Online Academy Leads to Change in Schools: Integration of Learning Technologies in the Multi-Cultural Context

Miki Kritz

Founders of TEC Center: Dr. Miri Shonfeld, Dr. Elaine Hoter, Dr. Asmaa Ganaim

The Ministry of Education invests extensive resources in integrating information and communication technology (ICT), however pre-service teachers do not gain hands-on experience in ICT integration during their practical training. As part of the collaboration between the Kibbutzim College of Education and the field, within the framework of the activities of the TEC Center for Technology, Education and Cultural Diversity, and following study results, it was decided to train teachers in preparation for an ICT project in their school. In the first year of the project the aim was to strengthen teachers’ ICT skills, laying the groundwork for an ICT project in the second year with their 4th grade pupils and children from an Arab school. Other TEC Center programs are also described with a focus on connecting different sectors of Israeli society using the Internet.

Dr. Miki Kritz coordinates synchronous learning in the Online Academy of the International Channel and is also the coordinator of the Unit for Online Teaching and Learning Environments and the Center for Technology and Cultural Diversity at the Mofet Institute. He is an academic-technological advisor at the Kibbutzim College of Education and lectures on the topic of ICT in teacher education. Dr. Kritz has published three books on Internet topics as well as many articles on progressive education and Kibbutz education. Miki_kri@smkb.ac.il
Study of Akko-Holon Project

Online teaching has become an integral part of higher education and learning in general but is usually overlooked when it comes to schools. Lecturers and students in Education colleges are not suitably trained nor do they gain experience prior to the higher education stage, something that would enable them to engage in and even promote online teaching in schools. Students from the Kibbutzim College of Education were trained in ICT integration in preparation for pre-service training in an elementary school in the city of Holon, a school in which ICT is not integrated into teaching and learning. Studies indicate that lack of ICT integration in teaching activities and the curriculum is common in many schools and even in education colleges (Goldstein et al., 2011).

On the backdrop of this situation, and as part of the collaboration between the Kibbutzim College of Education the field and the activities of the TEC Center - Center for Technology, Education and Cultural Diversity (located in Mofet Center and Kibbutzim College), and in light of the above-mentioned studies, it was decided to integrate ICT in a school where pre-service teachers undergo their practicum. The aim of the project was to strengthen the teachers’ ICT skills in preparation for the integration of ICT in teaching in the aim of using it to foster learning communication with an Arab school in Akko. The Kibbutzim College advisor (the author of this paper) attended all meetings and assisted the teachers by offering instruction and training. The pupils from both schools were divided into mixed groups (Arabs and Jews, Religious and secular), participated in ICT activities to enhance acquaintance and cooperation between group members and performed ICT-based investigation activities in a joint Wiki website: http://tak-wiki.macam.ac.il (Kritz and Shonfeld, 2010).
**Accumulated Knowledge and Experience Regarding ICT Integration in Teaching**

The Ministry of Education has invested extensive resources in the technological and pedagogical aspects of ICT integration (Harari Report, 1992; Melamed, 2000) based on the premise that technology integration requires the use of new pedagogical paradigms and different types of teaching that shifts the teacher’s role to group leader and places the responsibility for learning on pupil (Kagima & Hausafus, 2001; Law, Pelgrum & Plomp, 2008; UNESCO, 2008). In this context it was found that pre-service teachers do not gain ICT integration experience as part of their practicum in schools (Shonfeld & Zelkovitz, 2010) and therefore do not implement ICT integration as teachers (Lan, 2001; Bay & Lehman, 2003).

Many factors accelerate the use of technology: accessible connectivity, ICT expertise, technological constructivism (activating pupils to use technology), workshop participation, extensive informal relationships between peers and finally involvement in professional leadership activities (Becker, 1999). To encourage teachers to integrate ICT in teaching institutional support, advancement opportunities and awards are important (Kagima & Hausafus, 2001) as well as expanded advancement opportunities following participation in professional development activities (Teclehaimanot & Lamb, 2005). Professional development is an accepted way to develop the professional knowledge of veteran teachers (Guskey & Huberman, 1995).

Computer technology integration in schools as an issue can be placed within the broader context of new technology integration in education in general. Moersch (1995) divides technology integration in education into seven levels: nonuse, awareness, exploration, infusion, integration, expansion and refinement. Several changes can be found in the teaching curriculum as teachers move from one level to the next. Teaching focus
shifts gradually from the teacher in the center to the pupil as the focal point. Pupils use the computer as a tool to support understanding of basic concepts, topics and processes and to expand their knowledge using databases, communication, multimedia, electronic spreadsheets and graphic applications. Traditional verbal activities are gradually replaced by practical authentic investigation related to the problem or topic being studied.

