Online Vocational Education: A Philippine Experience

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Abstract

This paper presents the online education model and initial results of the Technical Education and Skills Development Authority (TESDA) ONLINE PROGRAM in the Philippines. The program was launched in March 2012, with an attempt for wider reach and to reduce the expenditures incurred by the trainees. To date, TESDA offers four online courses with over 40,000 registered users (3,000 from at least 10 countries outside the Philippines). TESDA's re-designed online education model has two main features: 1) Short-term courses are broken down into job-centered micro-courses and 2) Center-based skills training now follows a "Learn-Practice-Certify-Employ" hybrid approach. Current and future developments on the project will also be presented.

Keywords: Blended Learning, Tech-Voc, Vocational Training, E-Learning, Adult Learning

I. The Philippine Trifocalized Education and Training System

The Philippines has a population of more than 93 million people. In fact, it is the 7th most populated Asian country and the 12th most populated country in the world. Among the 93 million, 25 million are enrolled in some form of education or training across the three sub-sectors in the Philippine Education System: Basic Education, Mid-Level Education and Higher Education. There are 21 million students enrolled in Basic Education (14 million in Elementary and 7 million in Secondary Level), and 4 million spread across Mid-Level (1.6 million) and Higher Education (2.6 million).

Basic education is managed by Department of Education (DepEd). It focuses on the delivery of foundational competencies to prepare persons for higher learning. Currently, it covers 6 years of elementary education and 4 years of secondary education. Philippine formal basic education subsystem is one of the shortest in the Asia Pacific with just 10 years of basic schooling compared with 11 to 12 years in other countries. Major reforms in this sector is ongoing, particularly the K to 12 Program, to increasing the number of years of basic education from 10 to 12 and making Kindergarten mandatory.

Middle level education is managed by the Technical Education and Skills Development Authority (TESDA). It focuses on post-secondary technical-vocational education and training for middle-level learners commonly known as TVET. These learners refer to the following: (1) those who have acquired practical skills and knowledge through formal and non-formal education and training equivalent to at least a secondary education; or (2) skilled workers who have become highly competent in their trade or craft as attested by industry. All middle-level learners go through a certification process as promulgated in the Philippine TVET Quality Framework (PTQF) to evince competency. (TESDA NTESDP, 2011)

Higher education is managed by the Commission on Higher Education (CHED). It is responsible in the formulation and implementation of policies, plans and programs for the development and efficient operation of the higher education system in the country. It focuses on baccalaureate degrees, graduate and postgraduate programs and offerings toward developing professionals and high-level manpower.

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II. Delivery Modes of TVET Mid-Level Education

Mid-Level Education or TVET is delivered across the country through a network of public and private institutions through the following modes (TESDA NTESDP, 2011):

1. **Community-Based** – training delivery is conducted at the local/ community level, mostly in partnership with the local government units (LGUs) and the non-government organizations (NGOs); any individual of any level or age can join these programs.

2. **Enterprise-Based** – training programs are implemented within companies/ firms; individuals are required to be High School graduates to join these programs.

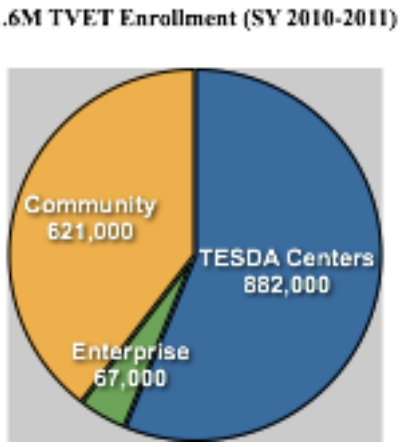

Figure 1. TVET Enrolment by Delivery

3. **Center-Based** – refer to the delivery of training programs by the Technical Education and Skills Development Authority (TESDA) Regional, Provincial and Specialized Training Centers as well as private training centers; individuals are required to be High School graduates to join these programs.

For school year 2010-2011, there were an estimated 1.6 million enrolled in Mid-Level Education where the majority consisting of 882,000 students were enrolled in a TESDA training center (Figure 1).

III. TESDA Embraces E-Training as a New Mode of Learning

TESDA training centers are popular because it is recognized as the authority of TVET in the Philippines. Being responsible for the overall management and direction of the TVET system, it handles the following major tasks in the country (Peano, 2008):

1. Direction Setting - through TVET policies and plans and information;
Standard Setting and Systems Development - in the form of TVET programme registration and accreditation, competency, assessment and certification; and
2. Support - through scholarships, capacity building, technical assistance and TVET delivery.

Joining institutions worldwide that are maximizing and harnessing the power of the Internet and the use of ICT, TESDA has identified in its National Technical Education and Skills Development Plan (NTESDP) of 2011-2016 that it must integrate ICT in vocational education:

The TESDA Technology Institutions (TTIs) and other selected private TVIs shall be utilized for the modeling and piloting of training in new and higher technologies. The integration of ICT in TVET offers unprecedented opportunities for TVET system to expand its capacity and to enhance and facilitate interaction across geographic distance to achieve greater learning objectives. The development of new broadband communication services and convergence of telecommunication with computers have created numerous possibilities to use a variety of new technology tools for teaching and learning system.

In 2011, TESDA engaged the TVET system in a bold step towards broadening access to TVET by embracing e-training and to enable a blended learning TVET program. It conceptualized the TESDA Online Program as a initiative to reach thousands of Filipinos globally through ICT. With this, TESDA aims to provide more training through technology-driven and technology-managed learning environments and to improve the teaching and learning process.

