State-of-The-Art Technologies Used in Training Delivery and Administration at the Institute of Public Administration: Case Study

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Abstract: The Institute of Public Administration (IPA), in Saudi Arabia, is a well renowned training institution designated for training civil servants in the Kingdom of Saudi Arabia. This paper mainly discusses the uses of technologies in the administrative aspects of the IPA. The author also points out the obstacles faced and lessons learned from the implementation and use of these technologies.

Key words: IPA; State-of-The-Art Technologies; training administration; training delivery

1. Introduction

The Institute of Public Administration (IPA), in Saudi Arabia (http://www.ipa.edu.sa), is a well renowned training institution designated for training civil servants in the Kingdom of Saudi Arabia. In addition to its headquarters in Riyadh, the IPA has three branches in: Riyadh, Dammam, and Jeddah. Alongside its main function of training civil servants, the IPA has three further functions: Consultation, Research, and Government Documentation. Every year, the IPA trains about 27,000 employees in more than 340 training programs and seminars. These programs cover almost all administrative and managerial fields, ranging from data entry to Strategic Management training programs and special Round Table programs for Deputy Ministers. Programs delivered by the IPA are divided into four types: in-service programs, pre-service programs, higher management programs and special programs. These programs are delivered mainly at the IPA premises, with some in-house training. It is worth noting that the private sector has lately been gaining benefit from the programs presented by the IPA.

In the domains of administration and training, the IPA is using state-of-the-art technologies. Alongside the hardware and equipment used in the Institute, the IPA uses the “Productivity Systems” which is a group of applications used in training administration and delivery. This paper will discuss the uses of technologies in the administrative aspects of the IPA, training administration, as well as the training delivery technologies domains. It will concentrate on the uses of technologies in training administration and delivery.

2. Summary of Related Literature and Research

Little literature and research on effective training technology integration exists, but rather focuses on educational technology integration at various levels of education. However, most research results in that area apply to training as they apply to education. According to Gustafson and Kors (2003), a study by the University of Washington surveyed 3000 of the university faculty and students concluded that “It should not be overlooked that technology is an enhancement of instruction, a tool to make new connections and advance knowledge through

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electronic means…technology can have a powerful impact on learning and teaching environment". It has been repeatedly found that careful planning is prerequisite for the effective implementation of technology and telecommunications in education and training (Cradler, 2000). Zemelman, Daniels, and Hyde (1998) have indicated that best practice calls for training to be built around experiential activities rather than theoretical lectures. Surry (2002) states that technology is expensive and colleges need to plan for adequate funding from the outset of the process in order to be able to acquire, utilize, maintain and upgrade technology. Other literature has emphasized the need for training in implementing technology. Effective technology training must be hands-on, systematic, and on-going. Additionally, a variety of models and approaches should be available to accommodate different needs, schedules, and learning styles (Antonacci, 2002). Leggett and Perichittee (1988) have identified five categories of obstacles to technology integration: time, expertise, access, resources, and support. Also, literature warns of the misuse of technology "It is not beneficial to a program to include technology simply because it is available. This trap catches even the best intended programs", (Bucci and others, 2003).

3. Uses of Technology in the Administration of the IPA

The IPA uses automated computerized processes in all aspects of its self-administration. These include: Personnel, finance, procurement, stock management, maintenance, document management, consultations, research, and social activities. The procedures in these areas are carried out using a workflow application part of the Productivity Systems.

3.1 Uses of Technology In Training Administration

The administration of the IPA training is automated at the levels of program initiation, program design, training packages preparation, trainer duty cards, scheduling, remote electronic applications, taking trainees' attendance, grading, clients reporting, certification, and program evaluation. All of these activities are accomplished electronically and paperless.

To illustrate further, training programs at the IPA are initiated in different ways. A request for a program could be initiated based on a training needs analysis study, a suggestion from a trainer, or a request from a government agency. For the program to get approved, it has to go through an automated process managed by the Programs Design and Development Department. This process involves completing electronic forms from which all the process steps and transactions are done.

If the training program gets approved, the next step is to design the program based on the training need using electronic forms by the program designer and reviewer. Then the training package and presentations are also deigned and evaluated electronically using specialized software integrated into the Productivity Systems.

Trainees' applications to the IPA training programs are completed electronically and remotely. The trainees apply for training program from their organizations using electronic applications through the Internet. The decisions on the applications are studied electronically based on predefined criteria. If the software can not make a decision on the admission, the application is transferred to be studied manually. Communication between the IPA and trainees on one hand and their organizations on the other are carried out electronically during the application process, during training and beyond.

After the training programs start, the trainees' attendance is taken by trainers electronically. Grading (the training result) is completed electronically, and trainees' results are sent to trainees and their organizations electronically. Training programs are evaluated by the trainer and trainees and benefiting organizations

electronically. Admission entrance exams for the pre-service programs are completed, graded, and posted electronically.

3.2 Uses of Technology in Training Delivery

The IPA within its headquarters and other three branches has over 260 training rooms of different sizes designed for different training purposes. These training rooms include: standard training rooms, computer labs, English Computer-Aided Language Labs, meeting rooms, conference rooms, video conferencing rooms, and computerized long distance learning labs.

Each training room comes equipped with standard equipment: a trainer podium with installed computer, LCD Screen, mouse, and electronic digital remote control. Moreover, rooms have: a ceiling mounted projector, mounted projection screen, speakers, and an intercom with the Training Technologies Center. Also, each training room is networked to the IPA LAN and to the Internet. Some training rooms are equipped with an electronic blackboard, a sound system and video conferencing equipment. In addition to the standard equipment, other technologies are provided in training rooms upon request. These equipments include: a digital document camera, a video camera, a digital photo camera, a wireless keyboard and mouse and pointing device. When delivering training outside the IPA's premises, or if needed for any other purpose, trainers and staff can borrow needed technologies such as notebook computers, tablet PCs, portable projectors, and electronic storage devices.

