

## A proposed Open Distance Learning Module for promoting Vocational Skills Acquisition

E.B Sonaiya<sup>1\*</sup>, E.R. Adagunodo<sup>1</sup>, I.K. Adewumi<sup>2</sup> and O.A. Koya<sup>3</sup>  
Centre for Distance Learning, Obafemi Awolowo University, Ile-Ife

### 1. SUMMARY

#### 1.0. Abstract

It is proposed to explore the use of open distance learning modules in promoting skills acquisition in two vocational areas – motor vehicle repairs and building maintenance by artisans-in-training at the vocational enterprise institutions (VEIs) being set up by the Federal Ministry of Education and university undergraduates to be apprenticed to master artisans.

The strategic objectives of the project are to develop and place on the project website ODL modules for promoting the acquisition of vocational skills, enhancing the theoretical knowledge of artisans in motor vehicle repairs and building maintenance through the provision of ODL instruction via video conferencing by university lecturers to vocational enterprise institutions in Osun and Oyo States and improving the practical skills of university undergraduates in mechanical engineering and civil engineering departments through apprenticeships to master artisans located in Osun and Oyo States with constant monitoring and interaction between the master artisans, undergraduates and university departments.

Project activities will include university-supervised apprenticeships of undergraduate engineers and builders with selected master artisans; lectures, tutorials and technical discussions and seminars presented through one-way and interactive learning systems between university lecturers and the artisans-in-training at vocational enterprise institutions; maintenance of all instructional materials on a project website at all times; and contests of skills between the two groups of trainees.

Expected Tangible Products are: developed technical skills acquisition ODL course modules for artisans in two vocations - motor vehicle repair and building maintenance; developed practical skills acquisition ODL course modules for university undergraduates of civil and mechanical engineering and building; and online multimedia training support materials for theoretical and practical skills acquisition for artisans-in-training and university undergraduates.

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<sup>1</sup>Centre for Distance Learning, <sup>2</sup>Department of Civil Engineering, <sup>3</sup>Department of Mechanical Engineering. \* Presenter: fsonaiya@oauife.edu.ng

#### 1.1 Project Goal

The goal of the project is to explore the use of open distance electronic learning modules in promoting skills acquisition in two vocational areas – motor vehicle repairs and building maintenance by artisans-in-training [at the vocational enterprise institutions (VEIs) being set up by the Federal Ministry of Education] and university undergraduates [apprenticed to master artisans].

#### 1.2 Strategic Objectives

The strategic objectives of the project are to:

- i. Develop and place on the project website open distance electronic learning (ODEL) modules for promoting the acquisition of vocational skills
- ii. Enhance the theoretical knowledge of artisans in motor vehicle repairs and building maintenance through the provision of ODEL instruction by university lecturers to vocational enterprise institutions in Osun and Oyo States.

- iii. Improve the practical skills of university undergraduates in mechanical, electrical and civil engineering and building through apprenticeships to master artisans located in Osun and Oyo States which are monitored by frequently and allow constant interaction between the master artisans, artisans-in-training, undergraduates and university departments.

### 1.3 Proposed Activities

- University-supervised apprenticeships of undergraduate engineers and builders with selected master artisans.
- Lectures, tutorials and technical discussions and seminars by university faculty and the artisans-in-training at vocational enterprise institutions.
- Maintenance of all instructional materials on a project website at all times.
- Contests of skills between the two groups of trainees.

### 1.4 Expected Tangible Products

- Developed technical skills acquisition ODeL course modules for artisans in two vocations: motor vehicle repair and building maintenance.
- Developed practical skills acquisition ODeL course modules for university undergraduates of civil, electrical, and mechanical engineering and building.
- Online multimedia training support materials for theoretical and practical skills acquisition for artisans-in-training and university undergraduates.

### 1.5 Key Staff

Professor E.B. Sonaiya	Centre for Distance Learning
Professor E.R. Adagunodo	Centre for Distance Learning
Dr I.K. Adewumi	Department of Civil Engineering
Dr. O.A. Komolafe	Department of Electrical & Electronic Engineering
Dr. O.A. Koya	Department of Mechanical Engineering
Dr, A.Y. Adeyemi	Department of Building

## 2. PROPOSAL

### 2.1. Background, rationale and context

In most African countries, the vocations of motor vehicle repairs (mechanic, panel beater, electrician, etc), and of building maintenance (plumbing, painting, bricklaying, electrician) are the exclusive preserve of artisans who practice by the road side (motor vehicle repairs) or as itinerant entrepreneurs (for building and building maintenance). Their services are considered by the majority of individual private customers as much more convenient and cheaper than using the few professionally run automobile repair garages and building contractors. However, the lack of a sound theoretical background for these artisans limits their operations to “trial and error”; the total cost of the “errors” is borne by their customers. Such costs sometimes include human lives especially in the case of collapsed buildings and ghastly motor accidents.