Another model of computer technology implementation in teaching was designed as part of a multi-year study of the ACOT (Apple Classroom of Tomorrow) Project that trained teachers to integrate computer technologies in a computer rich environment in the United States. The model delineates five stages, in the following order: entry, adoption, adaptation, appropriation and invention (Dwyer, Ringstaff & Sandholtz, 1991). These stages were also studied in teaching colleges in Israel, and findings indicated that lecturers are in the middle stages, particularly adoption and adaptation (Shonfeld & Zelkovitch, 2009).

**Project Summary**

The study refers to a technology integration project conducted by the Online Academy in an elementary school in Holon. The goal of the project was, as stated, to strengthen ICT skills in the school followed by a multi-cultural learning project with an Arab school in the city of Akko. Study participants (N=19) who participated in professional development training filled questionnaires in which they were asked to indicate their impression of various training aspects and their impact on them and the school (on a scale of 1-5 as well as a free text element). Questionnaire reliability was found to be high. An assessment conducted at the end of the first year of the project showed that participants acquired ICT skills and used them to learn how to create ICT-based activities for their
pupils. The training also contributed to the atmosphere among school staff. However, pre-service teachers were not properly integrated into the process because ICT pedagogical training was inadequate. These finding are compatible with a Network study initiated and sponsored by the Research Authority at the MOFET Institute, an intercollegiate center for the professional development of teacher educators in Israel. The study recommended increased ICT training of pre-service teachers’ in their practicum stage (Goldstein, 2011).

The integration of technology requires new pedagogical paradigms and a different teaching format that shifts the teacher’s role to that of group leader and transfers learning responsibility to the pupil (Pelgrum & Plomp, 2008; Kagima & Hausafus, 2001; UNESCO, 2008). The experience in school contributes to pre-service teachers. Their lecturers train their professional development teachers who in turn train them as they gain experience in an ICT environment during their teaching practicum.

The ICT integration model that was implemented in the school as part of the project encouraged teachers to integrate ITC in their teaching and provided institutional support (Kagima & Hausafus, 2001) as well as increased opportunities to foster ICT integration after their participation in professional training activities (Teclehaimanot & Lamb, 2005).

However, it seems that the pedagogy is incompatible with infrastructure level. The problems centered on the availability of adequate conditions for ICT-based teaching and learning: an Internet connection, laboratory availability, a large number of pupils in a class and the availability of a computer/communication technician. The findings are compatible with research conducted in colleges of education in Israel (Goldstein, 2009) which found that their students do not have many opportunities for ICT integration in school, and one reason is inadequate infrastructure.
With respect to the professional development training format, it was requested that training be conducted individually and in small groups comprised of teachers of a specific grade (for example all 4th grade teachers). Teachers that participated in the training consulted with the training instructor and asked for his or her support. This finding is also compatible with studies showing that a personal trainer is preferable to group training (Teclehaimanot & Lamb, 2005; Sahin & Thompson, 2008).

The findings also show that younger teachers with less seniority progressed more than others in the program. On the other hand satisfaction was higher the greater the seniority. This finding differs from that of Pollak, Shonfeld and Zelkovitz (2009) whose study of teacher educators did not find differences in ICT integration by age or seniority. The differences may be attributed to the fact that the younger teachers were in their 20’s, while younger teacher educators teaching in education colleges were in their 40’s.

In summarizing the success of ITC integration in schools, and using Moersch’s categories (1995), it appears that project participants moved from ‘nonuse’ to ‘integration’, yet did not yet reach the highest level in which traditional verbal activities are gradually replaced by practical authentic investigations related to a problem or topic being studied. Studies show that even in teaching colleges ITC is not an integral part of teaching for many on the teaching faculty or a part of the organization and culture of the institution (Waldman, 2007; Pollak, Shonfeld and Zelkovitz, 2008). As in the college so (and especially) in the school - resources and time are needed. Additional ITC integration projects in collaborations between academia and the field will advance the education system to the 21st century.
**Amirim Project – ICT for Outstanding Pupils**

Following the Akko-Holon project, the TEC Center conducted a larger and more ambitious program through the “Amirim” program for exceptional students managed by the Gifted Education Division in the Ministry of Education, and with the Division’s support.

Exceptional pupils from nine schools in an online gathering with Israeli female Judo champions and running a marathon

The Amirim project is an ICT program with the participation of about 150 fifth and sixth grade pupils, nine teachers and three group leaders in nine schools, three from each sector: Jewish religious and Arab. Cooperation with the Gifted Education Division enabled the TEC Center to implement, for the first time, a multi-cultural technological project in schools based on the model developed in the Center (see below about the OICH model).

