Prospects and challenges of an online teacher training project in Oman

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ABSTRACT

The Sultanate of Oman (Oman) is a Middle Eastern country that is eager to prepare its students to compete more effectively in global higher education and commerce markets. Roughly the size of Minnesota, Oman is encircled by the Arabian Sea, the Gulf of Oman, the Persian Gulf, Yemen, Saudi Arabia, and the United Arab Emirates. It has a population of approximately 2.3 million, 550,000 of whom are expatriates (many are temporary workers). Almost half of the population is under 18 years of age (Ministry of National Economy, 2003; p. 3).

In order to prepare its young population for the future, Oman has undertaken efforts to provide continuing professional development opportunities for its teachers and to modernize both training methods and content. One such effort, the Oman Online Teacher Training (OOTT) project, involved a limited pilot test of the development and implementation of e-learning.

The OOTT project was funded by the U.S. Department of State's Middle East Partnership Initiative (MEPI) in partnership with the Omani Ministry of Education (MOE). It was implemented over a 17-month period, between February 20, 2006 and July 31, 2007. Under MEPI, the United States and Middle East countries, such as Oman, partner in funding programs to bring about structural and institutional reform in the Middle East so "democracy can spread, education can thrive, economies can grow, and women can be empowered" (http://mepi.state.gov/). OOTT was managed by Creative Associates International Incorporated (CREATIVE)[1] and implemented by Seward Incorporated International (Seward) based in Minneapolis, Minnesota (http://international.sewardinc.com/), which sub-contracted with CAII to undertake this project. Seward works with clients in the United States and around the world and specializes in online learning design, development, implementation, and evaluation.

This article describes the work completed through the partnership between the Omani MOE project staff and the Seward team. It describes the project goals and deliverables, the actions partners took to achieve the desired outcomes, the challenges partners faced, and the project outcomes attained.

PROJECT GOALS AND DELIVERABLES

Goals

Seward and the MOE designed OOTT to achieve several key goals or outcomes. Each outcome was important in assisting the Omani MOE to determine the viability of online teacher training and to provide Omanis with the skills and capabilities to implement further training, if desired.

The partners envisioned that the project would result in the following outcomes:

1. *Enable the Omani MOE to pilot online teacher training with secondary school teachers.* Materials developed in the MOE's high priority content areas of mathematics, science, and English would be built around active and student-centered learning methodologies. Through this effort the MOE would learn whether teachers could and would engage in online training, and whether it could be effective in changing teachers' pedagogy and students' learning outcomes.

2. *Provide a means for building capacity within the MOE for the design, development, and implementation of online learning courses.* As part of the MOE's contribution to the project, they would provide staff to participate in the design and development of the online training. These staff would bring subject matter expertise and cultural knowledge to the project. As a result of their participation, they would develop knowledge of online learning techniques, instructional design, project management, and course implementation.

3. *Provide a tool (i.e., software) with which the MOE could implement future online training for secondary school teachers in Oman.* By participating in the project, MOE staff would be able to influence the selection or development of the tool; and they would gain experience working with the tool to produce and implement future online training courses.

The project design included formative and summative evaluations to assess the extent to which project outcomes were achieved.

In addition to the above outcomes, the project design specified a set of deliverables or final products, which included the following:

1. A *conceptual framework* for the design and implementation of the internet-based in-service teacher training;

2. *Video footage* that would feature active teaching and learning approaches in the media-rich, internet–based teacher training modules;

3. Pedagogically sound, subject-specific *teacher training and classroom implementation materials* for three internet-based modules that would utilize the latest research-based teaching and learning strategies;

4. *Training programs* designed to build the skills and capabilities of the Master Trainers (i.e., the MOE project staff);

5. The implementation of an *in-service teacher training program in three pilot schools* with 15 teachers (five from each of three subject areas);

6. A *report* on the delivery and implementation of the teacher training in the pilot schools and on the development of the internet-based teacher training modules; and

7. *Regular monitoring and evaluation reports* that described consultations with the Omani MOE, including challenges and proposed solutions.

