools	EDC and MOE	EDC					X										
Correct student tests and enter exam data into Excel						X	X	X	X								
Conduct Data Analysis										X							
Collect and analyze observational data on teachers in classrooms and student assessment data	EDC and MOE	EDC			X	X	X	X	X				X	X	X	X	
Adminster teacher evaluation surveys	EDC and MOE	EDC							X		X						X
Collect and analyze teacher journals	EDC	EDC							X	X							X
Collect supervisor reports	EDC	EDC							X	X							X

				2008		2009												2010
Revised INTALEQ Implementation Plan	Responsibility	Financial coverage	Nov	Dec	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	
MONITORING, EVALUATION AND REPORTING																		
Administer second semester test as a post-test in Sana'a proejct and control schools	EDC and MOE	EDC							X					X				
Adminster First semester test as pretest in all participating and control schools	EDC and MOE	EDC											X					
Adminster first semester test as post-test in all participating and control schools	EDC and MOE	EDC															X	
<p>* Note on student tests - test results will be analyzed using a gain score analysis. There is no need to develop separate forms of the test for pre and post use as both program and control students will have the same test-retest bias.</p>																		

Appendix B

Ta'iz Summit Agenda

TA'IZ SUMMIT MAY 10th, 2009



Ta'iz Summit Agenda

Item	Presenters	Description	Time
Registration			8:30-9:00
Opening ceremony		Recitation from Holy Quran	9:00-9:05
Welcome Message	Shawki (HSA)		9:05-9:20
	Al—Khaldi		9:20-9:30
	Susan Ayari		9:30-9:40
	Adel Bahameed (Al-Awn Foundation)		9:40-10:00
	Helen Boyle (EDC)		10:00-10:10
	Minister		10:10-10:30
INTALEQ Video	INTALEQ Project	Show the project's progress in Sana'a 's schools	10:30-11:00
BREAK			11:00-11:30
Presentation	Ali Al-haimi &his team	Demonstrate progress in Yeminizing the Skool program and in developing contents for the MOE site and portals	11:30-12:00
2 School Presentations	Azahra'a and Omar Bnou abdel-Aziz	Show Intaleq impact in the classrooms and indicate some of the obstacles	12:00-12:30
Presentation	Mohamed Al-Fadli	Focus on the importance of INTALEQ in improving the quality of education and call for more funding to cover more schools	12:30-12-45
2 schools presentations	Al-Khanssa'a and Sab-aeen	Show Intaleq impact in the classrooms and indicate some of the obstacles	12:45-1:15

TA'IZ SUMMIT MAY 10th, 2009

Presentation	Bob Spielvogel	Show progress in the development of the INTLAEQ portal	1:15-1:30
2 schools Presentations	Senan Hatroum and Al-Qods	Show Intaleq impact in the classrooms and indicate some of the obstacles	1:30-2:00
Open discussion and Q&A	Next Steps/Partners Remarks		2:00-3:00

Appendix C

Mr. Shawki Ahmed Hayel Speech

Ladies and Gentlemen
Honorable Guests
All Attendants

It is my great pleasure to be here today to participate in the first consultancy meeting on "INTALEQ" Project under the supervision of Dr. Abdulsalam Mohammed Al-Jawfi, the Yemeni Minister of Education and with the cooperation of the Education Development Center, United States Agency for International Development, Intel Corporation, Curriki and Al-Awn Foundation for development. We are really appreciating all the efforts exerted to hold such distinctive meeting which represents a true public private partnership to improve and promote the Education quality in Taiz schools through the acquisition of modern technological methods and skills in the field of Education.

It is universally acknowledged that education is the easiest and best way to achieve sustainable development, progressiveness, and prosperity in any society. And, Hayel Saeed Anam Group, Being the leading national conglomerate in Yemen, has adopted the concept of Corporate Social Responsibility in various fields, among them is the field of Education.

Our commitment toward the Yemeni society in the field of education is quite clear through our direct participation in the establishment of the private service - educational institutions like " Al-Saeed Foundation for Sciences and Culture " , " Al-Saeed Institute for Engineering and Technical Sciences " , "The College of Islamic and Applied Sciences" and others . We also participate in sponsoring many scientific programs and activities of schools , universities and other scientific institutions within the framework of our corporate social responsibility towards society . In addition to that , we annually grant several scholarships to Yemeni students to continue their high studies locally and abroad through Hayel Saeed Anam Welfare Foundation.

Really, We are very proud to be a part of this qualitative initiative which aims at developing digital content materials that facilitate improved learning of concepts and skills and that are based on the Yemeni curriculum for 10th grade math and science. We believe that "INTALEQ" program will improve the capacities of the teachers and administrators to promote greater student learning including the acquisition of 21st century skills.

At the end , Thank you all for your attendance which we appreciate and consider as an evidence of the significance of this meeting and we wish all ever-lasting success and happiness .

May peace, mercy and blessings of Allah be upon you

Appendix D

Advisory Committee Meeting Minutes



اجتماع اللجنة الاستشارية لمشروع أنطلق

2009 /5/10

فندق السعيد ،

تعز

الحاضرون:

الاسم	الجهة
جميل على الخالدي	وزارة التربية والتعليم
علي حسن الحيمي	وزارة التربية والتعليم
خالد الجباري	وزارة التربية والتعليم
جمال غيلان	وزارة التربية والتعليم
رضى الكزدغلي	مجموعة هابل سعيد انعم
عادل باحميد	مؤسسة العون للتنمية
سوزان أيارى	الوكالة الامريكية للتنمية الدولية اليمن
عبد الحميد العجمي	الوكالة الامريكية للتنمية الدولية اليمن
ديفد بشش	الوكالة الامريكية للتنمية الدولية القاهرة
هيلن بويل	EDC
توفيق سفيان	EDC
امين القادري	EDC
عبد النور اليوقمحي	EDC

بدأ الاجتماع بالتعارف حيث قام كل واحد من المجتمعين بالتعريف بنفسه/ نفسها.
رأس الاجتماع السيد جميل الخالدي الذي رحب بالحاضرين مقدارا دعمهم لمشروع انطلق.

اطلاع المجتمعين على التقدم الذي شهده مشروع انطلق:

قدم السيد على الحيمي قائد فريق اليمنة بوزارة التربية والتعليم تقريرا اطلع الحاضرين من خلاله على أنشطة المشروع منذ التدشين وحتى اللقاء التشاري في العاشر من مايو

و أشارت الدكتورة هيلن بويل من EDC إلى إن المواد التدريبية لمشروع انطلق متوفرة للشركاء وبإمكانهم الحصول عليها اذا رغبوا في الحصول على معلومات أكثر حول الأنشطة التدريبية، أيضا اطلعت المجتمعين على آخر التطورات في الاختبار القبلي و البعدي حيث ذكرت ان الاختبار البعدي سينجز في الأسبوع القادم.

مداخلات الشركاء واقتراحاتهم

بعد الانتهاء من تقارير الجهات المعنية بتنفيذ المشروع، أعطى السيد جميل الخالدي للمانحين الكلمة و على رأسهم مؤسسة العون للتنمية. بحيث تطرق عادل بحميد للنقاط التالية:

- نحتاج كلنا إلى أن نكون مهنيين – أرسلت العون رسالة إلى وزارة التربية والتعليم في أكتوبر من العام 2008 بخصوص تجهيز معامل الحاسوب في بعض المدارس كجزء من مساهمة العون العينية في المشروع ، ولم يصله الرد الا في 10 مايو 2009. كما أشار السيد بحميد الى أنه كان يتوجب أن تتسلم اللجنة الاستشارية برنامج الاجتماع و التقرير الفصلي قبل الاجتماع و ليس عند بدايته.



