

Evaluation of the Jordan Education Initiative



COMPREHENSIVE EVALUATION DESIGN

Submitted to:
USAID/Jordan

Submitted by:
Education Development Center, Inc.

in collaboration with:
RTI International
World Links Arab Region

September 14, 2007

INTRODUCTION

The Jordan Education Initiative was established to fulfill a key role in Jordan's educational transformation. To support the Ministry of Education's (MOE) own curricula reform process, Education Reform for the Knowledge Economy (ERfKE), the Jordanian Education Initiative (JEI) was established as a test bed for the introduction of information and communication technologies (ICT) and e-learning resources into Jordanian classrooms that could support innovative teaching practice. The JEI is being implemented in 100 Discovery Schools located in Amman.

Education Development Center, Inc. (EDC), and its partners, RTI International and World Links Arab Region (WLAR), have been contracted to perform an evaluation of the JEI. This evaluation design details the plans for the four tasks that will comprise the evaluation: Task One, assess the impact of the JEI on teaching and learning in the discovery schools; Task Two, review the JEI public-private partnership model; Task Three, review the technology infrastructure and delivery system; and Task Four, investigate the projected total costs that ICT-enabled instruction will entail over time.

Between June 30 and July 15, 2007, the EDC and RTI team leaders visited Jordan to conduct initial meetings with JEI and Jordanian partners, review the JEI activities to date, and obtain documentation relevant to the evaluation. The results of that trip are reflected in the following evaluation design.

TASK ONE: THE IMPACT OF THE JEI ON TEACHING AND LEARNING IN THE DISCOVERY SCHOOLS

The goal of Task One of the JEI evaluation is to examine the extent to which a new learning paradigm is emerging in the Discovery Schools and to understand the factors that have facilitated these changes or hindered teachers' ability to transform the learning environment.

The research on educational technology integration shows that the introduction of ICTs alone cannot transform the teaching and learning environment. Teachers need to know how to structure the curriculum, select resources, guide activities, and support this learning process, tasks that many traditionally-trained teachers are not prepared to take on. As Bransford, Brown, & Cocking¹ point out, to use technology effectively, the pedagogical paradigm needs to shift toward more student-centered learning, and this shift is not trivial or easily accomplished, particularly in countries with teacher-centered educational traditions. The guiding concern of the various stakeholders: the JEI, the MOE and the Office of Her Majesty the Queen Rania; is to better understand how the JEI has helped foster the emergence of a new paradigm in the Discovery Schools and what the unresolved challenges have been.

¹ Bransford, J. D., Brown, A. L., & Cocking, R. R. (Eds.). (1999). *How People Learn: Brain, Mind, Experience, and School*. Washington, DC: National Research Council/ National Academy Press.

To address these concerns, the evaluation plan will be designed around three central research inquiries for Task One:

1. Are there aspects of a new learning paradigm emerging in the JEI schools? What does this new paradigm look like? What does it mean for how teachers teach and how students learn? What has the JEI brought to this evolving paradigm?
2. What are the conditions supporting this new paradigm? And, what are the challenges and impediments?
3. What role do the ICT resources and e-content, provided through the JEI, play in promoting this paradigm? What is the role of e-learning in Jordanian classrooms?

The evaluation design has four components:

- I. review of existing research on the JEI;
- II. an examination of the Trends in International Mathematics and Science Study (TIMSS) 2006 results for Discovery Schools and the other schools in the Kingdom;
- III. in-depth case studies of 10 examples of successful schools; and
- IV. a survey study of the case study schools and 10 randomly selected additional Discovery Schools.

New data will be collected for the case studies and the survey study.

I. REVIEW OF EXISTING RESEARCH

The review of existing evaluation reports and test data are part of understanding the context and the impact of the JEI activities on teaching and learning in Discovery Schools. This understanding will help to better examine how this experience can be improved upon and extended beyond the current schools. EDC will review the following studies/reports to offer a summation of what is known to date about the JEI.