Where ever the work force is made up of illiterate, primary and secondary school leaving artisans/craftsmen, the production process is characterized by crude tools and the use of brute force resulting in very low quality of production and productivity. For rapid development, there is a need for a work force with both advanced theoretical and practical skills (Ogbimi, 2003).

In Nigeria, public vocational education and training has two elements - technical education and vocational education. Technical education is offered for middle-level technical manpower. It is mostly provided by polytechnics. Vocational education, on the other hand, is a learning and training experience for skilled workers, craftsmen and artisans. It is provided by technical colleges and vocational centers.

The Federal Ministry of Education has approved the establishment of 74 Vocational Enterprise Institutions (VEI) and Industrial Enterprise Institutions (IEI) across the country to meet the skills demand, widen access to technical and vocational education and satisfy the needs of industries as well as self empowerment. 25 curriculum and three generic courses have already been designed for the VEI and IEI.

There are three objectives of most Nigerian vocational/technical education and training. First, they aim to provide general and holistic education beyond primary and secondary level. Second, they offer training and understanding of certain jobs and their working conditions, requirements, and opportunities. Lastly, they help and guide students in skill development including abilities and attitude in maintaining and securing an occupation.

Most of the programmes of the schools are focused on crafts, engineering, agriculture, business, trade and home economics. Business curricula include shorthand, bookkeeping, typing, etc. However in technical schools, the courses is concentrated in electronics, technical drawing, wood work, metal work, auto mechanics and masonry. At the end of each course, every student is expected to take the National Business and Technical Board Examinations (NABTEB).

The primary distinction between vocational education and education itself is the scope of the study. Education is broader and concentrated on theories, conceptual and abstract knowledge. The focus of vocational education and training is more on application of knowledge and is more of an apprenticeship system.

In many countries, there are public schools dedicated to vocational education and training. Such schools work with individuals who are interested in a particular trade or industry. These learning institutions have established standard curricula and guidance programs for such education. In such countries, colleges and even universities extend their programmes to cover vocational education and training for industries like tourism, information technology, retail, and customer service.

Community-based vocational training has already been acknowledged in providing high school students transitional phase (from school to adulthood). Some colleges and universities have also expanded their current programs to accommodate the current employment needs.

In some countries, like the United States, these community-based schools also aim to guide high school students. Many of the students are still undecided with their future careers. Also, students who cannot afford college can make vocational training an option for a good job.

The formal education system up to the university imparts training in theoretical skills while the informal system of apprenticeship produces artisans with only practical skills. Can the university graduate learn from the artisan and can the training of artisans accommodate theoretical skills acquisition? We propose to develop a series of open distance electronic learning (ODEL) modules to test this possibility, as a pilot, in the vocations involved in two areas: Motor Vehicle Repairs and Building Maintenance.

## 2.2. Problem Statement

As asserted by the Nigerian President at the 58<sup>th</sup> Foundation Day ceremony of the University of Ibadan: “[The Nigerian] tertiary education system lacks adequate deployment of technology. The under employment and unemployment statistics of graduates of Nigerian universities reflects the poor relevance of the curriculum to the demands of the market-place. The [Nigerian] government will take full advantage of ICT through the deployment of e-learning at all levels of the education system. This

will include on-line training for lecturers in pedagogical skills and entrepreneurship education for students” (Obasanjo, 2006).

The university system needs to impart practical skills to university undergraduates and theoretical skills to the artisans who make up the majority of professionals in the motor vehicle repairs and building maintenance fields. The inability to do this has been due to the shortage of practical opportunities within the universities and the lack of appropriate modules developed by the universities with which to reach out to the artisans who have high practical skills. The proposed ODeL modules will provide a platform for ICT deployment in the formal and informal systems of education and for the acquisition of relevant production skills in two vital areas of the economy.