- التقرير الفصلي يجب ان يحتوي على جدول بياني او خارطة يوضح ما تم التخطيط له وما تم انجازه.
 - الشركاء الممولين بحاجة إلى وضوح أكثر حول تحديد المهام في تنفيذ المشروع، حيث أشار السيد/ با حميد أنه لا يعرف من هو الشخص المخول للتواصل معه من قبل الممولين، وأضاف أن هناك قصور وعدم وضوح حول الشخص المطلوب التواصل معه في الوزارة. وطلب توصيف لمهام كل شخص في المشروع
 - موضوع صيانة الحواسيب هي قضية يجب على الوزارة أن تأخذها بعين الاعتبار، بهذا الخصوص أشار السيد/ باحميد إلى ان الحواسيب التي زودت بها المدارس من قبل الصندوق الاجتماعي وآخرون في المكلا أتلقت ولا احد هناك يتكفل بصيانتها، وهذا يعتبر استثمار ليس له جدوى، و أعلن عن استعداد العون لتدريب بعض كوادر الوزارة على الصيانة في حال ان الوزارة عينتهم كفننين صيانة
 - كانت هناك بعض الثغرات في الترجمة تخللت الفيلم الوثائقي لبرنامج انطلق الذي تم عرضه في المؤتمر
 - تم نسيان وضع شعار مؤسسة العون على لافتة المؤتمر و كان ذلك أمرا مؤسفا.
- وافق الشركاء على هذه الملاحظات والاقتراحات وسيتم اتخاذ التدابير اللازمة للنظر في كل القضايا المطروحة. أكد الأستاذ جميل الخالدي على أن الوزارة ستكون متجاوبة واتفق مع هبلن بويل وضع دليل يضم معلومات حول الجهة التي يجب الاتصال بها و ذلك لمساعدة الشركاء الممولين على تقصي المعلومات و لتحسين التواصل فيما بين جميع الشركاء. كما أن EDC سوف تنتظر في أخطاء الترجمة في الفيلم الوثائقي و تحاول معالجتها. كما تقدمت السيدة بويل برسالة اعتذار رسمية للسيد بحميد فيما يخص عدم وضع شعار المؤسسة غير المقصود على لافتة المؤتمر. كما اطلع كل من السيد الخالدي و السيدة بول الحضور على أنهم اجتمعوا قبل اجتماع اللجنة و اتفقا على الاجتماع يوم الثلاثاء 12 مايو بصنعاء و ذلك لمتابعة النقاش حول أدوار ومسؤوليات كل جهة وقضية التواصل و سوف يتم اضطلاع باقي الشركاء بالنتائج.
- و اعطيت بعد ذلك الكلمة للسيد رضى الكزدغلي عن مجموعة هائل سعيد انعم و قد تقدم بالملاحظات و التوصيات التالية:
- طلب من المهنفذين التواصل مع مجموعة هائل سعيد انعم للحصول على مزيد من الإيضاح حول الشعار الذي يفضلون استخدامه من قبل مشروع انطلق في أدبيات الاتصال والتواصل
 - قضية الصيانة مهمة: أرسل مدير مكتب التربية والتعليم إلى المشروع بقائمة تحوي المدارس التي تمتلك معامل للحاسوب ، لكن الزيارة التي قام بها فريق المشروع لكل مدرسة على حدة بغرض المعاينة أظهرت أن معظم هذه المعامل لا تعمل ، وأشار السيد/ رضى إلى أهمية الاعتناء بالبنية التحتية لهذه المدارس، إضافة الى ذلك على المشروع أن يأخذ في احسبان الحالة التي وصلت اليها معامل الحاسوب في هذه المدارس.



- المشروع يستهدف عينة بسيطة من المدارس وسيكون هناك تحدي في الوصول إلى مدارس أخرى ، ولذا يجب توسيع الشراكة لمشروع انطلق. العديد من الملاحظات التالية ستنتظر في إستراتيجيات تساعد في توسيع الشراكة.
 - البحث عن طرق يتم من خلالها توظيف الإعلام في الترويج لعملنا في هذا المشروع
 - إشراك المجتمع بشكل عام في تعميم نجاح المشروع بالتركيز على أولياء الأمور بوجه خاص لمساعدوا في شراء أجهزة الحاسوب أو تمويل برامج لأولياء الأمور
 - إشراك الحكومة بشكل عام وليس وزارة التربية والتعليم في تعز حيث الضعف الشديد في خدمة الانترنت و يعتبر التواصل بهذا الخصوص مع المحافظ سيعالج الوضع
 - إشراك الجامعات مثل جامعات تعز للمساعدة في التدريب على صيانة الحواسيب و تكون مصادر عام في المشروع
 - دعم فريق المشروع في وزارة التربية والتعليم بأجهزة الحاسوب
 - اثني الشركاء على اقتراحات رضي واعتبروها افكار لحلول بناءة.
- سوزان ايارى من الوكالة الامريكية للتنمية الدولية ابدت الملاحظات والمقترحات التالية :
- مشروع انطلق فريد من نوعه ويتماشى مع رغبة اليمن في مساعدة نفسه في عالم التعليم
 - ان مشكلة صيانة معامل الحاسوب لها صلة بللوضع الثقافي للتأهيل والتدريب الذي تقوم به الحكومة . عندما يشعر الناس بان هذه الحواسيب أعطيت لهم من قبل الحكومة هم ليسوا بحاجة إلى أن يهتموا بها وأندلك من واجبات الحكومة. بينما المدارس بحاجة إلى إن تتحمل مسؤوليته في الاعتناء والاهتمام بمختبراتهم الخاصة
 - خبرة الوكالة الأمريكية للتنمية الدولية في إشراك مجالس الآباء والأمهات في مجال المساهمة في الصيانة على مستوى المدارس مفيد جدا : يجب أن نشرك أولياء الأمور في التأكد من أن المعامل تتم صيانتها
 - هدفنا في الاتفاقية هو إحالة المسؤولين بالتدريج إلى وزارة التربية والتعليم
 - هدفنا يكمن في ما بعد التقنية؛ نريد التركيز على استمرارية المشروع من خلال المعلمين والطلاب. طرق التعليم الأفضل لا تعتمد على التقنية؛ التغيير في فهم دور المعلم مهم وحساس . الطريقت التي أتبعها المشروع في دمج التقنية بالصورة الكاملة من أجل تعلم وتعليم أفضل اظهر القدرات الهائلة للمشروع
 - هناك بعض المخاوف من ان الاختبار القبلي أجري في وقت متأخر بعض الشيء بعد ان سبق للطلاب التعرف على بعض المواضيع الرقمية . هذا سيؤثر على الأرقام الخاصة بالقياس ، اعني بهذا انه سوف لن يكون هناك مكاسب جلية في حالة ان الطلاب سبق لهم استخدام مواضيع رقمية معينة قبل خضوعهم للاختبار القبلي، في هذا الحالة الاختبار القبلي لن يعكس نقطة انطلاق لما قبل المشروع او مستوى أولي. يجب أن نكون متنبهين إلى الوقت الذي خضع فيه الطلاب للقياس القبلي وأيضا الوقت الذي بدا فيه الطلاب في استخدام المواضيع الرقمية و بهذا سنكون قادرين على قياس النتائج بدقة



- المستقبل يقدم خيارين: اما بتوسعة المشروع ليشمل مدارس اكثر (أي بمعنى اشراك محافظات اخرى في التوسع) أو التوسع عن طريق ايجاد مصادر رقمية لمستويات اخرى (11، 12 أو 9، 11 .. الخ)
- نحن بحاجة إلى إستراتيجية لتوسعة الشراكة: نحتاج الى البحث عن شركاء يجارون الخلفية الفلسفية للمشروع.

مرة أخرى ، اتفق الشركاء مع هذه العروض والتقييمات والنقاش حول جذب شركاء جدد.

خلاصة لمار ورد في مداخلات الشركاء خلال النقاش المفتوح

- نحن بحاجة إلى اتخاذ قرار إذا ما أردنا شركاء آخرين
- هذا انطلق 1 والمرحلة القادمة ستكون انطلق 2 الخ
- يبدو انه من المبكر جدا التفكير حول شركاء آخرين لاننا نحتاج إلى اطلاعهم على نتائج الطلاب في الاختبار القبلي و البعدي
- تطوير الشراكة تحتاج إلى وقت ويجب أن نقوم بعمل تمهيدي في الوقت الراهن على سبيل المثال تحديد الشركاء القادرين
- نحتاج الى الوقوف امام النقطة التي إثارتها سوزان حول اتجاهات التوسعة
- نحتاج إلى صياغة وصف وضح لدور الشركاء الجدد
- يجب أن نعمل بشكل أكثر فيما يتعلق بتطور مواد الاتصال والتواصل مع الشركاء الحاليين والذين سينظموا في المستقبل
- نظرا لصغر حجم هيئة العاملين في المشروع ، الشخص الذي سيتابع هذه الافكار أو الانشطة والعمل على أساسها يحتاج إلى وقت
- يجب ان يكون لدينا محضر رسمي لهذا الاجتماع للرجوع اليه في الاجتماع القادم. EDC و وزارة التربية والتعليم سيرسلونه في خلال أسبوع
- يجب ان تكون نتائج الطلاب جاهزة لعرضها على الاجتماع القادم للجنة الاستشارية : هيلن بويل و امين القادري قدرا إمكانية ان يكون التقرير جاهز مع نهاية يونيو
- و مراعاة لانشغال الشركاء في إسفارهم وأيضا حاجاتهم لمزيد من الوقت لقرأة التقرير ، قرر المجتمعون ان يكون الاجتماع القادم في 5 اغسطس في صنعاء

أسيد / ديفد بيش من مكتب تحالف شركاء التنمية التابع للوكالة الأمريكية في القاهرة قدم الملاحظات التالية:

- من المهم جدا ان يستمر التركيز على الصورة الكلية ، حيث يمكن الجزم بان دور شركاء القطاع الخاص مفيد جدا.
- نحن بحاجة إلى إيجاد "وباء ايجابي" من خلاله يمكن ان يتوسع المشروع بعدة وسائل وليس فقط عن طريق القوات الرسمية لوزارة التربية والتعليم
- نحتاج إلى زراعة "الأبطال" من اجل نشر "الوباء الايجابي" الذي ذكرناه في النقطة الثانية. أبطال البرنامج هم مثلا الطلبة و التلاميذ المشاركين في أنشطة البرنامج.