- Jordan JEI Project: A baseline report prepared for the British Council in Amman (2006)
- Evaluation of the Discovery Schools Experiment, National Center for Human Resource Development (2006)
- The Effects of Teaching: e- Math on the Learning of Students, To Excel Consulting (2007)
- Building Effective Public – Private Partnerships: Lessons Learnt from the Jordan Education Initiative, McKinsey & Company (2005)

II. EXAMINATION OF THE TIMSS 2006 DATA FOR JORDAN

Jordan has just completed data collection for the 2006 TIMSS, and EDC will compare the test results of the Discovery Schools to those of other schools in the Kingdom. However, it needs to be mentioned that it may be too early to see an impact in terms of differences between Discovery schools and the other schools not part of the JEI.

III. CASE STUDIES

New data about the experience of schools under the JEI project will be collected through in-depth case studies of 10 schools. Qualitative research will be conducted in 10 Discovery Schools to understand the process of educational innovation and ICT adoption in Jordanian schools. The case studies will be conducted in two parts:

- 1) In the first part, EDC and WLAR researchers will spend a full day visiting each school to conduct interviews, observations and student focus groups.
- 2) In the second part, MOE and WLAR researchers, with training and support from EDC, will conduct classroom observations in one to two grades per school.

Sampling

The evaluation will use a purposive sampling strategy to identify schools and teachers that are considered to be making progress at changing their learning environments and that best represent what the JEI and MOE would hope to achieve as part of the initiative. Select “best cases” will be used because the objective of this component of the research is to understand the factors and conditions that facilitate or impede change. The sample will be selected in consultation with the JEI staff and will be balanced to represent different grade levels and male and female schools. Discovery Schools will be identified that offer a range of diverse and successful teachers from 3rd to 10th grades.

Part One: Initial Full Day Visits

The initial visits, to be conducted by a research team including international and local educational researchers, will consist of interviews, informal observations and focus groups. The research team will spend an entire day in each school.

Interviews: In each school, interviews will be conducted with the school director, the lab technician, and one to three teachers who are involved in the JEI projects. Additionally, the research team will seek to interview teachers who have not been willing to participate in the technology test beds to better understand the challenges that may prevent teachers from taking on these additional activities.

Focus groups: We propose to do a total of 6 student focus groups for this project across the two older target grades (6th and 10th) divided by gender from successful and struggling Discovery Schools. Focus group is a common collective interview strategy that allows for a more open and relaxed conversation which is particularly effective when working with teenagers. Each focus group will be conducted by two local researchers (one to conduct the focus group and one to take notes). The focus groups will also be conducted during EDC’s two week visit in October. The local research staff will be trained by EDC staff, who will conduct the first two focus groups with translation, and it is expected that the local staff will be able to conduct the remaining four focus groups.

The remainder of the time in each school will be dedicated to observing the school context and the classes to get a sense of each school’s particular environment and teacher- student relationships.

Part Two: Formal Classroom Observations

With training and guidance from EDC, a team of local researchers will observe two classes in each school. Each observation will follow the experience of one group of students over at least three days. Classes who have teachers using e-learning and e-content will be chosen for observation. In order to use staff resources effectively, two classes of students at each school will be observed for 3 hours a day over three days,

scheduling the hours such that all content areas are observed. Following these students over three days, the researchers will be able to see how a number of different teachers teach the same students.

IV. SURVEY

To offer a broader contextual understanding of the JEI experience and to help interpret the case studies, the evaluation design will also include a survey study of teachers, administrators and students. Teachers and administrators, the staff from the 10 case study schools and 10 randomly selected Discovery School will be surveyed during September of 2007. The survey will use some common items from the World Links evaluation survey of 2005. Since the World Links evaluation sample included randomly selected Jordanian schools, the data from the common questions will provide a comparison sample.

Student surveys will be conducted in November and December in the upper grades (9th and 10th) of the case study schools.

V. TENTATIVE SCHEDULE

Teacher and administrator surveys will be administered approximately **September 15, 2007**.

Two EDC staff, in conjunction with bilingual WLAR staff, will conduct **initial school visits** during a two week trip tentatively scheduled for after the Ramadan school holidays, approximately **October 21-November 3, 2007**.

