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EU REGIONAL TRUST FUND 'MADAD'

الصندوق الاستئماني الأوروبي 'مدد'

# Science Education: a Key to University Access for Refugee Girls



THIS PROJECT IS IMPLEMENTED UNDER THE GRANT SCHEME OF HOPES



HIGHER AND FURTHER EDUCATION OPPORTUNITIES & PERSPECTIVES FOR SYRIANS





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## Project: Science Education: A Key to University Access for Refugee Girls

**Aim:** Strengthen the pipeline to Higher Education for Syrian refugees (ages 14-25, 90% female) through **establishment of Ghata science labs** serving all-girls' intermediate schools and the PADILEIA college-readiness program, as well as **capacity-building for science and math educators** addressing language-related barriers to educational success.



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## Project Partners

### Project Management:

AUB Center for  
Civic  
Engagement and  
Community  
Service

### Teacher Training:

AUB Department  
of Education /  
Science and  
Mathematics  
Education Center

### Implementation:

Kayany  
Foundation



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## Project Impact

- ✓ **Keeping refugee girls on the pathway to higher education** by enabling delivery of accredited science education tailored to their needs, dramatically increasing their future eligibility for Higher Education enrollment.
- ✓ **Improving college readiness and success of refugee high school graduates** by addressing the key barrier of the language of instruction .
- ✓ **Increasing the capacity of science educators to teach the Lebanese curriculum to Syrian refugees** with a focus on language barriers and critical thinking.



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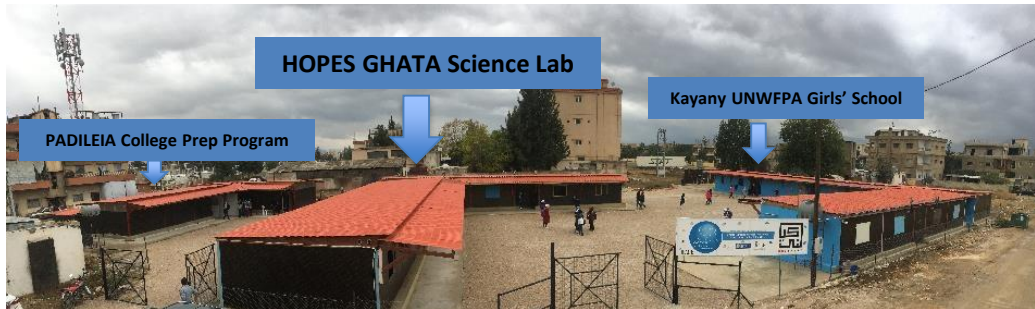


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## Project Milestones and Successes



**Fall 2017 – Labs Constructed in 2 Schools in Bar Elias & Saadnayel, Bekaa**



**Spring 2018 – Teacher Capacity Building**

**Campus Visit for 8<sup>th</sup> Grade**

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## Project Milestones and Successes



## Summer 2018 – Labs Equipped and Summer Science Reinforcement Program

Student Survey	"Yes"
Do you benefit from the laboratory sessions?	87%
Does lab work help you to retain information better?	90%



## Academic Year 2018-2019 – Labs Utilized Weekly for 7<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup> Grade Science

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## Student Perspectives

Lubna Karbooj      Grade 9 Student, Kayany Foundation Malala 2 School  
Rama Rajab      Grade 9 Student, Kayany Foundation UNWFP School



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## Teacher Perspective

Hanadi Al Khatib Biology & Chemistry Teacher, Kayany Foundation



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## Academic Expert/Trainer Perspective

Dr. Tamer Amin and Dr. Rabih El Mouhayar, AUB Dept. of Education/SMEC



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## Meeting the Language Challenge in Science and Mathematics Instruction: A Teacher Training Project

### Key challenge:

How can we teach science and mathematics effectively when learners are not proficient in the language of instruction?

### Approach:

Understand how content and language skills are related, treat both as goals and scaffold learning of both.



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## Design of the Training Program

### Phase one: Needs analysis

1. **Focus group** with teachers to get to know them and hear about the challenges they are facing.
2. **Classroom observation** and recording.
3. **Identify typical classroom practices** (with focus on language use) through preparation of lesson transcripts and analysis.

### Phase two: One-day training (included analysis of transcripts)

### Phase three: Follow-up observation and individual feedback

### Phase four: Wrap up focus group

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## Components of the Training

1. **Features of the language** of science and mathematics (emphasis on non-technical words and genre)
2. **Analyzing the language demands** of science and mathematics lessons
3. **Teaching** science and mathematics **for understanding with language in mind**
  - i. Creating **meaningful contexts** (to reduce language demands)
  - ii. Sequence instruction **gradually increasing language demands**
  - iii. Using **Arabic** strategically

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## Successes

- **Active participation and positive attitude** of the teachers.
- Teachers **recognized the value of non-technical term** and **genre analysis** of their lessons and **began to integrate** these into their lesson plans.
- Discussion of **key terms/phrases** in the classroom **went beyond technical terminology**.
- Teachers were **reassured that Arabic can be used** and **began to use Arabic in more deliberate ways**



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## Challenges

- **Variability in students' English language proficiency** and the need for **strategies to encourage and support their participation** in class.
- **Strategies for reducing language demands** in classroom not taken up (more time needed on this in training and more tools need to be made available)
- **Strategies for language allocation** (English and Arabic) need more training and practice.
- **Longer term planning** (at the level of units, school year) challenging and would need to be added to training.
- **More involvement of school leaders and instructional supervisors needed** (e.g. to support strategic use of Arabic).

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# THANK YOU

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