لخص الأستاذ جميل الخالدي النقاط الرئيسية للاجتماع وتقدم بطلب حول إمكانية عمل بعض التعديلات البسيطة على الميزانية في إطار توصيف البرنامج الموجود. سوزان ايري أشارت بانه بالنسبة للوكالة الأمريكية أي تغيير يتطلب الخوض في عملية طويلة لأخذ الموافقة ، وهذا الى حد ما متعب ، وإشارت أيضا الى ان معظم ما في الميزانية قد تم إنفاقه في هذه النقطة . هيلن بويل ذكرت ان هذه اتفاقية تعاونية وان هناك بعض من الحرية لعمل بعض التعديلات البسيطة بدون أي تعديل على المنحة.



عادل باحميد قال انه يعي أي تغيير في تنفيذ المشروع ، وان هناك أشياء نحتاج إلى إضافتها، وأخرى نحتاج إلى استبعادها ، ولكنه قال انه سيقبل بالتغييرات البسيطة ، وان أي تغييرات كبيرة ستطلب موافقة مجلس إدارة العون. واتفق الجميع على عدم قبول أي تغييرات تؤدي الى تغيير نطاق عمل المشروع.

و في الختام، أشار السيد جميل الخالدي بأنّ من ناحية الأبطال هناك أبطال داخليين وخارجيين ونحن نحتاج لزرعة كلاهما. الأبطال الداخليون ضمن النظام، معلمين ، ومدراء المدارس، الخ. والخارجيين هم أولياء الأمور، القطاع الخاص، الخ. اختتم جميل الخالدي الاجتماع متمنيا للشركاء الاستمرار في الالتزامات المالية من اجل مواصلة أنشطة المشروع.

Advisory Committee Meeting
INTALEQ Project
May 10, 2009
Al Saeed Hotel
Ta'iz, Yemen

Present: Ridha Alkazdaghi, HSA Group; Adel Bahameed, Al Awn Foundation; Susan Ayari, USAID Yemen; Abdulhamid Al Ajami, USAID Yemen; Dave Besch, USAID Cairo; Jamil Al Khalidi, Ministry of Education; Ali Al Haimi, Ministry of Education; Gamal Ghailan, Ministry of Education; Khalid Algabari, Ministry of Education; Helen Boyle, EDC; Towfick Sufian, EDC; Ameen Al Kaderi, EDC; Abdenour Boukamhi, EDC.

The meeting began with introductions as everyone around the table introduced him/herself.

Mr. Jamil Al Khalidi presided over the meeting and extended his greetings and appreciation to all present for their support of the INTALEQ project.

Update on INTALEQ Project Progress and Activities

Mr. Al Haimi, leader of the localization team at the MOE gave a chronological update of the project activities from inception through the summit meeting on May 10th.

Dr. Helen Boyle of EDC pointed out that a sample of the INTALEQ teacher training materials was available for partners to take, if they wished to learn more about some of the training activities. She also gave an update on the pre- and post-testing, mentioning that the post-testing would be completed in the coming week.

Partner Comments, Suggestions and Observations

After the updates from the implementing partners, Mr. Al Khalidi gave the floor to the funding partners, beginning with the Al Awn Foundation. Mr. Adel Bahameed made the following points:

- We all need to be professional—Al Awn sent a letter to the Ministry of Education in October 2008 about furnishing school computer labs, as part of Al Awn's in-kind contribution to the project and he only received a response from the Ministry on May 10th 2009. Mr. Bahameed also pointed out that the Advisory Committee should have received the agenda for the meeting as well as the Quarterly Report in advance of the meeting.
- The Quarterly Report should contain a table or chart of some sort listing what was planned for the quarter and what was accomplished.
- Funding partners need greater clarity on who is responsible for what in terms of project implementation. Mr. Bahameed pointed out that it is not always clear to him whom to contact among the implementing partners on certain issues. He

mentioned again the lack of clarity in terms of whom to contact within the MOE vis a vis the computer labs. He would like to see position descriptions for people within the project.

- Maintenance of computers is an issue that the MOE should seek to address. Mr. Bahameed pointed out that computers supplied to schools by the Social Fund and others in Mukalla have broken down and no one is available to fix them. This is a wasted investment. He pointed out that Al Awn has offered to train MOE staff on maintenance, if the MOE would appoint maintenance people.
- There were some small issues with the translation of the video developed by EDC on the INTALEQ project.
- It was very unfortunate that the Al Awn logo was left off the banner for the summit meeting.

Partners agreed with the following observations and suggestions and will take action to address the issues. Jamil Al Khalidi said that the MOE would be more responsive and he and Helen Boyle agreed to set some formal guidelines for whom to communicate to about what, to help the funding partners and improve communication. EDC will look at the video to identify problems. Helen Boyle presented Mr. Bahameed with a formal letter of apology regarding the unfortunate omission of the Al Awn logo from the banner. Jamil Al Khalidi and Helen Boyle informed the group that they had addressed some of these issues in a meeting they held before the advisory committee meeting and that they were scheduled to meet on Tuesday, May 12, 2009 to take the discussion on roles, responsibilities and communication even further. They will inform partners of the results of these meetings.

Mr. Ridha Alkazdaghli from the Hayel Saeed Anam Group made the following observations and suggestions:

- Please contact the HSA Group to get clarification on which logo they would like INTALEQ to use on its communication materials.
- The maintenance issue is important; the DG in Ta'iz gave the project a list of schools with computer labs but upon inspection of the individual labs, it turns out that many were not working; the infrastructure reality of the schools and the lab conditions need to be taken into account in the project as well.
- Our sample of schools is small and it will be a challenge to reach more schools so INTALEQ should expand its partnership. The next several observations look at strategies for helping to expand the partnership.
- Find ways to involve the media in publicizing our work.

- Involve the community at large in spreading word about the success of the project; focus on parents in particular; perhaps facilitate a computer buying or financing program for parents to purchase computers.
- Involve the government at large and not just the MOE; in Ta'iz the connection to the internet was slow and advocacy work aimed at the governor helped the situation.
- Involve universities, like the University of Ta'iz, to assist in training, in maintaining computers and being a resource to the project overall.
- HSA Group is 18,000 strong; focus on families of those working for HSA for advocacy and support.
- Support the team at the MOE working on the project with computers.

Partners thanked Ridha for his suggestions, commenting that they were creative solutions and ideas. The group spent a little more time talking about communication and about involving parents, which seemed to be an idea with a lot of potential.

Susan Ayari of USAID made the following observations and suggestions:

- The INTALEQ project is unique and speaks to Yemen's desire to help itself in the realm of education
- The problem with computer lab maintenance is related to a cultural attitude of entitlement from the government. People feel that if computers were given to them by the government, they don't need to care for them and this is the government's job. Schools need to take responsibility to look after and care for their own labs.
- USAID's experience is that engaging parents' councils is very useful in maintaining school level inputs; we should involve them in making sure labs are maintained.
- Our goal in the MOU is to shift responsibility slowly to the MOE
- Our goal is beyond the technology; we want to focus on sustainability of the project through the teachers and the students; better teaching methods do not depend on technology; changing the perception of the role of the teacher is critical. The way the project integrates technology into the larger picture of better teaching and learning gives the project enormous potential.
- There is concern that the baseline testing was done somewhat late and some learning objects had already been introduced to the students. This will impact the baseline numbers (i.e. there will be no demonstrable gain if a student used a

particular learning object and then took the pre-test; the pre-test in this case does not reflect a pre-project starting place or initial level.) We will have to be very clear on when the baseline took place and when the learning objects were introduced so we can gauge results accurately.

- The future offers two choices: to scale the project up in terms of numbers of schools (i.e. expanding to other regions, etc.) or to scale it up in terms of creating digital learning objects for other grades (11 and 12 or 9 and 11, etc.)
- We need a strategy for expanding the partnership; we need to look for partners that represent a philosophical match for the project.

Again, partners agreed with these statements and assessments and a discussion ensued on the issue of attracting new partners.