EDC will train field researchers, who will then conduct **classroom observations** from **November 11-23, 2007**.

Student surveys will be administered from **November 25 to 29, 2007**.

VI. DELIVERABLE

The final report for Task One will be completed by January 31, 2008.

TASK TWO: THE JEI MODEL OF PUBLIC-PRIVATE PARTNERSHIP

The Jordan Education Initiative represents a novel approach to creating public-private partnerships in emerging markets to promote social development. JEI is a global-local, public-private partnership that seeks to mobilize private sector capacity and initiative to improve Jordanian education through the integration of information and communications technology (ICT) into classrooms. In 2005, the consulting firm McKinsey & Company conducted a study of the lessons learned to date on the successes and challenges of the JEI as a model of public-private partnership. As a follow up on that study, EDC has been asked by USAID to conduct an interview study of JEI's local and global partners to see if the past three years of working with the private sector can provide guidance to the JEI and the Ministry of Education (MOE) on how to strengthen and continue this partnership into the future.

For Task Two, EDC will conduct interviews (in person or over the telephone) with representatives of key partner organizations of JEI. The interviews will focus on key themes:

1. Vision and goals: their understanding of JEI's goals and objectives, their own organization's goals and expectations for participating in the JEI;
2. Roles and responsibilities: their organization's involvement in the JEI, the definition and assignment of roles and responsibilities among partners, the collaboration across organizations;
3. Activities, outcomes and products: the activities and projects their organization has supported, the products they have created, an assessment as to whether they have met expectations;
4. Benefits and challenges: their notions of the benefits and challenges of participating in the JEI.

I. IDENTIFYING KEY STAKEHOLDERS

EDC will work with the JEI to identify key stakeholders for this study. During the first site visit in June of this year, JEI arranged interviews with eighteen key public and private-sector stakeholders (See Table 1). These stakeholders were interviewed during that visit. EDC will work with JEI to identify another ten stakeholders to interview from the remaining global stakeholders (See Table 2). After the first round of interviews with all selected stakeholders, EDC will conduct follow up interviews, if needed, to clarify any remaining questions or concerns.

II. SCHEDULE

From **September 16-19**, EDC will **finalize list of remaining stakeholders** to be interviewed and **revise the stakeholder interview protocol**.

EDC will conduct initial telephone interviews between **September 19** and **October 19**.

If needed, we will conduct **second interviews** with stakeholders to clarify remaining doubts or gather further information from **November 19 – November 30**.

II. DELIVERABLE

The report for Task Two will be completed by December 31, 2007.

III. STAKEHOLDERS

Table 1: Stakeholders interviewed during the first site visit, June-July 2007.

PRIVATE ORGANIZATIONS		PUBLIC ORGANIZATIONS	
<i>Organization</i>	<i>Name</i>	<i>Organization</i>	<i>Name</i>
USAID	Peter Malnak Maha Sha'er	MOE – ErfKE Director	Mr. Ian McLellan
World Links (NGO)	Hala Taher	MOE	H.E Dr. Tayseer Al-Nahar
Cisco	Othman Suqi	MOE	H.E Dr. Khaled Toukan
e-Dimension	Ms. Luna Katbeh	MOE – ICT Director	Eng. Mazen Amarin
Jordan Telecom	Ms. Khuloud Totah	MOE – Training Dept. Director	Dr. Mohammad Zoubi
Rubicon	Dr. Isam Ayoubi	MOE – Training	Dr. Ahmad Ayasra
Mnhaj	Mr. Ghassan Laham	Curriculum Department - Digitization	Dr. Qasem Moh'd Al-khateeb
ITG	Ms. Batoul Ajlouni	MOE Consultant – e-learning	Dr. Mohammad Majali
HMQ	Hala Lattouf Mary Tadros		
Microsoft	Ms. Razan Fasheh		

