Palestinian Ministry of Education and Higher Education

MOEHE Policy papers
December 2015

#2 Policy Paper on Digital Educational Resources (DER)

The Palestinian Authority with support from the Belgian Development Cooperation implemented from 2011 till 2015 the project "E-learning Curriculum in Primary and Secondary Education" in several hundred Palestinian schools. The aim of the project was to utilize ICTs in school education in order to enhance student-centred learning and stimulate 21st Century Skills in Palestine.

An Intervention Action Research was conducted in 2014-15 with the main aim to provide upstream policy advice to the Ministry of Education and Higher Education towards improving and advancing E-learning resources and practices for teachers, students and families. The Action Research was assigned to a consortium of the Open University of Cyprus and the Al-Quds Open University which produced the following Policy Papers:

0. Policy Paper on Information and Communication Technology in Education (ICTE)
1. Policy Paper on School-led Initiatives (SLI)
2. **Policy Paper on Digital Educational Resources (DER)**
3. Policy Paper on mobile Learning (m-L)
4. Policy Paper on Teacher Professional Learning (TPL)
5. Policy Paper on 21st Century Skills (21CS)

The policy papers are based on a "Most Significant Change" study from over a hundred school communities (teachers, students, headmasters, parents, administrators) that participated in the e-Learning project, on two 4-month long Action Research projects in two sets of ten schools, on extensive discussions and feedback from supervisors and MoEHE staff, and detailed review by the staff from the Belgian Development Agency. A two-day seminar was held by MoEHE in April 2015 in Jericho in which initial versions of the papers were presented and reviewed by policy makers and practitioners. Thus, although the authors of the papers have full responsibility, they cannot take full credit. In December 2015 the results were presented and discussed publicly in Ramallah.

Each policy paper includes a subject definition, followed by objectives of the policy under discussion, continuing with policy issues, questions and decisions to be made; related challenges, risks and opportunities are outlined and the relation to the curriculum is highlighted, concluding with Policy Recommendations. The main detailed part is prefaced by a single-page outline.

The purpose of the six policy papers, to be used in combination, is to provide policy advice to the Palestinian Ministry of Education and Higher Education given its strategy, as specifically expressed:

- "the shift from teacher to student-centred learning, considering that frontal teaching, lecturing and rote learning are still the predominant methods of teaching in Palestine" (cf. MoEHE, 2008a, 34; MoEHE, 2008b, 8; PEI, 2009, 14)
- "… that ICT in education plays an important role as an enabler for promoting pedagogical innovation and developing the quality of teaching and learning. … ICT may be an effective tool for learning or part of a learning environment designed to achieve specific learning objectives, often not related to ICT content" (Strategic framework of the Palestinian Education Initiative)
- "… special focus on quality improvement in learning environments and students acquiring the so called 21th Century skills" (ToR of the Action Research)

This series of Policy Papers was produced in 2015 by a team of educators from the Open University of Cyprus, Al-Quds Open University, the Belgian Development Agency (BTC) and the Ministry of Education and Higher Education of Palestine coordinated by Thanasis Hadzilacos, Professor of Educational Technology at the Open University of Cyprus.

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"Technology can amplify great teaching but cannot replace poor teaching.

Not a magic bullet to improve learning, it can play a role if applied better in the classroom; of little help in bridging the skills divide between advantaged and disadvantaged."

(From the OECD study, 2015)

The opinions expressed in this document represent the authors' points of view which are not necessarily shared by the Belgian Development Agency (BTC) or by the authorities of the countries concerned. They include comments by the Palestinian colleagues from MoEHE and QOU after the Jericho meeting, April 2015. At all our visits we experienced a warm welcome from the people involved in supporting the educational process at primary and secondary schools in Palestine.

