Training Teachers to Teach Kids Programming

In August 2017, **TKP Labs successfully taught 21 trainers to teach kids computer programming** using TKPJava.

The 100+ hour train-the-trainer program took place over three weeks at Birzeit University, near the city of Ramallah in the West Bank.

The Project

[Partners for Sustainable Development](#) (PSD), and NGO located in Palestine's West Bank, was in search of computer programming curriculum for 12-16 year-old students. After implementing Computer Science programs to train younger students, PSD looked to expand upon that success.

To get there, PSD contracted [TKP Labs](#) to implement their free, open-source [Teaching Kids Programming](#) curriculum. PSD identified 21 potential trainers with various backgrounds in teaching and programming experience. Four trainers were professional teachers with only some programming experience. 17 trainers were recent university graduates with backgrounds in Computer Science or Engineering and very limited teaching experience.

Challenges Faced by PSD

- Partners for Sustainable Development is an NGO with a mission to prepare Palestinian youth to compete and thrive in a global community. As one of the organization's main objectives, PSD has been addressing the needs of technical education for students at nine centers throughout the West Bank.

- PSD felt the free, open-source and instructor-led Teaching Kids Programming Java curriculum would be instrumental to expanding their offering to 12-16 year-old students; however, PSD still needed trainers qualified to teach the 80+ hours of Java programming curriculum.

"I was in awe to see the students applying critical thinking and practical approaches in a collaborative way to come up with innovative solutions for different issues they are tackling. I know it has been a transformative experience that will stay with them throughout their lives."

Zohre Elahian, PSD Board Member

tkpLABS

Train-the-Trainer Program

- TKP Labs tailored both the training sessions and the manual to suit the unique broad audience— including those with only a basic programming background and those with little teaching experience. Prospective trainers were taught to train using the Intentional Method and Agile techniques, with courseware that employs the Socratic Method. This method was chosen because it stimulates critical thinking and problem-solving, two skills that have been identified as being highly effective for 12-16 year old students. Students are immediately challenged to use the skills learned to create their own unique outputs. Trainers were shown techniques to best stimulate this creative process.

- TKP Labs also tailored a custom introduction to Internet of Things (IoT) curriculum using devices from Electric Imp. Trainers learned how to teach students to set up hardware components and program the Integrated Development Environment (IDE) that would light an LED bulb. With further instruction, students were able to add multiple lights and make them blink at varying intervals, demonstrating an ability to build on their foundational learning.

Train-the-Trainer Outcomes:

All 21 trainers showed dramatic improvement in teaching and presentation skills. Trainers became increasingly proficient at identifying student needs, managing the classroom environment, and delivering technical concepts in clear and concise lessons.

All trainers gained "real world" experience by teaching eight hours of Java and IoT "Hello World" curriculum to 25 students. Feedback from the students and onlookers was overwhelmingly positive, with young students not wanting to leave sessions at the intended finishing time.

Trainers gained comprehensive knowledge of the curriculum. They developed and presented their own lessons in the TKP Java style as a final project to prove mastery of concepts and training abilities. Results were all overwhelmingly positive, and TKP Labs left with the conclusion that **every one of the 21 trainers would be effective TKP Java trainers.** TKP Java courses are currently being taught at centers across the West Bank.

"Although it was a very diverse and challenging group, including teachers with 17 years of experience, staff with training experience, undergraduate students, and new graduates with coding experience, all the participants gained new skills and techniques. All of them enjoyed engaging and interacting with the lessons, each other and the trainer-- and with such a diverse group, successes count double!"

Jawad AbuOwn, PSD CEO

About TKP Labs

[TKP Labs](#) is a 501(c)3 nonprofit technology organization dedicated to providing computer programming and Internet of Things (IoT) training for eight to 18 year-old students. We work exclusively with instructor-led curriculum, and facilitate versatile train-the-trainer sessions for non-technical teachers, parents and interns across varied geographic and socio-economic backgrounds.

TKP Labs utilizes Agile Technical Practices and Mastery Based Learning methods designed to stimulate critical thinking and problem-solving skills in students–important traits no matter the career path a student chooses. We ensure all classes we teach are engaging, educational, and appealing to both genders.

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