Table 2: Remaining Candidates: Pool of Stakeholders to interview

British Council	Vector Capital / Corel Corporation	IBM	Ghazaleh and Company
CADER (ChangeAgent for Arab Development and Education Reform)	Computer Associates	Middle East Partnership Initiative	UNIFEM
Cisco Learning Institute (CLI)	Corning Cable Systems	NetCorps Jordan	Young Entrepreneurs Association / Jordan
Cisco Systems	Dell	Prisma Advertising	
CommercialWare	ElementK / ExecuTrain of Jordan	Relief International / Schools Online	
	HP	Syntax	
		Talal Abu	

NOTES ON TASKS THREE AND FOUR

Several observations resulting from the RTI team leader's July 2007 discussions with the stakeholders affect the priorities for Tasks Three and Four.

- The basic ICT infrastructure and technology available in the Discovery Schools is not significantly different from that provided for all public schools under the ERfKE programs of the Ministry. In particular, the computer labs and training for lab administrators in the Discovery Schools are the same as those provided for other public schools, though the Discovery Schools in many cases have more labs than the average in other schools.
- The connectivity for Discovery Schools – until recently ADSL through Jordan Telcom – is covered by a Ministry agreement covering all schools and are not separately costed or budgeted for the Discovery Schools. Similarly, the availability of broadband connections for most of the Discovery Schools since early 2007 will over time be available for all schools under the National Broadband Network initiative.
- Similarly, the Eduwave portal was developed prior to the JEI, is available to all public schools in Jordan, and access/use is not separately costed or budgeted for the Discovery Schools.
- Additional ICT inputs for the Discovery Schools under JEI have been: a significant number of computers, mainly if not entirely laptops; wireless hubs, switches and access points in most classrooms; a limited number of Computer On Wheels (COW) carts; a limited number of whiteboards; additional training for teachers related to e-learning modules.
- The Discovery Schools are of varying types and levels, complicating comparisons of ICT use across the schools.
- The e-learning modules for different subjects have been developed and rolled out on different schedules, with different degrees of completion, further complicating comparison of ICT use across the schools.
- The JEI staff members (as well as key officials in the Ministry of Education, other observers and partners) already are aware of most of the limitations of JEI including the implementation problems to date. The primary concerns are to document weaknesses and gaps that can be addressed in the process of scaling up JEI-supported e-learning, as well as additional ICT-supported activities that could be considered under ongoing JEI programs.

TASK THREE: THE JEI TECHNOLOGY INFRASTRUCTURE AND DELIVERY SYSTEM

The goal of task three is to assess the Information Technology platform for the JEI Discovery Schools, including hardware, connectivity, software, maintenance and technical support, as well as the functionality of the Eduwave portal in support of e-learning in the Discovery Schools.

I. PRIORITY TASKS:

- Review the existing and planned applications of technology supported by JEI partners, as well as for future partnerships.
- Review the hardware and software requirements for JEI activities, specifically:
 1. Assess the appropriateness of JEI hardware and software currently in use in JEI schools;
 2. Identify weaknesses in software support (e.g. virus protection and other buffering) and inadequacies in availability of technology peripherals (e.g. printers, scanners, storage devices).
- Review the capacity for JEI hardware and infrastructure delivery and management, specifically:
 1. Identify the Ministry units responsible for education technology planning and coordination of JEI activities (primarily MOE, but also supporting centers such as NCHRD and relevant units of the Ministries of ICT and of Planning;
 2. Assess and project the needs for technical support required for installation, maintenance and continued use, including expected needs for upgrading of the hardware and software over time;
 3. Review existing and planned management and logistic support systems for the hardware, including procurement, inventory controls, security and arrangements for monitoring effective use of the hardware;
 3. Assess the mechanisms for on-going planning and scaling of ICT capacities in education, both for classroom and e-learning applications and for support of administrative, EMIS and evaluation functions.
 4. Explore the policy, budget and management implications of utilizing Jordanian private sector to provide technical support and other ICT functions in Discovery schools and other schools likely to be supported under JEI.
- Review the robustness, functionality and use of the Eduwave portal, both currently and in terms of the expected requirements for ongoing and future JEI initiatives.