ACTIONS TAKEN

In order to achieve the desired outcomes and to produce all the required deliverables, Seward managed the project as though it had the following four different, but closely related, activities:

- Training and skill development for MOE staff in product development and use;
- The development of three online teacher training products;
- Piloting and evaluation of these products through online teacher training; and
- The production of a software tool to support future online training projects.

To the extent possible, the partners structured and staged each activity to provide the maximum integration possible into the academic year and program. However, the constraints of time and staff availability made optimal scheduling difficult (i.e., the pilot needed to be completed during the school year, various school and religious holidays had to be taken into account, and some of the MOE staff members were not available during summer holidays).

Training and Skill Development of MOE Staff

The MOE chose 12 staff members to participate in the OOTT project team based on work and subject matter area, as well as the staff members' interest in online training. Three individuals were selected from the Curriculum Department (one each from math, science, and English), and nine from the Human Resource Department (HRD), which conducts much of the MOE's teacher training. Of the nine HRD team members, six had experience training teachers in the three subject areas, and three represented the HRD's media and technology staff.

At the beginning of the project, MOE and Seward partners assumed that much of the capacity building would take place through informal training and collaboration (i.e., through modeling, mentoring, and coaching). Thus, the project was designed to have each of the Omani team members work closely with one or more expert U.S. counterparts. However, as the project got underway, it became clear that this mentoring approach would not address all the skill building required. Skills of formal, systematic instructional design that Seward staff had developed through years of experience and formal education was a new concept to the Curriculum and HRD team members. In addition, the number of MOE technical personnel, their varying levels of expertise, and their availability to work on the OOTT project while working concurrently on other MOE projects prevented them from taking an active role in developing the training software. Instead, they assumed roles in media production, and they supported the installation and maintenance of the online training product. Informal training was maintained throughout the project, and formal training was expanded.

Informal Training in Subject Matter

According to the project design, team members expected that Seward staff would first model the instructional design process for their MOE counterparts; then Seward would mentor their MOE colleagues and walk the MOE staff through the materials preparation process; and finally Seward staff would stand back and coach MOE counterparts. As planned, Seward team members took the lead in designing the first English module (Occupations). During this process, MOE team members learned about the design process. They provided support to the Seward writers, reviewed documents, and learned about the tools and techniques used.

Creating content for the second module in mathematics (Space Geometry) was a shared effort. Both groups took equal responsibility for production of the design document. The Seward team worked on their portion of the module, but stepped back from the lead and took on the role of a mentor to the Omani members. Through this approach the Omani team members were able to apply what they had learned during the production of the first module.

When creation of the design for the final module in physics (Circular Motion) began, the Seward team stepped out of the production process even further. They reviewed materials, offered suggestions, and continued to provide resources as coaches; but they did not have primary responsibility for creating any portion of the design document. However, in order to meet the production schedule, the Seward team members needed to step in every so often to do some reorganization and to fill in some of the missing content.

Upon completion of the three courses required for the pilot project, the project design called for each MOE subject area team to create an additional teacher training course that could be input into the system in the future. The Seward team suggested a development schedule and offered to review the designs, but provided no other support for this activity.

Formal Training

Seward also provided three one-week courses as part of the capacity building effort. Two courses on software features, functionality, and implementation planning were part of the initial project plan. A third course on instructional design was added when the Omani team members expressed a need for more knowledge and skill in this area.

Course #1. The newly-developed online teacher training software developed in Minneapolis was run for the first time in Oman at the first training course, offered in December 2006. The training course participants were invited to review the content as pilot teachers would see it. The following topics were addressed in the training:

- How to operate the pilot online teacher training software;

- A review of the content included in the pilot training;

- How to provide coaching and support to teachers using the pilot materials;

- A review of the e-learning development process;

- Identifying issues related to rollout and support of the pilot training; and

- Planning for future use of e-learning in Oman.

Course #2. In the second course, offered in May 2007, Omani team members were exposed to the administrative portion of the software tool. The Seward technology team developed this component of the online training software, a Learning Content Management System (LCMS), after the three pilot modules had been completed. The LCMS enables non-programmers to edit existing courses, input new courses, manage courses and curricula, manage users, and print reports. Training on use of the LCMS was initially scheduled for five days; however, the team members mastered the system so quickly that the training ended after two-and-a-half days. This course addressed the following topics:

- The operation and intended use of the administrative interface of the OOTT project's LCMS;

- Reviewing the structure and intended use of the learning models available in the LCMS;

- Successful management of courses, content, interactions, and users through the administrative interface portion of the LCMS;

- Inputting of an additional course developed by each area team using the administrative interface; and

- Expandability and scalability of the LCMS for future training needs.