### 2.3. Project’s Relevance to the University Mission and the Goals of Government

The mission of the university is to create a teaching and learning community for imparting appropriate skills and attitudes that are relevant to national and global development. The mission of the OAU Centre for Distance Learning is to develop and provide, through emerging technologies, responsive and quality distance learning opportunities that meet diverse local, national and global needs. One of the objectives of the OAU Centre for Distance Learning is to provide increased educational opportunities to those disadvantaged by limited time, distance, gender discrimination, old age or physical disability.

The Federal Ministry of Education has launched a new initiative to “... provide the kind of education that will once more build the critical pool of professionals in vocational fields that all growing economies must possess. [The] aim is to create a knowledgeable work force with practical technical skills ... [and to] also give hope and provide opportunities to the millions of Nigerians who do not have access to the current higher institutions of learning.” (The Punch, Feb. 15, 2007 ). The Federal Ministry of Education has called for expressions of interest to set up vocational enterprise institutions (VEIs) in all vocational skills including Motor Vehicle Repairs (mechanic, panel beater, electrician, etc), and Building Maintenance (plumbing, painting, bricklaying, electrician). It is these VEIs that we propose to partner with in the promotion of vocational theoretical skills acquisition by artisans-in-training and practical skills acquisition by university undergraduates.

### 2.4. Project Design and Activities

The project is designed to enhance the theoretical knowledge and skills of artisans-in-training in the selected vocations of motor vehicle repairs and building maintenance through the provision of ODeL instruction to the vocational enterprise institutions (VEIs) in which they are being trained. The project is also designed to improve the practical skills of university undergraduates in relevant fields (mechanical, electrical and civil engineering; and building) through university-faculty- supervised apprenticeships with selected master artisans located in the VEIs. Lectures, tutorials and technical discussions and seminars will be provided through modules pre-recorded on CD and DVD or in real time by video conferencing between university faculty and the undergraduates and the artisans-in training located at the VEIs.

The project will have a control. This will be made up of artisan-trainees in other VEIs who will not receive ODeL modules developed by the project; and undergraduates of the relevant departments who will not be involved with the VEIs. After nine months of instruction and training, there will be a contest in theoretical and practical skills between the two treatment groups who received ODeL instruction and the two control groups who did not. This contest will be judged by master artisans (for practical skills) and university professors for theoretical skills.

Project activities will include:

- Sensitization and mobilization of the project stakeholders – artisans and graduate groups; Federal Ministry of Education and its VEIs; instructors in the 3 relevant university departments.
- Development of project milestones, scope and requirements.
- Development of theoretical and practical curricula
- Training of all stakeholders in ODeL methods
- Development and production of online course materials and project website
- Re-training of all stakeholders in ODeL methods
- Delivery of instructions, practicals, workshops and seminars
- Quarterly evaluations, report preparation and discussions
- Theoretical and Practical Contests between ODeL instructed and control artisans and undergraduates

2.5. Timeline

Table 1. Schedule of activities for the first project year

S/N	Activities	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M
1.	Sensitization and mobilization of stakeholders	█														
2.	Development of project milestones	█														
3.	Development of skills curricula	█														
4.	Training of all stakeholders in ODeL methods	█														
5.	Development and production of course materials		█	█												
6.	Quarterly evaluation report				█	█	█						█	█		
7.	Delivery of instructions				█	█	█	█	█	█	█	█	█	█	█	█
8.	Re-training of all stakeholders in ODeL methods				█	█										█
9.	Monitoring and Evaluation				█				█				█			█
10.	Theoretical and Practical Contests															█

Table 2: Notional Budget

Item	Amount
Salaries	0.0
Fringe Benefits	\$5,000
Equipment purchase	\$17,000
Training	\$8,000
Workshops/Meetings	\$6,000
ODeL materials development	\$7,000
Website and office expenses	\$4,000
Travel	\$2,000
<b>TOTAL DIRECT COSTS</b>	<b>\$49,000</b>
<b>INDIRECT COSTS</b>	<b>\$1,000</b>
<b>GRAND TOTAL</b>	<b>\$50,000</b>

Budget Notes

- Fringe Benefits cover token amount to motivate project participants
- Equipment purchase covers cost of video conferencing equipment
- Training and re-training of instructors and trainees in the use of ODeL system
- Workshops/Meetings costs are for planning and logistics of four such events

- v. ODeL course material development cost to be paid to course developers
- vi. Website expenses are \$300 per month; the balance is for office supplies
- vii. Travel costs are for monitoring activities of all the master artisans

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