Information and Communication Technologies for Education (ICT@E) Policy Recommendations for

Digital Educational Resources (DER) and the Curriculum

This page outlines the main policy recommendations for producing and utilizing DER in Palestinian schools. It includes objectives, related policy issues, challenges and opportunities. DER refers to Digital (Electronic) Educational Resources utilising ICT and their relation to the curriculum. 'Resources' include Environments, Services, Tools, Learning Objects, Software, Activities, and Lesson Plans.

If ICT@E were cooking and the Curriculum eating, DER would be the ingredients.

Objectives for DER: Availability, Utilization, Production, Reform

1. Availability of DER suitable for the curriculum (a Palestinian repository of open DER)
2. Extensive and regular DER utilization towards acquisition of 21st century skills
3. Palestinian DER production
4. DERs as an opportunity to reform the curriculum

Policy issues, decisions and questions related to DER

PR 1. Setting the priorities

PR 2. Motivating teachers

PR 3. Open vs. Proprietary

PR 4. Coordinating with curriculum, training and infrastructure

Challenges, Risks and Opportunities related to DER

C1. Coping with constant technological development
C2. Ensuring Internet safety
C3. Adaptive teaching – personalised learning.
C4. Participation in the international scene

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PR 5. Internet safety

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PR 7. Technological developments

Digital Educational Resources (DER) and the Curriculum

This DER policy paper deals with the subject of production of Digital (Electronic) Educational Resources and their utilization in Palestinian schools in relation to the curriculum. DER (or 'Resources') include Environments, Services, Tools, Learning Objects, subject-specific or skill-specific educational Software, Educational Activities (Scenarios), and Lesson Plans.

If ICT@E were cooking and the Curriculum eating, DER would be the ingredients.

Objectives of the MoEHE Policy for Digital Educational Resources (DER)

Availability, Utilization, Production, Reform

1. **Availability of DER suitable for the curriculum (a Palestinian repository of open DER)**

   There is an abundance of DER in the World-wide Web, most of them available free of charge; however they have not been designed for the Palestinian educational system: they need customization, localization, adaptation and evaluation in practice. The first important objective of the MoEHE DER policy is to have good quality DER, suitable for the Palestinian schools, in the form of a Palestinian repository of open DER.

2. **Extensive and regular DER utilization towards acquisition of 21st century skills**

   Simple use of DER in school education is not enough and it may be counterproductive[1]. DER do not necessarily serve the curriculum or the learning goals set in MoEHE strategy. Techznology by itself is pedagogically neutral: it may or may not advance active student-centred learning. Using learning objects as an exceptional, demonstration-like activity will not advance 21CS. Therefore, a second objective of the MoEHE DER policy is to utilize DER extensively and regularly in schools, in ways that serve the mainstream curriculum towards acquisition of 21st century skills.

3. **Palestinian DER production**

   It is important for Palestinian education not to be just a 'consumer', simply a user of DER. I must also actively participate in the international DER production. This is a realistic objective if MoEHE manages to rally Universities and other research organizations, companies, educators and students for the design and development of DER, with priority and focus on Learning Activities and Objects (content) for the Palestinian educational system.

4. **DERs as an opportunity to reform the curriculum**

   Student-centred learning and 21st century skills call for curriculum reform (see Policy Paper #5). Although DER utilisation does not guarantee either curriculum reform or active learning, it can be an opportunity to reform the curriculum in this direction. This is the fourth objective of MoEHE regarding DER.

Related Policy issues, decisions, questions

PR 1. **Setting the priorities**

In terms of DER the needs of the Palestinian educational system are not smaller than the needs of much larger and richer countries. This raises the issue of priorities: which DER to use from the international library and which to develop in Palestine. DER development is a good opportunity for Palestine to participate in the international and the Arab division of intellectual production. Designing and producing DER in the form of Internet Services, of general purpose Educational Software and of Tools or Digital Environments requires a long time and a lot of human and technological resources. In order to have tangible results in reasonable time, MoEHE efforts must be prioritized and focused. Educational Activities (scenarios of use) and digital content are a good starting point.