Course #3. In May 2007, immediately following the software training course, Seward staff offered a third training course in instructional design to meet the deficiencies identified by the Omani team members. Seward staff designed this course to provide basic instructional design skills that could be applied immediately to revising existing courses or to creating new ones for delivery using the LCMS. This course addressed the following topics:

* Systematic instructional design – a model for online course design and development;

* Major design issues related to the design of online curricula, courses, and lessons;

* Lesson design and development – a model for effective online lessons; and

* Documentation of designs and processes – uses and value.

Development of Three Online Teacher Training Products

The project design had established that three online teacher training modules would be developed for secondary school teachers. Discussion with senior MOE officials further determined that the training should address the use of active learning methods in mathematics, science, and English for Grade 11.

Working together, Seward project team members and Omani MOE staff team members selected an instructional approach for the online training and identified the training module topics. They decided to develop a series of 12 brief tutorials on important active learning techniques. These tutorials introduced the teacher to each technique by describing why, when, and how the technique could be used, and their related methods of assessing student learning. The tutorials included video vignettes that were videotaped in Omani classrooms in three different schools, which demonstrated how the technique could be applied in different curricular areas.

In addition, three subject-specific teacher training modules were developed for mathematics, science, and English to model and support the transfer of active learning to the classroom. Each module presented an explanation of the instructional topic or problem, the instructional objectives, techniques to be used during the instruction, lesson plans the teachers could use to teach the topic to their students, video demonstrations of critical instructional activities, and assessments.

The teams developed a strategy and a timeline for creating the instructional modules, which included assigning responsibility for writing each tutorial and module. The timeline required that the writing be completed within four months. This was necessary to allow time for putting the content online, testing it, and making revisions.

Concurrent with the writing activity, the Seward technical team and their MOE partners created, reviewed, modified, and approved the interface design. The design included the capability to toggle back and forth between content presentations in Arabic and English. This feature was determined to be important since different teachers had different first languages (e.g., some English teachers spoke no Arabic and some science teachers spoke limited English). Offering the courses in both languages also helped teachers further develop their second-language skills.

Figure 1: *Arabic/English Screens from the Teacher Training*

Upon completion of the English module design, Seward staff began programming the software. All three modules and the associated tutorials were programmed and ready for quality assurance testing by December 15, 2006.

Testing and revisions took place through January 2007. One of the major findings was that the software needed to be hosted within Oman. Accessing and downloading the media-rich software from outside of the country was too slow. The MOE's Information Technology Department, which had been kept informed about the project from its inception, was able to provide a hosting server within its IT facility, thereby eliminating this concern.

By February 2007, three online teacher training modules were ready to be piloted in the schools.

Piloting and Evaluation of the Online Teacher Training

In February 2007, members of the MOE development team visited each of the three pilot schools. They spoke with the five Grade 11 teachers in each school (i.e., two English teachers, two mathematics teachers, and one science teacher) who had been recruited to participate in the

implementation of the pilot curricula. They informed teachers and the school administration of the nature and purpose of the pilot and of their roles and responsibilities. Seward and MOE team members also logged in and registered teachers on the online training system; gave them a brief, two-page user's guide; and provided them with the materials (e.g., student and teacher guides) for implementing the new module of instruction.

At the teacher orientation in February, pilot teachers were instructed to complete the online training and to implement the new module of instruction in their classrooms by the end of April. During the two-month period, teachers' progress through the online instruction was monitored online and Omani team members contacted those teachers who had made little progress to determine whether the teachers were experiencing technical difficulties. In addition, MOE development team members visited schools and observed teachers' use of active learning in their instruction.

In late April and early May, the project evaluator visited all three pilot schools to observe classroom instruction and to conduct interviews. She interviewed pilot teachers and Grade 11 students in the pilot classrooms about the pilot curricula and the classroom implementation.