Summary of open discussion on the points made by partners

- We need to decide if we want other partners.
- This INTALEQ 1; the next phase can be INTALEQ 2, etc.
- We need student results to show them; it is too early to think about other partners.
- It takes time to develop partnerships and we should start doing some preliminary work now, perhaps in identifying potential partners.
- We need to address Susan's point about the direction of expansion.
- We need a clearer description of a role for new partners to fill.
- We should do more in terms of communication materials for current and future partners (business like reports with results clearly reported, etc.).
- The project is thinly staffed and all of these activities or ideas take time from someone to implement/act upon/follow up on.
- We should have official meeting minutes from this meeting that we can refer to at the next meeting. The MOE and EDC will provide these within a week of this meeting.
- The student results should be ready for the next advisory committee meeting; Helen Boyle and Ameen Al Kaderi estimated that a report could be ready by the end of June. Given the partners' travel schedules and the need to leave time to read the report, late July or early August were the time periods discussed for the next meeting.
- The group decided to try to set a specific date for the next meeting. The next meeting will be August 5th in Sana'a, inshallah.

David Besch from USAID's GDA office in Cairo offered the following observations at this stage in the meeting:

- It is important to keep looking at the big picture and this is often where private sector partners can be extremely useful.

- We need to create a “positive epidemic” whereby the project work is set up to spread via several means, not just official MOE channels.
- We need to cultivate “champions” to spread the “positive epidemic” mentioned in point number 2.

Jamil Al Khalidi summed up the main points of the meeting and asked if it were possible within the existing program description and budgets to make modest changes. Susan Ayari pointed out that for USAID, changes involve a whole approval process that is rather cumbersome. She also pointed out that most of the USAID budget has been spent at this point. Helen Boyle mentioned that this is a cooperative agreement and there is some latitude to make small changes without an amendment to the award.

Adel Bahameed said he realizes that project change in the implementation and things often need to be added or subtracted but he said that he would only expect modest changes and large changes would involve the whole board of Al Awn.

All agreed that no changes should be aimed at altering the overall SOW of the project.

Jamil Al Khalidi also pointed out that in terms of champions there are internal and external ones and we need to cultivate both. Internal champions are within the system—teachers, principals, etc. External ones are parents, the private sector, etc.

Jamil Al Khalidi closed the meeting, saying he hoped that the partners would make financial commitments to continue with the project.

Appendix E

List of Invitees and Attendees to the Ta'iz Summit

List of Participants for the Summit Meeting in Ta'iz

Ministry of Education

- | | |
|------------------------------------|-----------------------------|
| 1- Minister of Education x | (Dr. Abdusalam Aljofi) |
| 2- Vice Minister of Education x | (Dr. Abdullah Alhamid) |
| 3- Deputy Minister x | (Mr. Gameel Alkhalidi) |
| 4- Deputy Minister | (Mr. Abdulkareem Algindary) |
| 5- Deputy Minister of Education | (Mrs. Fauziah Noman) |
| 6- Deputy Minister of Education | (Mr. Mohamed) |
| 7- DG of Sana'a Education Office x | (Mr. Mohamed Alfadhli) |
| 8- DG of Aden Education Office x | Dr. Abdullah Alnehary) |
| 9- DG of Taiz Education Office x | (Dr. Mahdi Abdusalam) |
| 10- DG of Mukalla Education Office | (Dr. Awad Albakri) |
| 11- MoE Technical Committee x | (Mr. Abdullah Ismaeel) |
| 12- MoE Technical Committee x | (Mr. Khalid Gubari) |
| 13- MoE Technical Committee x | (Mr. Gamal Ghailan) |
| 14- MoE Technical Committee x | (Mrs. Safiah Alduais) |
| 15- MoE INTALEQ Coordinator x | (Mr. Ali Alhaimi) |
| 16- MoE Localizing Team x | (Mr. Mohamed Abdulghafar) |
| 17- MoE Localizing Team x | (Mr. Adel Albaqa'a) |
| 18- MoE Localizing Team x | (Mr. Sharaf Alkhamesi) |
| 19- MoE Localizing Team x | (Mr. Hussian Alturkey) |
| 20- Maths Teacher Presenter x | (Ms. Eanas Alhaddad) |
| 21- Physics Teacher Presenter x | (Ms. Kalil Alshaddadi) |
| 22- Chemistry Teacher Presenter x | (Ms. Arwa Alkibsi) |
| 23- Biology Teacher Presenter x | (Ms. Fatima Alagel) |
| 24- Sana'a School Head Teacher | (Mr. Abdullah Arouni) |
| 25- Sana'a School Head Teacher x | (Ms. Gamelah Alhlafi) |
| 26- Sana'a School Head Teacher x | (Ms. Amatalmujeeb Almahdi) |
| 27- Sana'a School Head Teacher x | (Ms. Salwa Alawli) |
| 28- Sana'a School Head Teacher x | (Ms. Haliemah Adomaini) |
| 29- Sana'a School Head Teacher x | (Ms. Wahibah Ibrahim) |
| 30- Aden School Head Teacher | (Mr. Ibrahim Gawi) |
| 31- Aden School Head Teacher | (Ms. Ibtisam Khamis) |
| 32- Aden School Head Teacher | (Ms. Shadiyah Bahashwan) |

33- Aden School Head Teacher	(Ms. Deanah)
34- Aden School Head Teacher	(Mr. Ibrahim)
35- Mukala – Ibn Sena School Head Teacher x	(Mr. Ahmed Barhman)
36- Mukala – Saba Roakab School Head Teacher x	(Mr. Salem Batarfi)
37- Mukala – Ibn Shehab School Head Teacher x	(Mr. Salem Mufaiqer)
38- Taiz - Neemah School Head Teacher x	(Ms. Fatima Rassam)
39- Taiz – Zaeed Amushiki School Head Teacher X	(Ms. Wafa’a Alaghbari)
40- Taiz – Mohamed Addorah School Head Teacher x	(Ms. Nadia Mahmoud)
41- Taiz – Asma School Head Teacher x	(Ms. Amat Alrahman Alqadhi)
42- Taiz – Mohamed Ali Othman School Head Teacher x	(MR. Ahmed Alareeqi)

Project Partners

1- Alawn Foundation x	(Dr. Adel Bahameed)
2- Al Awn Foundation x	(Mr. Akram Askaf)
3- USAID Sana’a x	(Mrs. Susan Ayari)
4- USAID Sana’a x	(Mr. Abdulhameed Alajami)
5- USAID Egypt x	(Mr. David Besch)
6- USAID Sana’a x	(Mr. Rick Romero)
7- USAID Sana’a x	(Mr. Adam Dulin)
8- EDC Washington x	(Dr. Robert Spilvegel)
9- EDC Washington x	(Dr. Helen Boyle)
10- EDC Washington x	(Mr. AbdenourBoukamhi)
11- EDC Sana’a x	(Dr. Towfick Sufian)
12- EDC Sana’a x	(Mr. Ameen Alkaderi)
13- HS G x	(Showqi Ahmed Haye)
14- HSG x	(Redha Alkezdaghl)
15- HSG x	(Tareq Alaudaini)
16- Alsaeed Foundation x	(Faisl Faree)

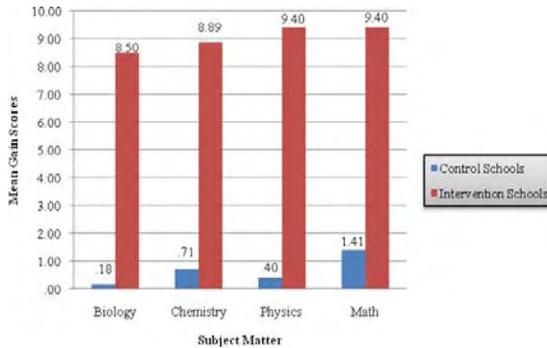
Local and International Community

1- Mastery Project University of Sana’a x	(Dr. Abdurrahman Shief)
2- Mastery Project University of Sana’a	(Dr. Scott McCallagh)
3- Ministry of Education Bahrain	(Dr. Ahmed Hassan Ahmed)
4- Ministry of Education Bahrain	(Dr. Khalid Khanfar)

Appendix F

Report on Student Assessment

INTALEQ Student Assessment Report



PHASE 1 (July 2009)

A Global Development Alliance Project



Prepared and Submitted by Education Development Center, Inc



Abstract

Under the INTAELEQ Project, as part of its monitoring and evaluation work, tenth grade students were sampled from nine schools in Sana'a and were tested in four subject areas: physics, biology, chemistry, and math. These students belonged to six intervention schools and three control schools in Sana'a. The project used a pre- and post-test model to evaluate whether students in the intervention schools showed significant learning gains over their counterparts in the control schools in the four subject areas. Test results revealed a substantial and a statistically significant difference (at the $\alpha = .01$ level) in the mean (average) gain scores between intervention and control schools. Each intervention school had a 7 to 9 point mean gain over the control schools. These results strongly suggest that the intervention positively affected students' performance in each subject matter in all intervention schools. The results have a 95% confidence level.

