Israel
Case Study 6: Tichonet-Alterman High School (12-18), Tel Aviv

Success Factors

- Good teachers using Technology Enhanced Learning (TEL) in the classroom
- Recognition that TEL is not easy and requires teachers to be trained and have in-classroom support
- Funding found to employ experts who work with individual faculties
- Strong technical support
- Strong and transparent connection with parents
- Focus on the student as an individual
- One to one policy
- Excellent internet access and WiFi in all areas
- Technology that is fully integrated with the teaching and learning methods, and with a paperless policy

About the school

Tichonet-Alterman is a high school in the north of Tel Aviv, Israel. It opened its doors in 2012 as a result of the vision of the principal, Ram Cohen. The school's uniqueness in Israel is due to the decision to go paperless; all the content and class material is saved digitally in the cloud. There are approximately 1400 students from grades seven through twelve, and approximately 100 teachers and staff members. The school is located in an affluent neighbourhood, with families who are successful entrepreneurs rather than with strong academic backgrounds.

We aim to promote meaningful and relevant learning for the necessary skills and realities of the 21st century while encouraging students to acquaint themselves with both their social and physical environments, and to take an entrepreneurial initiative within their urban and communal surroundings.

The building is structured to include many open and bright spaces. It includes "transparent rooms", spaces that allow for collaborative learning environment. These rooms also provide spaces for learning outside of the regular classrooms. The school has a large library with a variety of seating options for all types of learners, an auditorium that seats 310 people, a 1000 seats sports arena that is used for sport events and performances, a playground, and courtyards.

The designers of the building received the Rokach Prize for Architecture in 2015 commending "the open school concept that creates synergy between the school and the buildings around it."

The school has a relatively large intake of children with special needs. Many of those students have autism who are put into mainstream classes with an assistant.

School achievement

Test scores are high, but this is not viewed as the most relevant outcome. Student are but more enthusiastic, and have an enjoyable and good experience of school. Students emerge from school with clear values and an understanding of world issues making them more prepared for work and life.

Use of digital technologies

Most lesson plans are organised on the school's Moodle platform in a way that teachers can develop and share lesson plans. The lessons plans can be easily modified and changed – one of the up sides of being a fully digital school.

The large special needs intake is due to the school's digital focus: technology helps special needs students organise their thoughts, find learning materials and books and help them type (as their handwriting is often poor). Every week parents are emailed a summary of school activities and events, details of their children's grades and more, making the school very transparent to the community.

Technology infrastructure and devices

The school procures Lenovo laptops for every student through a tender process with the municipality. Parents are asked to buy these devices. The decision was made to buy laptops in preference to tablets. The principal believes that tablets are not good for students; "they need a good keyboard, they need a good computer." Every student having the same device makes it easier for maintenance and compatibility and they come preloaded with Office software.

Each classroom has a large touch screen that is used by both teachers and students.

There is a good infrastructure and wifi is available throughout the school and in the courtyard. The school has three tech support personnel

Digital pedagogy

Students usually study in groups, work in open spaces, utilise online resources and work collaboratively on shared documents. The classroom experience combines a 10 minute teacher lecture followed by students' independent work, individually, in pairs or in groups, which can take place anywhere. By the end of a lesson, the students return to class and discuss their activities.

Teaching combines a variety of fields of study and entrepreneurial skills that allow students to experiment with initiating and leading projects. Within the framework of a unique trend of urban innovation, students are asked to promote responses to the challenges of the city of the future.

The school promotes global learning of young people around the world on common universal issues through online learning (such as blogs or video conferences). The students take part in various projects (e.g. Global Scholars) and youth exchange delegations on various subjects. For example, the students participate in "The Berlin Youth Delegation" on gender during the Holocaust, as well as gender issues today in Berlin and Tel Aviv.

The school has a Research and Development centre whose goal is to provide an infrastructure and space for entrepreneurial activity for students. The school has a partnership with the teacher-training program at Lewinsky College. The R & D team accompanies the teacher training and assists in promoting initiatives from the pilot stage through to systemic assimilation and possible

distribution outside the high school. An example of a project is the "Future Entrepreneurs of Tichonet" where a team of 24 students was established to learn how to initiate start-ups from the very first stage to a significant prototype. Each tech development is accompanied by internal research, evaluation and control. R & D takes care to cooperate with entrepreneurial companies such as Forex, Microsoft, or the Israeli Defence Forces Intelligence Unit.

The study of robotics and technology takes place at the 'Judy and Josh Weston Technology and Science Centre", which covers about 300 square meters on the ground floor of the school. There are five robotics teams from Tichonet competing in robotics competitions. In addition, the school hosts various robotics conferences and competitions. The school's robotics teams operate under the name "Makers Assemble #5951" that is made up of 100 students from grades eight to eleven. In 2011, the robotics department began a joint project with Microsoft International, printing artificial hands for children born without a hand in the framework of the project "Give me a hand in 3D." The hand they have built for a child is shown in the photograph here.

In addition to the robotics teams, the complex also includes 3D printers that enable learning of one of the leading technologies of the 21st century. The space includes workshops in the fields of mechanical engineering and electronics.

Teacher professional development

The principal recognises how difficult it is to integrate technology into the teaching environment for the first time. Most teachers are not trained to use ICT in their teaching, so when they start they need support. To facilitate this support, the school has hired some experts in various fields and each faculty is assigned an expert. Together they brainstorm, discuss and build units of work using the optimal digital tools in order to enhance the learning experience. Each member of the faculty employs the new techniques and provides feedback. The expert also observes lessons and gives additional feedback. The experts are paid from the proceeds of hiring out the school facilities to external users. Although this is an expensive undertaking, it is seen as a worthwhile upfront investment from which current teachers will grow in confidence and become mentors to new teachers.

Technology use across the curriculum

The school is completely digital and paperless. Teachers and students access everything through the Moodle Platform or the web. Students are allowed to bring smartphones to class but can only use them when applicable for the lesson.

Computer science is taught as an elective to senior students and it is very popular. For students who are studying the curriculum and are undertaking a project, a double credit is granted.

The school is involved in a pilot alternative assessment project to replace history matriculation through an ePortfolio that students develop throughout the year. Tichonet is the only school in which every class is involved; other schools have only one class. Next year civic studies, bible studies and literature may be added.