Figure 2: Science students working on an Active Learning lesson

Production of a Tool to Support Future Online Training Projects

Immediately following the development of the pilot software, the project team embarked on development of the LCMS portion of the project. Development of this tool took place at Seward headquarters in Minneapolis. Involvement of the Omani team members was limited to providing formative evaluation input and conducting quality assurance testing.

The goal of the administrative tool, titled "OLT" (Online Learning Tool), was to provide a basic LCMS that could be used to train developers to produce courses with the same features and functions as those created for the pilot project. The tool needed to be easy to use, so that non-technical staff could quickly and easily learn the interface and create new online training.

The completed LCMS was installed on the MOE server in late April 2007, and was made available for use in early May after a brief period of testing. OLT has provided the Omani MOE with a tool they can use to create additional online teacher training products.
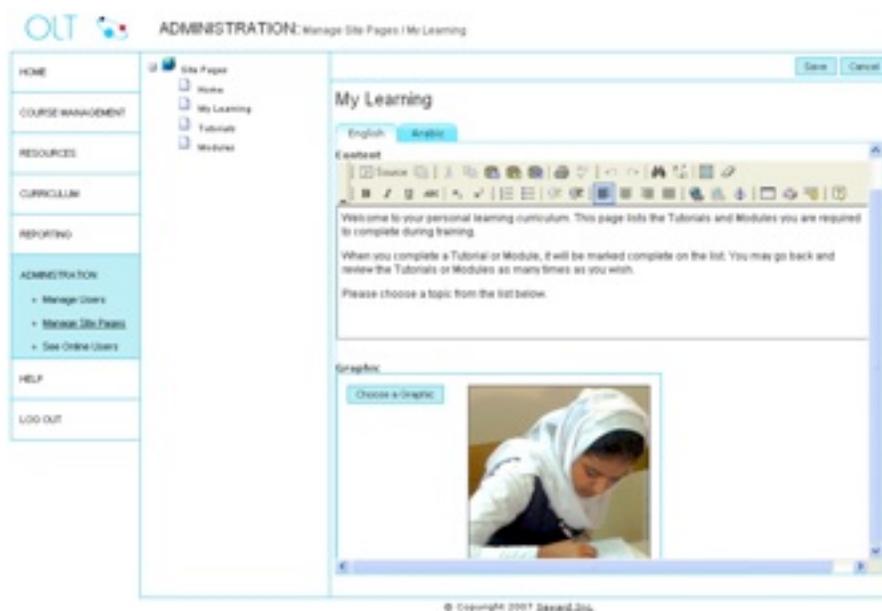
Figure 3: An Administrative Interface Screen

OUTCOMES ATTAINED AND CHALLENGES ENCOUNTERED

The three desired outcomes were achieved, and the Omani and U.S. partners learned additional valuable lessons.

Outcome 1

The first desired outcome was for the Omani MOE to pilot online teacher training with secondary school teachers to determine if teachers would (1) engage in online training; (2) change their pedagogy to include active teaching and learning; and (3) achieve improved student learning outcomes. The MOE successfully piloted the online teacher training in English, mathematics, and science with a group of secondary school teachers.

Teachers' actual progress in the online training could be followed through a monitoring system that was part of the OLT software. It recorded how frequently teachers tried to access the website and when they had completed a lesson, a quiz, or the entire training.

Despite the initial enthusiasm expressed by all 15 teachers, by the end of the pilot period only six teachers had fully completed the training (see Table 1).

Table 1: Number of Teachers Completing On Line Training

	Completed	In Progress	Not Attempted
School 1	2	1	2
School 2	1	3	1
School 3	3	1	1
Total	**6**	**5**	**4**

Twelve of the 15 pilot teachers were interviewed for the project's final evaluation. Their responses offer insight into the reasons why the software recorded that not all teachers appeared to participate fully in the project. The main challenges can be summarized as follows:

(1) *Connectivity problems.* All 12 teachers interviewed reported regular and ongoing problems with trying to access the website from the school computer lab. Most pilot teachers reported that there was no connection when they wanted to log on, and that when the connection was available, it was slow. Similarly, with regard to the video demonstrations of active teaching methods in the online training, teachers reported that due to slow connections the video clips were fuzzy or could not be seen at all.