The IPA has an Audio-Visual library which accommodates over three thousands training films and training case studies, and forty-five locally produced training case studies. These training materials are stored digitally and delivered to training rooms and trainers’ offices through the network.

PowerPoint presentations for every training program are stored in a server networked to the training rooms. In the training room, the trainers can access the IPA's Productivity System, where they can perform different kinds of activities during the training session, such as taking attendance electronically, displaying digitally stored training material, training presentations, training films and case studies. These activities are performed through incorporation of the use of different equipment and digital materials: computer, projector, LAN, pre-designed digital training packages and materials, digital training films and cases, and the Internet.

The uses of video conferencing rooms and e-learning labs for the purpose of training are not implemented fully yet at the IPA. It is planed that some training programs or activities benefit from these technologies by cooperation between the IPA branches and other institutions locally or around the world. The e-learning labs at the IPA are implemented in cooperation with the World Bank. This project facilitates the remote cooperation and exchange in the field of training between the Bank and a number of training and higher education institutions around the world.

4. Planning, Building and Implementation of the Technologies

Planning for Training technologies at the IPA involves in addition to the Training Technology Center, the cooperation among different departments: Planning and Development, Quality Control Unit, Program Design and Development, Computer Center, and the related program sector (department).

Most software related to training technologies are programmed locally by the Applications Department at the IPA's Computer Center. Normally a request comes from a department to the Applications Department, and then the application is programmed in cooperation with that department, to assure that it meets the specific needs of the department. Hardware and equipment are normally outsourced from leading companies in the related area.

The implementation process involves four phases: (1) a pilot implementation to test the application or hardware; (2) a limited implementation to overcome obstacles and problems; (3) a final implementation to use the technology; (4) a continual improvement process, mainly a solution for problems faced during actual implementation, or based on development suggestions made by the users, or to go inline with technological development.

5. Obstacles Faced

(1) Limited Resources: there were limited resources in finance, human resources, infrastructures, and space to implement the project. At the IPA we had to make periodical plans (5 years) to implement technology based on technology priority to overcome these resource limitations.

(2) Incorporating Infrastructures: to minimize cost, higher management requested that we use the available infrastructure, such as LAN and servers. Sometimes this does not meet our best requirements for educational technologies, such as bandwidth and storage space. Some modifications in the infrastructures are necessary to meet these needs.

(3) Technical Problems: some technology projects met unexpected technical problems when implemented. Most of these problems relate to different technology and software integration. Some of these problems are solvable, but some needed allocating of unplanned and new resources to solve. We solved most of the problems in cooperation with our Computer Center and vendors.

(4) Need for skilled and specialized human resources: some advanced technologies need skilled and specialized human resources to implement, run, and maintain. For example, to run the e-learning labs we had to employ or extensively train two specialists at each location.

(5) Need for Polices: use of training technologies involves copyrights and many regulations. We had to create many administrative policies and regulations for trainees, and technicians to comply with.

6. Learned Lessons from the Implementation and Use of these Technologies

(1) Involve stakeholders: involving users in the processes of planning and decision making about the technology is an important issue for its success. This involvement will meet their needs more, minimize change resistance, and make more use of the technology.

(2) Train Users: although trainers might be expert in their fields, training on the use of technology will minimize expected resistance by some users, and requests for user support.

(3) Do not be too enthusiastic about technology: technology should be considered as an investment. Be sure that there will be a justified usage for the technology.

(4) Technology is quickly outdated: large technology projects normally take a long period to plan for, get approved, and implement. What was up-to-date during the planning for the project might be out-dated or even obsolete near contracting. Revise your specifications and requirements just before contracting.

(5) Adhere to international standards: to ensure effective future upgrades and integration between different software and equipment, use only hardware, software, and other equipment which meet international standards. This would also make it easier to deal with different outsourcing agents.

(6) Limit the number of outsourcing agents: partner with expert vendors with proven technologies and industrial expertise for long term development plans. Outsourced technologies might have expected or unexpected

problems to be integrated together. Normally these problems are easier to solve if the sourcing agency is the same.

(7) Consider whether the planed technology is likely to persist, and develop technology replacement strategies for when the technology diminishes.

(8) Technology is a teaching and training tool: many teachers and trainers shift the subject from teaching or training on the intended curriculum to teaching the aid technology itself. Awareness about training with technology and not teaching technology itself, or focusing what we like instead of the intended curriculum, should be promoted.

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this matter, we can judge that the professionals in Educational Technology can not get well-used and the benefit from Educational Technology by whole society is very low.

The ultimate task of Educational Technology is to optimize the education and instructional process. On one hand, we require all the people working for education receive the literacy of Educational Technology; on the other hand, we need to determine further about the status and function of people in Educational Technology should have. The people of Educational Technology are the special talents in education and we must ensure the position and duty of theirs, according to the demands of them who belong to different levels. We would better not locate all the people of Educational Technology as the assistants of instruction, otherwise it will diminish the enthusiasm of the people who are working at Educational Technology.

To modernize the education, we can not go on study without the construction and development of Educational Technology, and orientation of Educational Technology with rationally and precisely are the premise of the Educational Technology's construction and development as one subject. Of course, people have different opinions on an emerging subject is quite normal, and the key problem is that we must keep definite recognition to the orientation of Educational Technology for we are the people who do the research work on Educational Technology and should be responsible for the instruction.

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