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I. Background on the Project

The **INTALEQ** (**IN**novations in **T**echnology-**A**ssisted **L**earning for **E**ducational **Q**uality) project is a public/private partnership initiative that will help Yemeni students “step up” to the future by giving them a chance to master the types of skills necessary to flourish in the 21st century.

INTALEQ (which means “step up” or launch in Arabic) offers a replicable model for leveraging the power and pull of technology, not just to teach computer and internet skills, but to improve core teaching and learning in Yemeni high schools, particularly in the essential areas of math and science. INTALEQ’s overarching goal is: Improved acquisition of 21st century skills by Yemeni high school students, so that they are better equipped to find work, live productive lives and contribute to Yemen’s development as a stable and prosperous democracy.

INTALEQ partners are: the Yemeni Ministry of Education, the U.S. Agency for International Development, the Haile Saeed Anam Group, the Al Awn Foundation, Intel, Curriki and Education Development Center, Inc.

INTALEQ will be implemented in a total of 20 schools in Sana’a, Ta’iz, Mukalla and Aden over a 16-month period, which began in October of 2008.

In phase one (roughly October 2008 – May 2009 including project start up and launch), the project has been implemented in six schools in Sana’a and has: 1) adapted existing, Arabic-language *Intel skool.com* digital math and science materials for the second semester of grade 10 in Yemen;¹ 2) assisted the Ministry of Education to develop an educational portal to share the new materials; 3) trained teachers and administrators to use the first set of digital learning materials to improve classroom instruction and student learning; 4) followed up with teachers in the schools and 5) collected and analyzed data on the impact of the digital learning materials and the training program on student learning and teacher performance in Sana’a.

The project will be expanded to the additional 14 schools in Ta’iz, Mukalla and Aden starting in August 2009 and will use the experience and results of the pilot in Sana’a to guide the expansion. This report documents the process of monitoring and evaluating student performance in the INTALEQ schools and presents the student assessment results.

II. Interventions

Tenth grade students from nine schools in Yemen and were tested on target concepts in four content areas: physics, biology, chemistry, and math. These students were enrolled in six “intervention” (INTALEQ project) schools and three “control” schools (i.e. where there was no intervention). The intervention schools were Al-Khansa’a, Al-Quds, Al-Sabeen, Omer Bin Abdulaziz, Fatima Al-Zahra’ a, and Sinan Hadroum. Omer Bin Abdulaziz is a boys’ school and

¹ Intel’s skool.com materials for math and science education have won multiple awards and are known for their innovative promotion of the types of critical thinking and problem solving skills described in the box above that are the very essence of 21st century skills.

the rest are girls' schools. The control schools were Al-Kuwait, Al-Thowra, and Bilquis. Among the control schools, Al Kuwait is a boys' school and the other two are girls' schools.

The interventions administered to the INTALEQ project schools included:

- A. The provision of *digital learning objects* for use by students in school computer labs, under teacher direction;
- B. Training for teachers and school administrator on how to use the digital learning objects to structure hands-on, active learning lessons for students on the key 10th grade math and science concepts;
- C. Periodic follow up visits by project staff/MOE to check on teachers' progress in using the learning objects.

Each is elaborated on briefly below.

A. Digital Learning Objects

The digital learning objects were developed as part of the Intel Corporation's skool.com program, separate from the INTALEQ project. The learning objects are instructional tools that run on a computer (much like an applet) and can be used off of a CD or the internet. They provide students with simulations of scientific processes using audio/video and/or animation. They often focus on hard to teach concepts where the addition of animation or some interactive problem solving activity helps maximize students' understanding. The learning objects are meant to supplement and enrich existing lessons; they are not stand alone lessons but intended to be integrated into a teacher's overall unit plans. Appropriate learning objects were selected by the Yemeni Ministry of Education (MOE) from amongst Intel's pool of Arabic language digital learning objects developed and tested by Intel in Saudi Arabia, Egypt and Libya. The majority of the objects selected by the Yemeni team were from the Intel Egypt collection.

The objects were selected because they aligned with the Yemeni 10th grade curriculum for physics, math, biology or chemistry and reinforced concepts and skills emphasized in the Yemeni curricula. The learning objects were "localized" i.e. adapted to the Yemeni context by a team of Yemeni MOE experts drawn from the department of Educational Technology and Aids, the Curriculum Department and the Education Research and Development Center. The team was led by members from the Department of Educational Technology and Aids. The team leaders were trained by Intel adaptation experts in Cairo, Egypt and they in turn trained the additional team members. The objects were largely localized by the team during a retreat in December of 2008. Once the team did the localization, an Intel programming team in Cairo made the actual changes to the digital objects and returned them to the MOE team for review and validation. The objects localized during this time period were for the second semester of 10th grade in the four subject areas mentioned above.

B. Training and Capacity Building

EDC, with MOE approval, designed a training program for trainers and for 10th grade teachers in the four subject areas from the intervention schools. EDC began with some materials used in its previous projects in Yemen (the IYHS and ILSI projects) and updated these materials to incorporate a stronger focus on project-based learning and integrated sessions on using the digital learning objects. In January of 2009, EDC trained a cadre of trainers, drawn from the localization team, master teachers from the IYHS and ILSI projects, MOE supervisors and some university professors in the field of education. This cadre constitutes a resource for the MOE to draw on in expanding the program. EDC trainers, with selected members of this cadre, trained 10th grade math and science teachers from the six project pilot schools in Sana'a in February of 2009. The teachers were then tasked with returning to their schools, having committed to using the learning objects regularly in the school computer labs with their students. Indeed, the school principal had to formally commit to ensuring that teachers used the learning objects with their students in the labs, in order to be selected for participation in the project. As part of the training, a break out session was organized for school administrators, to sensitize them to how to support and follow up with teachers in the utilization of the learning objects.

C. School-based Follow Up

INTALEQ staff and the MOE paid follow up visits to the school during the course of the semester and conducted several focus group meetings with teachers and administrators to track their progress in using the new teaching methods and incorporating the digital learning objects into their instruction. INTALEQ staff and MOE counterparts facilitated the meetings and provided advice and support on using the materials and the computer lab equipment. During the follow up visits, qualitative data was collected on how teachers were using the materials in the form of video footage of lessons and focus group notes and discussions with administrators.

The control schools received no intervention from the project (i.e. they did not have access to the digital learning objects and received no training or follow up from the INTALEQ project).

III. Student Assessment Instrument Development

The INTALEQ project developed assessment instruments (tests) keyed to the learning objects (which were directly keyed to the Yemeni curricula in the four subject areas) to evaluate whether the new teaching methods and the digital learning objects had an impact on student learning. The tests were developed by an EDC Arabic speaking content and assessment expert (math and biology) and by the MOE and Intel experts (physics and chemistry). The same basic multiple choice format was used for all tests; some questions involved solving a problem to determine the correct answer, which was one of the multiple choices offered.

The INTALEQ team actually used 2 versions of the same exam (A and B) for each subject. For the pre-test, the test versions were randomly distributed in each classroom, to minimize the risk that results would be skewed by students sharing answers. The two versions contained the same

questions, but the sequencing of the questions was different on each version. For the post test, students received the same version of the test they took for the pre-test. The tests had the following number of items:

- Physics exam A - 41 items
- Physics exam B - 41 items

- Chemistry exam A - 35 items
- Chemistry exam B - 35 items

- Math exam A - 35 items
- Math exam B - 35 items

- Biology exam A - 33 items
- Biology exam B - 33 items

IV. Sample Characteristics

The six INTALEQ schools in Sana'a are Al-Khansa'a, Al-Quds, Al-Sabeen, Omer Bin Abdulaziz, Fatima Al-Zahra' a, and Sinan Hadroum. From the six project schools, INTALEQ sampled almost half of the tenth grade math and science classes. In each school, an entire grade level is broken down into classes, or sections.

- Omer Abdulaziz Boys' school: 11 sections of 10th graders; 4 randomly selected for testing.
- Al Quds Girls' school: 6 sections of 10th graders; 3 randomly selected for testing
- Al Zahra' a Girls' school: 4 sections of 10th graders; 2 randomly selected for testing
- Sinan Hadroum Girls' school: 4 sections of 10th graders; 2 randomly selected for testing
- Al Sabeen Girls' school: 4 sections of 10th graders; 2 randomly selected for testing
- Al Khansa'a Girls' school: 4 classes of 10th graders; 2 randomly selected for testing.

A total of 15 sections (classes) were given both the pre- and the post-tests in each subject area (math, biology, physics and chemistry) in the control schools.

The three control schools are Al-Kuwait, Al-Thowra, and Bilquis. Control schools were selected that matched the project schools across various characteristics such as school size (i.e. number of students and teachers), socio-economic strata, and availability of technology. Sections or classes of students to be tested in the control schools were randomly selected from among the available list of sections.