1 See the OECD study "Student, Computres and Learning, Making the Connection" in "New approach needed to deliver on technology's potential in schools"

PR 2. Motivating teachers

Teachers can participate in DER production in several roles: in the stage of requirement analysis they can spot the areas of learning difficulties and corresponding goals in which the DER should aim. They can participate in design and development teams. They are an indispensable part of the DER assessment and evaluation process. Hence, teachers are an excellent resource for DER production. For that they need guidance, training, motivation and support. MoEHE policy must provide the framework for all these, in order for teachers to contribute and benefit by making the MoEHE portal an actively used Learning Object Repository.

PR 3. Open vs. Proprietary

Many DER are available 'openly' for free, usually allowing modifications; others are only available to paying users; some offer a basic functionality for free and charge for additional features. The policy issue is the choice between commercial, or proprietary, DER and those available open-source, with a Creative Commons licence, known as OERs (Open Educational Resources). The decision should take into account the current (initial) stage of DER utilization in Palestinian schools, the priorities of Palestinian education within a very restricted budget, and the fact that expensive DER are not always available in Arabic. Respect for Intellectual Property Rights is another area in which MoEHE policy is required.

PR 4. Coordinating with curriculum, training and infrastructure

If DER do not conform to the curriculum they will not be used in the large scale –they will only be used by few teachers. If DER conform to the existing curriculum they will not promote active, student-centred learning and the 21st century skills (21CS). The solution of the dilemma is for DER to be designed for 21CS and the curriculum to be reformed in parallel. This will be a long-term process, no less than ten years, probably more. For the widespread application, DER development must be coordinated with teacher professional learning (Policy Paper #4) and school infrastructure deployment (Policy Papers #0 and #3); these are also long-term processes which are impossible to coordinate in a strict manner. Policies for this, loose, coordination are needed.

Challenges, Risks and Opportunities related to DER

C1. Coping with constant technological development

DER exploit the affordances of new technological developments, but school infrastructure does not follow on the same pace, if at all. Often new versions of software or learning objects require enhanced infrastructure which schools do not have. A specific policy must be designed for this (see Policy Paper #0, on ICT@E).

Constant technological developments are an opportunity and a challenge for all school systems. In particular new versions of software and learning objects, which require enhanced infrastructure, often create situations of inequality among schools.

C2. Ensuring Internet safety

Internet safety is a major concern for all users and especially for students. As ICT infrastructure available to students at home is often better than the one at schools, schools should focus on the educational quality of use of the available infrastructure. Similarly the students are often technically more competent users of ICT than their teachers; so teachers should focus on wiser usage. Ensuring Internet safety, ethical usage of digital services, and wise usage for all includes several policy decisions for MoEHE. Restricting or forbidding usage does not produce educated citizens. The related 21st century skill is Citizenship.

C3. Adaptive Teaching – Personalised learning

DER provide an opportunity for Adaptive Teaching, i.e. teaching that provides and supports personalised learning according to the needs and capabilities of individual students or groups of students.

C4. Participation in the international scene

DERs provide an excellent and rare opportunity for Palestinian participation in the international scene. Palestine in this area can be innovative and produce not just its own DER but also produce DER that will be used widely in the Arab and international education.

Policy Recommendations

PR 1. A department for DER with 25% of the ICT@E budget

Establish a permanent structure ('department', or 'office') for DER, as part of the Palestinian Institute for Educational Technology (see Policy Paper #0 on ICT@E). Assign 25% of the budget spent each year on ICT@E for DER design and development (see PR 3 "Production and availability" below).