Project group facilitators, hailing from three different cultures and experienced in TEC activities (senior lecturers from teaching colleges), accompany the teachers and train them to teach their pupils how to use ICT technologies: social networks, online discussions, collaborative learning, making podcasts, games and digital short films, performing ICT-based learning activities, etc. The pupils work collaboratively with pupils from schools in the other sectors using synchronous and asynchronous tools.
In the synchronous framework the pupils meet online with a famous figure regarded favorably by all three sectors. After one year of online activity, a gathering was held at the Children’s Museum in Holon that included joint activities and summarized the project. This was the pupils’ first face to face meeting, although they knew each other through their collaborative Internet activity.

**Advanced Teaching Environments Program for Education College Students**

The TEC Center gained the knowledge and experience to implement projects in schools from its involvement in education colleges. The Center has operated the ‘advanced teaching environments’ project since 2006, with the participation of more than 100 students and nine lecturers from nine education colleges annually (three lecturers from every population sector mentioned above).

**Students from different sectors collaborating in a multi-cultural technological project**

The students study online using synchronous and asynchronous tools, in mixed and multi-culture groups, collaboratively creating teaching and learning material and acquiring practical experience in advanced teaching environments based on the TEC idea, rationale and model that begins with lecturers in education colleges and continues to
pre-service teachers, school teachers and school pupils, as described in the abovementioned projects.

Spearhead multi-cultural links between children

Intercollegiate online courses

Create a positive experience for students regarding inter-cultural technological liaisons

Collaboration – Joint research, courses and initiatives

Links between teaching faculty

TEC Center development stages

The Idea behind the TEC Center for Technology, Education and Cultural Diversity

The common denominator of all the projects reviewed above is that they are TEC Center projects and based on activities conducted in advanced technological environments to foster learning and discussion between groups of lecturers, students in education colleges and pupils in schools from different cultures in Israeli society: religious, secular, Jews and Arabs. The activities include conferences, courses and workshops held in a technological environment through collaborative learning, while developing multi-cultural projects and study units.

Advanced technologies such as blogs, Wiki, social networks and virtual worlds are used in the learning process. Courses are compatible with the model developed by TEC Center managers (OICH), a model based on gradual development of the relationship between the
participants: from textual communication to audial, followed by the online visual dimension, and finally a face to face meeting.

**Project Rationale and Model**

We live in a world characterized by rapid and borderless changes and connections, so much so that it is becoming one global village. At the same time, national, cultural, religious and ethnic sentiment grows stronger. These phenomena create opposing trends. Education institutions in Israel belong to different cultures and school systems. Their graduates, future citizens and teachers, will find themselves in information-rich environments facing frequent change, and in a pluralistic society that underscores the cultural uniqueness of every community. Inter-cultural knowledge and discussion is vital in order to deepen knowledge and mutual respect in the aim of creating a more enlightened future for humanity.

Technological reality in the 21st century offers members of various cultures the ability to communicate between them, enhancing acquaintance with the culture of the ‘Other’ in order to identify shared universal values alongside the unique values of every culture and to develop a broad discussion based on mutual respect – needed in a multi-cultural society such as the one we have in Israel. Herein lies the need for a series of multi-cultural activities to foster engagement and a productive discourse. This activity, including its value-based aspect, offers the opportunity to showcase and implement technologies that can be integrated into teaching (Shonfeld, 2005).

Online learning allows students to connect without being influenced by stereotyping triggered by appearance. Therefore, the online framework allows for communication and the creation of relationships, but this is insufficient to resolve complex conflicts (Mayer, 2000). In order to
build trust we need equality between participants, collaboration and not competition, contact over a long period of time, institutional support and connection between groups and not individuals (Pettigrew and Tropp, 2000).

The OICH model (Online Inter-Group Contact Hypothesis) which is at the basis of TEC Center activities was developed by TEC founders and is compatible with contact theory. However it adds another element - gradual development of communication and strengthening trust between the groups as their online work together evolves (Hoter, Shonfeld and Ganaim, 2009).

**Vision and Future Plans**

The TEC Center currently operates eighteen education centers: nine teaching colleges and nine schools, dispersed throughout the country. Our goal is to reach several hundred in order to create a critical mass necessary to bring about change. The Center plans to lead the development and assimilation of multi-cultural projects and activities that integrate ITC
technologies among teacher educators, pre-service teachers and pupils. These projects will enhance multi-cultural tolerance in society and the community through the education system. Lecturers, students and pupils, citizens of Israel, will create a learning community and technological literacy and collaborative learning will facilitate its integration in the global world. Members of the community will become acquainted with and respect each other’s culture. This will engender fruitful discussion and engagement while recognizing and valuing diversity as well as universal and unique values found in every culture.

Schools and teaching colleges participating in TEC Center activities
Bibliography


IRRODL, 10 (2).