Tenth grade students from nine schools in Yemen were tested on four areas of subject matter: physics, biology, chemistry, and math. The students were enrolled in six intervention schools and

three control schools. The number of students involved in each school by subject matter is presented in Table 1.

Table 1. Sample size in Intervention and Control Schools by Subject Matter

	School Name	Subject Matter (n)			
		Physics	Biology	Chemistry	Math
<i>Intervention Schools</i>	Al-Khansa'a'	98	100	96	104
	Al-Quds	119	135	118	136
	Al-Sabeen	100	98	98	97
	Omer Bin Abdulaziz	241	223	241	217
	Fatima Al-Zahra'	96	97	95	94
	Sinan Hadroum	120	116	113	119
	<i>Subtotal (N)</i>	774	769	761	767
<i>Control Schools</i>	Al-Kuwait	115	77	124	83
	Al-Thowra	80	81	82	72
	Bilquis	102	102	114	117
	<i>Subtotal (N)</i>	297	260	320	272
Total Sample Size (N)		1071	1029	1081	1039

* N.B. The numbers reported in Table 1 are the valid number of students who did both the pretests and posttests for each subject matter and had computed gain scores for these tests.

The distribution of subject matter pre-test scores of both the intervention and the control schools were close to normal. (Figures 1 – 8).

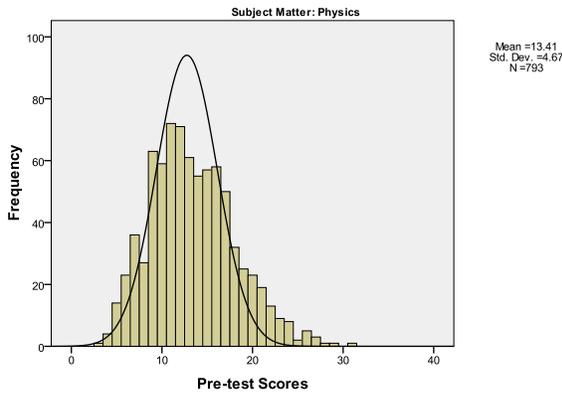


Figure 1. Frequency Distribution of Physics Pretest Scores of Intervention Schools

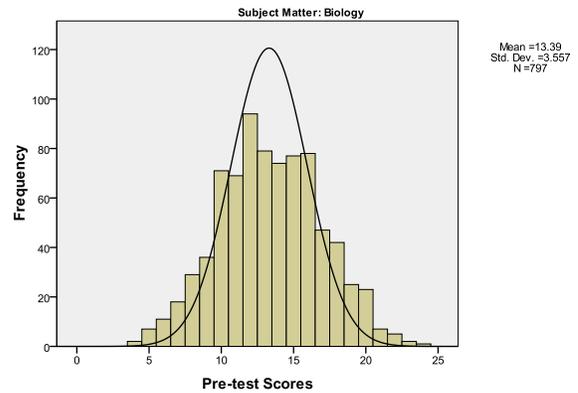


Figure 2. Frequency Distribution of Biology Pretest Scores of Intervention Schools

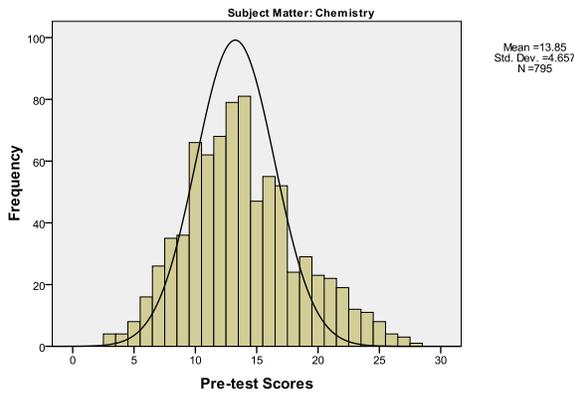


Figure 3. Frequency Distribution of Chemistry Pretest Scores of Intervention Schools

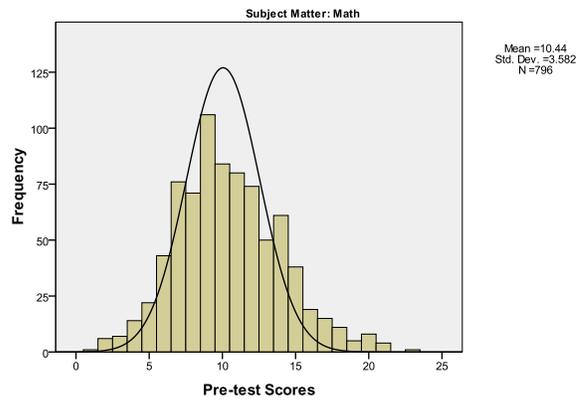


Figure 4. Frequency Distribution of Math Pretest Scores of Intervention Schools

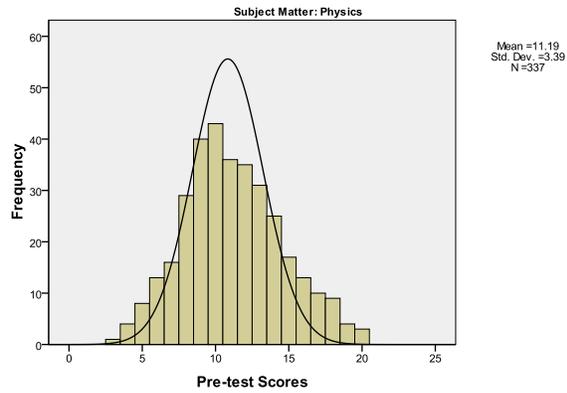


Figure 5. Frequency Distribution of Physics Pretest Scores of Control Schools

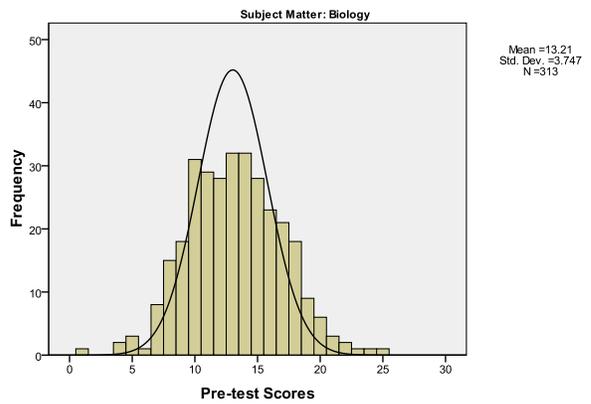


Figure 6. Frequency Distribution of Biology Pretest Scores of Control Schools

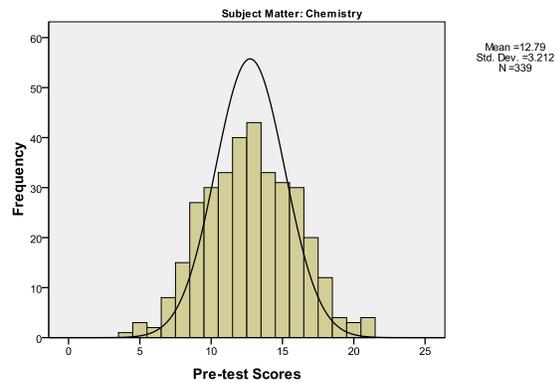


Figure 7. Frequency Distribution of Chemistry Pretest Scores of Control Schools

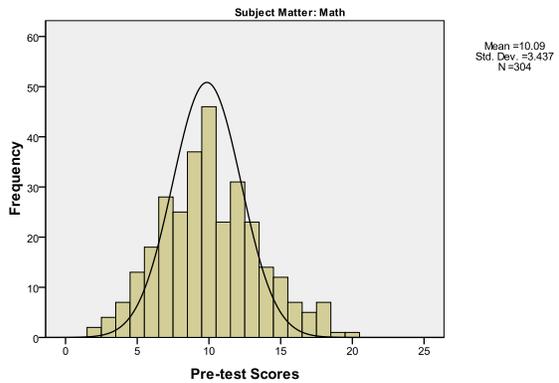


Figure 8. Frequency Distribution of Math Pretest Scores of Control Schools

Hence, the characteristics of the samples of this study were similar to that of the general population of 10th graders' subject matter pretest scores.

V. Test Administration, Correction and Data Entry

Pre-tests were administered in mid-March to a sample of 10th grade students in all nine schools and were re-administered as post-tests in late May, to the same sample of 10th grade students in all nine schools. The tests were administered by the teachers, and because of class size, people who were not MOE employees (university students, and secondary school graduates whom the project hired) acted as invigilators in order to make sure that students were not sharing answers and that no one left the classrooms with a copy of the test paper.