This department for DER will be responsible for the following, in coordination with other departments in the Institute for Educational Technology and the MoEHE:

a. The repository of DER at the MoEHE portal, which must be technically upgraded and supported with experienced technical staff.
b. Managing (not doing) the design, development and evaluation of DER, with the following focus and priorities: First activities then content (learning objects), then environments, then tools and finally educational internet services. This will be done mainly by outsourcing the budget available to Universities, research organizations, companies and individual teachers. Continuity is vital because this budget translates mainly into people salaries, especially in Universities, Research Organizations and Companies. Work by teachers is more flexible, since they are with MoEHE permanently. Note, as a side effect, that such use of monetary resources has a positive impact on the Palestinian economy, as opposed to just buying from abroad.
c. Coordinating new DER production with Curriculum reform. (See PR 6 below)
d. DER Quality: Chosen DERs must integrate technology with pedagogy; they must be explicit about active student-centred learning and cultivating 21st Century skills.
e. DER utilization at schools: Ensure that teachers and schools utilize the DER in the portal. This is done through the Supervisor Department, School Principals, online communities of teachers and students (portal) and through Repositories of Learning Objects. Includes the long term Monitoring and evaluation of the usability of DER in the portal.
f. Organize Design and Action Research in schools based on utilization of selected DER in cooperation with Universities.
g. Draw conclusions from Learning Activities and submit them to MoEHE in the form of recommendations for curriculum changes and new activities.

PR 2. Priorities, Openness and Globalization

Many DER are available for free; others are only available to paying users; some offer a basic functionality for free and charge for additional features. Given the current (initial) stage of DER utilization in Palestinian schools, the priorities of Palestinian education within a very restricted budget, and the fact that expensive DER are not always available in Arabic, MoEHE should focus on Open-source software, learning objects available under Creative Commons licence, and Open Educational Resources (OER).

Palestine and especially its schools should be a land where Intellectual Property is respected. Schools, teachers and students should be discouraged from stealing in the digital world as part of their ethical education (see Policy Paper #5 on 21CS). If a decision is made to use a DER which is not freely available, then MoEHE should obtain the respective country-wide licence at special, possibly symbolic, prices.

Establish policy and guidelines for localization of international OER:

Localization is much more than language translation. It involves cultural elements from the obvious (an English driving education software has cars moving on the left) to the subtle (an American picture implying multiculturalism has a white girl, a Chinese boy and a black adolescent; what is the

Setting the priorities for Palestinian DER development

- Start with ICT-enhanced educational activities embedded in a reformed curriculum for 21CS and Focus on Openness quality and adherence to the learning goals (21CS).
- Adopt Open Source and Creative Commons as MoEHE Policy.
- Avoid using proprietary commercial software where possible.
- Obtain country-wide licenses for free or symbolic prices through special agreements.
- Encourage international collaboration by Universities producing DER and by the DER department of the Palestinian Institute for ICT@E.
- Localize international Open Educational Resources (OER) for environments and tools.

corresponding picture for Palestine?). Music, colours, places convey different sublime messages in each country.

Where to focus?

First activities (educational scenarios)

› then content

› then environments

› then tools

› then internet services

PR 3. **Production and availability: a Palestinian repository**

Availability of DER suitable for the curriculum (a Palestinian repository of open DER): Adopt, adapt, design & produce suitable DERs by teachers as innovative designers, producers and users. Participation in the international scene - be innovative and produce Palestinian own learning objects and make them available internationally through Creative commons. Encourage international collaboration with corresponding institutions. Promote Palestinian DER production.

Adopt, adapt, design & produce suitable DERs by teachers as innovative designers, producers and users

- Adoption implies selection from a very large number and ensuing evaluation.
- Adaptation (localization and customization) requires understanding of Palestinian needs.
- Suitability must be coordinated with curriculum reform.
- Teachers will need motivation, training, guidance and support policies.

Unlike the production of school textbooks which is centrally controlled, the production of DER is by the nature of ICT distributed. Almost all the best international DER are the product of initiatives of independent researchers (Geogebra, Moodle, Scratch, etc.). Very few, if any, have been produced by Ministries of Education. The role of the DER Department of the Institute for ICT@E will be to motivate and coordinate the production of Palestinian DER; other related MoEHE Departments, especially the Supervisors and the Curriculum, should closely cooperate.