Most of the six teachers who completed the online training reported that they had accessed the website from a coffee shop where the connection was strong and fast. They did this on their own time and at their own expense.

(2) *Lack of familiarity with computers and online training.* In at least one case, a teacher who was comfortable using the computer logged on and the other watched and worked alongside his colleague but did not personally log on. Two teachers working together is a fine model of learning to use the computer, but it is problematic for monitoring online training and individual achievement.

(3) *Project design.* Since teachers' guides were available for each of the specific topics (i.e., Occupations, Space Geometry, and Circular Motion) and were distributed at the same time as teachers were registered for the online training course, it was possible for teachers to teach the unit without participating in or even attempting the online training. Three or four teachers did this.

With regard to the active teaching and learning introduced through the pilot project, the majority of teachers and students said they liked the materials and benefited from them.

Ten of the pilot teachers interviewed revealed that at the beginning of the project they were not familiar with active learning methods. However, when interviewed at the completion of the project, the majority of teachers said that they had learned new methods for teaching active learning; were "honored," "happy," or "grateful" to have the opportunity to learn these new methods; and

noted that their students learned with enthusiasm, showed signs of being more independent learners, and improved in their performance on the final test. Student performance and students' positive feedback to the methodology heightened teachers' enthusiasm for using these instructional methods.

Grade 11 girls and boys who were interviewed said they "enjoyed the active learning methods," "learned better," and "understood and retained information better." Students said they felt more confident after learning through these methods, and they developed the ability to learn from each other through cooperative learning and group work. Students also said that the materials were relevant and related to their daily lives.

Outcome 2

The second desired outcome was to provide a means for building capacity within the MOE for the design, development, and implementation of online learning courses. Twelve MOE staff members from the Curriculum and Human Resources Departments developed knowledge and skills of online learning techniques, instructional design, project management, and course implementation. Among the challenges that needed to be addressed during this process were the following:

1. In carrying out its partnership role of modeling, mentoring, and coaching in the materials development process, Seward staff would send draft materials, draft Arabic translations, or content-related questions to MOE counterparts. In order to maintain the promised production schedule, Seward staff often requested quick turnaround time from MOE counterparts. These requests occasionally and sometimes routinely collided with other work demands placed on MOE counterparts. Decisions occasionally had to be made without feedback, and products sometimes had to be created anew in order to incorporate feedback received.

2. Also, in order to move ahead efficiently, Seward management segmented certain tasks both in the Minneapolis office and between Seward and MOE counterparts. During interviews with MOE staff during the formative evaluation in January 2007, various MOE team members requested that Seward provide an overview of the entire design, production, and implementation process so that they could work more holistically. Seward responded by including a detailed overview of the entire design and development process during the third formal workshop that was not part of the initial project plan.

Outcome 3

The third desired outcome was to provide a tool (i.e., software) with which the MOE could implement future online training for secondary school teachers in Oman. The Seward technology team successfully developed this tool, and the MOE team members quickly learned how to use it. This tool is now available for MOE staff to use to produce and implement future online training courses.

CONCLUSIONS

Federal funding mechanisms often mandate and encourage partnerships, but rarely facilitate their successful development. However, through MEPI, Creative, Seward, and the MOE have charted the waters for a successful cross-national, two-language partnership in ICT. Together, they have worked on instructional design capacity building, teacher professional development, and improving student learning outcomes through active learning. This is a contribution to realizing

the goals of Oman's MOE – to modernize the school system and to prepare Omani youth to compete more effectively in global higher education and commerce markets. Through this partnership, Seward has also increased its capacity to work with Arabic-speaking colleagues on education initiatives, and enhanced its expertise for building ICT capacity through partnerships based on mutual respect and collaboration.

Perhaps the most important lesson that can be learned from this initiative is that clarity of purpose, task orientation, open communication, continuous dialogue, and meaningful collaboration based on mutual respect are important elements to consider in developing successful and sustainable partnerships.

ENDNOTES

[1]   CREATIVE is a consulting firm based in Washington, DC that helps clients create "more empowered and effective systems and institutions" (http://www.caii.com/).

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http://mepi.state.gov/

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