Tests were collected by the invigilators and returned to the INTALEQ staff. Classroom teachers were invited to come to the EDC office to correct the testes. (There were 4220 tests to correct in total; hence it could not be done efficiently by the INTALEQ staff.) Those who were free after the school shift (i.e. those who didn't have family commitments) accepted the invitation. The teachers were given an answer key and corrected the tests at the EDC office over the course of several days for each administration (pre- and post). EDC staff randomly selected several tests to double correct. If any errors were found in the double correction process, the entire set of tests for that class was reviewed.

All data were entered into an Excel spreadsheet by EDC's administrative assistant (for the pre-test) and by the administrative assistant and one of the graders who was familiar with Excel for the post-test as time was tighter after the post test. The Excel spreadsheets were then uploaded into SPSS for analysis.

Dr. Fouad Abdelkhalick, an Arabic speaking professor/researcher/teacher trainer at the University of Illinois and EDC casual employee, ran the statistical analyses in order to investigate the effectiveness of the intervention in the context of the four content areas.

VI. Results: Comparison of Subject Matter Scores between Intervention and Control Schools

The analyses indicate that the intervention resulted in substantial improvement in the intervention schools' student performance in all four content areas when compared to that of the control schools' students. What is more, these improvements cannot be attributed to chance; that is, they reflect "real" gains in the intervention group students' achievement. This inference was based on the following three conditions:

- First, the intervention group students' *subject matter posttest scores* were higher than their pretest scores. These differences were statistically significant. In comparison, differences between subject matter pretest and posttest scores for the control group were either minimal or did not even exist.
- Second, subject matter *mean gain* scores for the intervention group were substantially higher than those of the control group. This indicated that the intervention had improved the intervention students' performance in each subject matter to a substantially larger extent than that for the control group students.

- Third, subject matter *mean gain scores for each of the individual intervention schools* were higher than the subject mean gain scores of each of the individual control schools. This indicated that the intervention was effective irrespective of the school in which it was undertaken.

Comparison of the intervention group’s mean gain scores across subject matter areas showed statistically significant differences for Biology, Physics, and Math mean gain scores. This might indicate that the intervention had larger impact on students’ performance in Physics and Math than Biology.

A. Comparison of Subject Matter Pretest and Posttest Scores of Intervention and Control Schools

A paired-wise *t*-test was conducted in order to investigate the nature of any observed improvements in participant students’ test scores. A *t*-test helps establish whether any observed differences between a group’s pretest and posttest scores reflects actual improvements or could simply be attributed to the “luck-of-the-draw,” that is, that improvements happen to be related to the specific group of students chosen for study. Thus, a “statistically significant” difference means the observed difference cannot be explained by chance.

There were statistically significant improvements in the intervention group students’ performance in the four subject matters. These students’ subject matter posttest scores were higher than their pretest scores. However, in the control group, the differences were not statistically significant: posttest scores in this latter case were either less, equal to or only slightly more than, the pretest scores (Table 2).

Table 2. Comparison of Mean Pre-test and Post-test Scores of Intervention and Control Schools by Subject Matter

<i>Subject Matter</i>	<i>Condition</i>	<i>Schools</i>	<i>Pre-test Scores (M)</i>	<i>Post-test Scores (M)</i>	<i>t</i>	<i>df</i>	<i>P-value</i>	
Physics	Intervention	Al-Kansa’	14.40	22.98	13.00	97	.00*	
		Al-Quds	15.58	24.06	19.03	118	.00*	
		Al-Sabeen	12.29	22.84	25.84	99	.00*	
		Omer Bin Abdulaziz	12.87	21.41	21.55	240	.00*	
		Fatima Al-Zahra’	13.91	26.80	32.40	95	.00*	
		Sinan Hadroum	12.30	21.27	24.63	119	.00*	
	Control	Al-Kuwait	10.77	10.09	-1.31	114	.19	
		Al-Thowra	11.56	11.81	0.54	79	.59	
		Bilquis	11.57	13.29	3.75	101	.00*	
	Biology	Intervention	Al-Kansa’	13.88	21.44	15.93	99	.00*
			Al-Quds	14.52	22.31	19.03	134	.00*
Al-Sabeen			13.42	22.90	19.69	97	.00*	
Omer Bin Abdulaziz			12.79	18.89	18.73	222	.00*	
Fatima Al-Zahra’			13.61	26.51	30.39	96	.00*	

		Sinan Hadroum	12.64	22.90	23.98	115	.00*	
	Control	Al-Kuwait	13.00	11.49	-2.69	76	.009*	
		Al-Thowra	13.67	14.17	1.01	80	.32	
		Bilquis	13.24	14.43	2.57	101	.01*	
Chemistry	Intervention	Al-Kansa'	13.35	20.47	12.02	95	.00*	
		Al-Quds	17.51	22.66	11.84	117	.00*	
		Al-Sabeen	16.93	22.44	13.39	97	.00*	
		Omer Bin Abdulaziz	10.77	22.34	39.46	240	.00*	
		Fatima Al-Zahra'	15.53	26.42	23.29	94	.00*	
		Sinan Hadroum	13.32	23.12	26.13	112	.00*	
	Control	Al-Kuwait	12.47	8.84	-6.28	123	.00*	
		Al-Thowra	13.02	15.62	4.83	81	.00*	
		Bilquis	13.20	17.28	8.42	113	.00*	
	Math	Intervention	Al-Kansa'	11.54	18.93	13.45	103	.00*
			Al-Quds	12.04	19.76	18.54	135	.00*
			Al-Sabeen	11.03	21.09	24.02	96	.00*
Omer Bin Abdulaziz			9.46	19.04	33.59	216	.00*	
Fatima Al-Zahra'			11.07	20.66	20.70	93	.00*	
Sinan Hadroum			8.52	20.60	36.00	118	.00*	
Control		Al-Kuwait	10.36	11.42	2.58	82	.01*	
		Al-Thowra	10.11	10.86	1.63	71	.11	
		Bilquis	9.75	11.81	4.56	116	.00*	

*Statistically Significant ($p < .05$)

B. Comparison of Subject Matter Pretest and Posttest Mean Gain Scores between the Intervention and Control Schools

Next, mean gain scores were computed for each subject matter. Gain scores refer to the difference between posttest and pretest scores. These scores show the extent to which students' performance in each of the subjects matter has improved after the intervention. The mean gain scores for the intervention and comparison group were then statistically compared using a *t*-test. Such a comparison allows making conclusions about changes in students' test scores while accounting for any initial differences between the intervention and control students' scores. In other words, the conclusions below already take into account whether students in the intervention or control group started out with higher or lower scores than students in the other group.

On average, students' performance in each of the subject matter improved in the intervention schools. Intervention schools' mean gain scores were highest for Physics ($M = 9.40$, $SD = 5.416$) and Math ($M = 9.40$, $SD = 4.715$), then Chemistry ($M = 8.89$, $SD = 5.309$), and Biology ($M = 8.50$, $SD = 5.179$) (Table 3; Figure 9). On the other hand, there was a slight improvement in students' performance in each subject matter in the control schools (Table 3). The highest subject matter mean gain scores in the control schools was in Math ($M = 1.41$, $SD = 4.334$), then

Chemistry ($M = 0.71$, $SD = 6.616$), Physics ($M = 0.40$, $SD = 4.990$), and Biology ($M = 0.18$, $SD = 4.816$) (Table 3; Figure 10).

Table 3. Descriptive Statistics for Intervention and Control Schools' Gain Scores by Subject Matter

		Gain Scores					
	Subject Matter	<i>N</i>	<i>M</i>	<i>SD</i>	Minimum	Maximum	Range
<i>Intervention Schools</i>	Physics	774	9.40	5.42	-18	27	45
	Biology	769	8.50	5.18	-8	22	30
	Chemistry	761	8.89	5.31	-7	29	36
	Math	767	9.40	4.72	-7	25	32
<i>Control Schools</i>	Physics	297	.40	4.99	-17	15	32
	Biology	260	.18	4.82	-17	15	32
	Chemistry	320	.71	6.62	-18	19	37
	Math	272	1.41	4.33	-16	14	30

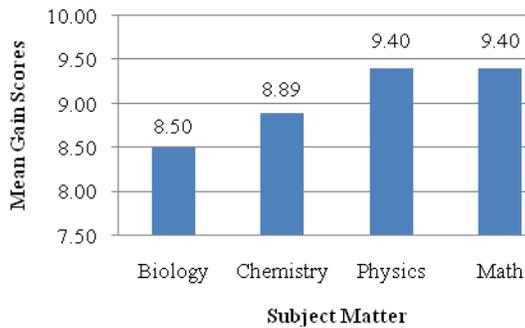


Figure 9. Subject Matter Mean Gain Scores for Intervention Schools

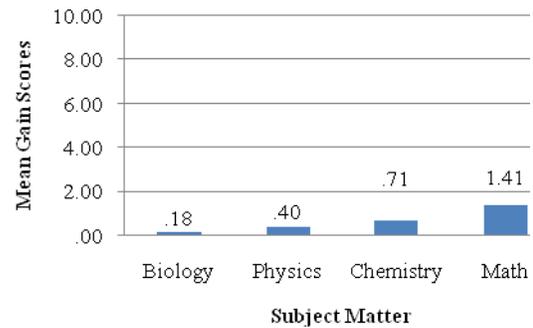


Figure 10. Subject Matter Mean Gain Scores for Control Schools

Subject matter mean gain scores of intervention schools were found to be higher than those of the control schools (Figure 11; Table 4). A *t*-test was conducted in order to confirm that differences in subject matter mean gain scores between the intervention and control groups were real and could not be attributed to chance. The *t*-test indicated statistically significant differences in subject matter mean gain scores between the two groups; indicating that the intervention substantially impacted and improved students' performance in each of the subject matters in the intervention schools, as compared to the control group.