PR 4. **Teacher involvement**

Provide support for teachers developing DER and. Motivating teachers. The overall policy is "Recognize, Reward, and Request" (see Policy Paper #4 on Teacher Professional Learning (TPL)).

Teachers who produce DER should be motivated and supported; teachers who furthermore produce good (evaluated) DER should be rewarded, as they would be if they were authoring part of a school textbook. Teachers who utilize DER should have moral recognition and extra time, at least at the beginning, because integration of DER in their teaching demands extra work at home and at school. This could be in the form of reduced teaching load, of taking into account this work in their teacher professional evaluation, and of other resource availability (e.g. tablets for teachers).

Support for teachers developing DER includes guidance through specific Professional Learning; moral and material rewards for successful DER design and development; Technical and educational support for the design, development and testing in school (Action research).

Organize a yearly conference in which Palestinian DER will be presented to the educational community. Issue a yearly booklet promoting the new good Palestinian DER; although it seems contradictory to promote digital material in paper, we must remember that the prime target is good teachers who have not been attracted to ICT yet and who are best reached through traditional media. Award several prizes to teachers, Universities and Companies for good (evaluated) Palestinian DER.

PR 5. **Internet safety**

Policy for Internet safety is also a subject of Policy Papers #0 (ICT@E) and #3 (m-learning). MoEHE should study the experience of the EU Safe Internet programs and where possible participate in them. A similar program for Palestine should be launched.

PR 6. **Coordination and reform**

Policies are needed to serve the following general strategy of MoEHE for ICT@E:

- Technology in school serves the curriculum -not the other way around.
- Technology should be integrated in the curriculum –it should not constitute an extra-curricular, nice but not necessary activity.
- Technology offers a double opportunity to reform the curriculum. One is because technology allows doing what is already in the overall strategy of MoEHE but is very difficult without ICT, namely active, student-centred learning, directed towards 21st century skills. Second is because although the real reason for the reform is pedagogy, not technology, changes in the name of technology can often be more acceptable than changes in the name of pedagogy. Thus DER designed and developed is not to follow the technology, but to use it as an 'excuse' for reform.

Therefore, DER production should be coordinated with a reformed curriculum:

- Design learning activities (and other related DER) in order to serve the overall goals of the curriculum but not in order to mimic the current implementation of the curriculum.
- Take advantage of ICT to reform the curriculum in the direction of 21st C skills (not the direction of ICT)
- Justify ICT@E investments (money-effort) educationally, not technologically.

All good curricula are evolving. The Palestinian school curriculum in particular needs reform in order to serve the MoEHE strategic plan. The production of new Digital Educational Resources should be coordinated with the curriculum reform: new DER should not serve the existing but the planned curriculum, before it is implemented in schools. As new textbooks are being designed and written, the Palestinian DER repository should be enriched with Learning Objects and Learning Activities for the new plan. Student-centred Learning Activities promoting 21st Century Skills should be designed as part of the new curriculum and activities with ICT with the corresponding Learning Objects implemented.

Announce yearly open competitive calls for 1-2 year-long DER design and development projects in which Universities, research organizations, companies, schools and individual teachers can participate. Application in school and evaluation of didactic effectiveness (in the form of action research) are an integral part of such calls.

Reform, Coordinate, Utilize

- Use DERs as an opportunity to reform the curriculum in parallel with DER production.
- Coordinate DER development with teacher training and school infrastructure.
- Ensure extensive and regular DER utilization towards acquisition of 21st century skills.
- Design DER for adaptive teaching and personalised learning.

PR 7. **Technological developments**

This Policy Recommendation is related to Policy Issue 1 at Policy Paper #3 (m-learning) about coping with fast and constant technological developments. From the point of view of Educational resources the main recommendation it to accept the fact that schools will not have the same infrastructure and will not have the same DERs available. Remember that it is the pedagogy and not the technology that really matters and that the previous version of a piece of software is not educationally outdated.