II. SCHEDULE

Data collection activities for Task Three were carried out by the RTI team of Gordon Cressman and John Daly from **August 31 to September 10, 2007**.

III. DELIVERABLE

A draft report will be available approximately October 1, 2007 and will be combined with the Task Four report.

TASK FOUR: PROJECTED TOTAL COSTS OF ICT-ENABLED INSTRUCTION

The goal of Task Four is to assess the costs of the ICT platform for the JEI Discovery Schools, including hardware, software, connectivity, and associated training and technical support.

I. PRIORITY TASKS:

The assessment will address the cost implications of technology and software procurement and maintenance, ICT technical support, and e-learning training under JEI, including:

- capital costs of initial procurement and installation (particularly costs additional to standard ERfKE provision);
- effective utilization, including security and theft and other problems such as maintenance limiting availability of technology for instruction;
- building and classroom physical space, conditions and furnishings (particularly costs additional to standard ERfKE provision);
- replacement costs over time;
- ongoing maintenance costs;
- costs of connectivity and/or upgrading (particularly costs additional to standard ERfKE provision);
- training costs and technical support for administrators and technology managers for equipment use and general upkeep;
- training for teachers and administrators in the basic principles and techniques of e-learning;
- costs for e-learning materials development and related professional support for students, teachers and administrators;
- costs for ongoing monitoring and evaluation of equipment, technology use and learning outcomes.

The specific priorities for the Task Four cost assessment will be shaped by the results of Task Three (particularly with respect to replacement, maintenance/technical support and additional software requirements) and by the fact that many of the infrastructure, connectivity, equipment and training costs are embedded in Ministry programs for all schools and are difficult to disentangle for the Discovery Schools.

II. SCHEDULE

Four **consultations** are planned for **late October or early November, 2007**. The timing of the trip depends on the schedule for the JEI partners' update meeting, currently understood to be for early November. Assuming early November, the trip will be planned for about 10 days prior to the meeting. A scope of work will be prepared for consideration by USAID and JEI by October 15, 2007, or earlier.

III. DELIVERABLE

Draft reports for Parts Three and Four will be available for the partners' meeting (to be disseminated, or not, according to the judgment of JEI). Final reports will be available 30

days after the completion of this trip, approximately 14 December, 2007, assuming timely feedback from JEI and USAID.

Annex 1

DELIVERABLE REPORTS

1. The report for Task One will examine the extent to which a new learning paradigm is emerging in the JEI Discovery Schools and to understand the factors that have facilitated these changes or hindered teachers' ability to transform the learning environment. The report will seek to answer three central research inquiries:
 - Are there aspects of a new learning paradigm emerging in the JEI schools? What does this new paradigm look like? What does it mean for how teachers teach and how students learn? What has the JEI brought to this evolving paradigm?
 - What are the conditions supporting this new paradigm? And, what the challenges and impediments?
 - What role do the ICT resources and e-content, provided through the JEI, play in promoting this paradigm? What is the role of e-learning in Jordanian classrooms?
2. The report for Task Two of the evaluation will update the earlier study by McKinsey and Company of the private/public partnership underlying the Jordan Education Initiative. This report should give an accurate and up-to-date picture of the contributions from JEI partners as well as recommendations to strengthen the relationships going forward. This report will be approximately 15 pages including tables and charts.
3. The report for Task Three will contain a comprehensive review of the technology employed in the JEI and the technical considerations of delivering e-learning both to the 100 Discovery Schools and, more importantly, to all 2,300 government schools throughout the Kingdom. The analysis will look at all aspects from the National Broadband Network to the Eduwave learning portal to the computers in the schools. The report will be 20 pages including tables and charts.
4. The report for Task Four will spell out the cost implications of using e-learning in the schools as a regular part of classroom and lab instruction. This will include (but not be limited to) the costs related to start-up, operation, maintenance and replacement for both software and hardware components. The report will be approximately 20 pages including tables and charts.
5. An overview final report will look at findings from all components of the evaluation and pull together in one place the policy recommendations that can help guide future planning for the JEI and the MOE. This will be approximately 5 pages in length.