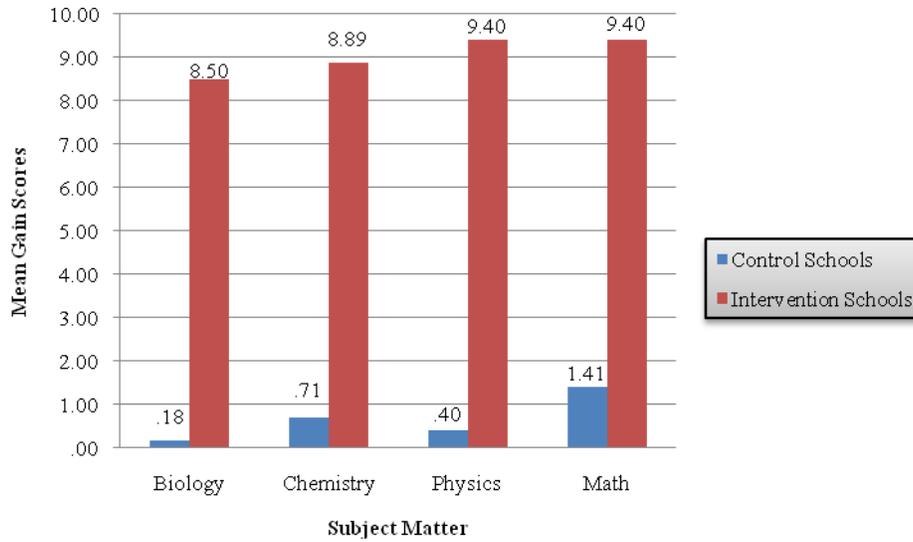


Figure 11. Subject Matter Mean Gain Scores of Intervention and Control Schools

Table 4. Comparison of Subject Matter Mean Gain Scores across Intervention and Control Schools

<i>Subject Matter</i>	<i>Mean Gain Scores</i>		<i>t</i>	<i>df</i>	<i>p-value</i>
	<i>Intervention Schools</i>	<i>Control Schools</i>			
Physics	9.40	0.40	25.807	578.793	.000
Biology	8.50	0.18	23.623	476.615	.000
Chemistry	8.89	0.71	19.609	499.775	.000
Math	9.40	1.41	25.537	514.264	.000

The subject matter mean gain scores of each intervention school were higher than those of each of the control schools (Table 5). In order to confirm differences in subject matter mean gain scores, a *t*-test was conducted. Results revealed that the differences were statistically significant; hence, such differences were real and could not be attributed to chance (Table 6). This indicated that the intervention affected students’ subject matter performance in each of the intervention schools.

Table 5. Descriptive Statistics of Subject Matter Gain Scores by School

		<i>Gain Scores</i>							
		<i>Physics</i>		<i>Biology</i>		<i>Chemistry</i>		<i>Math</i>	
	<i>School Name</i>	M	SD	M	SD	M	SD	M	SD
<i>Intervention Schools</i>	Al-Khansa'a	8.58	6.53	7.56	4.75	7.11	5.80	7.39	5.61
	Al-Quds	8.48	4.86	7.79	4.76	5.15	4.73	7.73	4.86
	Al-Sabeen	10.55	4.08	9.48	4.77	5.51	4.07	10.06	4.13
	Omer Bin Abdulaziz	8.54	6.15	6.10	4.86	11.58	4.55	9.58	4.20
	Fatima Al-Zahra'	12.90	3.90	12.90	4.18	10.89	4.56	9.59	4.49
	Sinan Hadroum	8.97	3.99	10.26	4.61	9.81	3.99	12.08	3.66
<i>Control Schools</i>	Al-Kuwait	-0.68	5.55	-1.51	4.90	-3.63	6.44	1.06	3.75
	Al-Thowra	0.25	4.15	0.51	4.50	2.60	4.87	0.75	3.90
	Bilquis	1.73	4.65	1.20	4.70	4.08	5.17	2.06	4.89

Table 6. Comparison of Subject Matter Mean Gain Scores of each Intervention Schools with Control Schools

		<i>Significance Level (p-values) of Tukey's HSD Post Hoc Test</i>		
		<i>Control Schools</i>		
<i>Subject Matter</i>	<i>Intervention Schools</i>	Al-Kuwait	Al-Thowra	Bilquis
Physics	Al-Kansa'	0.00**	0.00**	0.00**
	Al-Quds	0.00**	0.00**	0.00**
	Al-Sabeen	0.00**	0.00**	0.00**
	Omer Bin Abdulaziz	0.00**	0.00**	0.00**
	Fatima Al-Zahra'	0.00**	0.00**	0.00**
	Sinan Hadroum	0.00**	0.00**	0.00**
Biology	Al-Kansa'	0.00**	0.00**	0.00**
	Al-Quds	0.00**	0.00**	0.00**
	Al-Sabeen	0.00**	0.00**	0.00**
	Omer Bin Abdulaziz	0.00**	0.00**	0.00**
	Fatima Al-Zahra'	0.00**	0.00**	0.00**
	Sinan Hadroum	0.00**	0.00**	0.00**
Chemistry	Al-Kansa'	0.00**	0.00**	0.00**
	Al-Quds	0.00**	0.00**	0.00**
	Al-Sabeen	0.00**	0.00**	0.00**
	Omer Bin Abdulaziz	0.00**	0.00**	0.00**
	Fatima Al-Zahra'	0.00**	0.00**	0.00**
	Sinan Hadroum	0.00**	0.00**	0.00**
Math	Al-Kansa'	0.00**	0.00**	0.00**
	Al-Quds	0.00**	0.00**	0.00**
	Al-Sabeen	0.00**	0.00**	0.00**
	Omer Bin Abdulaziz	0.00**	0.00**	0.00**
	Fatima Al-Zahra'	0.00**	0.00**	0.00**
	Sinan Hadroum	0.00**	0.00**	0.00**

** Statistically significant ($p < .05$)

C. Comparison of Subject Matter Mean Gain Scores across Intervention and Control Schools

An Analysis of Variance (ANOVA) test was conducted to determine whether there were significant differences across the mean gain scores for the four subject matters. Simply put, an ANOVA performs several *t*-tests at once comparing mean gains across several pairs of groups. If significant, an ANOVA indicates that, at least, one pair of the compared mean gain scores was statistically significant. This test showed a statistically significant difference across the mean gain scores of the four subject matters in the intervention schools ($F = 5.540, p < .05$) (Table 7). However, by itself, an ANOVA does not show which of several pairs of mean gain scores were statistically significant. Thus, the ANOVA was followed by a Tukey Post Hoc test to specify which of the compared mean gain score pairs were statistically significant. Tukey’s test showed that differences existed between Biology and Math, and Biology and Physics mean gain scores, whereby students’ Biology mean gain scores were lower than the Physics and Math mean gain scores (Table 8).

Therefore, the results confirmed that students of the intervention group performed better in Physics and Math than Biology. This might indicate that the intervention had rather a larger impact on students’ performance in Physics and Math than Biology.

Table 7. Analysis of Variance for Mean Gain Scores across Subject Matter

	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>p-value</i>
<i>Between Groups</i>	442.880	3	147.627	5.540	.001
<i>Within Groups</i>	81734.497	3067	26.650		
Total	82177.377	3070			

Table 8. Tukey’s HSD Post Hoc Test for Subject Matter Mean Gain Scores

	<i>Significance Level of Tukey’s HSD Post Hoc Test</i>			
	Physics	Biology	Chemistry	Math
Physics				
Biology	.004**			
Chemistry	.208	.460		
Math	1.000	.003**	.206	

** Statistically significant ($p < .05$)

VII. Conclusions

Tenth grade students in schools assisted by the INTALEQ project performed significantly better than their peers in schools not participating in the INTALEQ project in the areas of math, physics, chemistry and biology. The results have a 95% level of confidence. Hence, it is highly likely that the difference in mean gain scores noted between the intervention and control school students is attributable to the INTALEQ project interventions.