IV. Issues on Shifting from Classroom Training to Online

With the objective of reaching more trainees, TESDA, just like many learning institutions, tapped the power of ICTs and decided to move training online. To date, TESDA offers over 200 courses on 15 sectors (Table 1) at its training centers. Admission into these courses requires those interested to fill out an application form and undergo pre-assessment. Once admitted, trainees attend training at the center to acquire the competencies defined by TESDA. Typically they follow short-term courses, spanning anywhere from 6 to 24 months. Once courses are completed, trainees must pass a performance / trade test and a written exam. After successfully passing the assessments, trainees receive National Certificates or NCs.

Table 1. TVET Sectors

15 Sectors
Agriculture and Fishery
Automotive
Construction
Electronics
Footwear and Leather Goods
Furniture and Fixtures
Garments
Health Social and Other Community Services
Heating, Ventilation, Aircon Refrigeration (HVAC)
Information and Communications Technology (ICT)
Land Transportation
Maritime
Metals and Engineering
Processed Food and Beverages
Tourism / Hotel and Restaurant

The current admissions-training-certification process was analyzed and key observations surfaced if these courses were to go online:

1. On the course duration

Short courses that were typically learned in 6-24 months cannot be delivered the same manner if it was online. An online learner will not stay online for 4-8 hours, for 6-24 months.

2. On the training mode

With the nature of courses being under TVET program, courses are highly skills oriented. It is expected that trainees will need to practice skills using facilities and specialized equipment available at training centers.

3. On the assessment

Certification cannot be done online. A performance / trade test is required to prove competency of skills to earn National Certificates (NC).

V. Strategies to Design the TESDA Online Program

The effort to move TESDAs TVET programs online required rethinking of their course delivery, methodology, and redesigning their training model. The following strategies were defined to guide the planning, development, and implementation of the TESDA online courses:

1. Redesign the educational Model to fit online mode

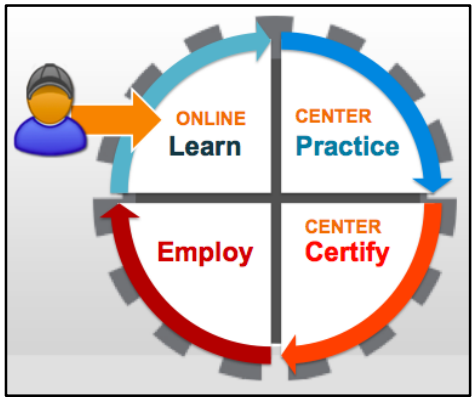

Figure 2. TESDA Online Program Hybrid Learning

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Research has shown that more successful and effective e-learning programs are those that aim to strengthen content knowledge and not develop new skills.

Assessing the limitations of e-learning technologies and the nature of TVET courses, it is acknowledge that not all content in the current TESDA courses can be placed online. The strategy was to segment the training activities of the student.

Center-based training will have to apply a hybrid learning environment following a "Learn-Practice-Certify-Employ" model where a student admitted into a course learns concepts, theories, and procedures online but practice (in laboratories) and certification will remain at TESDA centers. Trainees will be able to access content to learn anywhere, anytime as long as they have a computer and internet connection.

2. Re-engineer courses to fit jobs

Taking a very pragmatic approach, the current courses of TESDA were reviewed to identify the specific jobs certified graduates of TESDA land into. It was clear that today, a TESDA course typically prepares one for several jobs – for instance – a graduate of the Hotel and Restaurant course may land anywhere in waitering, housekeeping, bartending, or valet servicing. The courses are long because the trainee is expected to take all courses to prepare for all jobs.

To fit the online delivery mode, courses that are typically 6-24 months long will have to be have to be redesigned and broken down to fit a 2 to 4 week micro-course focused on one job. Thus, the trainee trains for the job than for the certificate. With this ladderized design for TVET, many students can work immediately in one job, then purse other online courses while while working.

Table 2. TVET Course Graduate Count

TVET Course	Graduates
Consumer Electronics Servicing	6,958
Computer Hardware Servicing	32,302
Housekeeping	37,040
Food & Beverage Services	32,841

3. Select courses "in-demand"

TESDA offers over 200 courses at its training centers, but just a few had to be prioritized and selected as pilot courses for the online program. The main criteria for selection was that the course had to be "in demand". Specifically, either the course must have a high number of graduates or the course is currently a popular industry requirement.

Evaluating TESDA's 2005-2011 TVET Statistics (Table 2), four courses were identified to work on: Consumer Electronics Servicing, Computer Hardware Servicing, Housekeeping, and Food & Beverage Services. Electronics was specially selected based on popularity, while the other three were selected based on the high number of graduates.

VI. The First Philippine Massive Open Online Courseware (MOOC) for TVET

The Massive Open Online Courseware or MOOCs are a more recent form of online course development that emerged from formats that relied on posted resources, LMS, and VLEs. According to MOOCs are the educational buzzword of 2012 (Daniel, 2012). A MOOC is a course that is free, open, distributed and supports life-long networked learning. It has course materials, participants, a start and end date; but it is not a school. The MOOC is built for a

world where information is everywhere, and a click away – a world where internet connection gives access to a large amount of information.

The MOOC has divided into two types which are known as the cMOOCs (Connectivist MOOC) and the xMOOCs (traditional MOOC). They are so distinct in pedagogy that it is confusing to designate them by the same term (Hill, 2012). The first course carrying the name MOOC was offered in 2008. The pedagogical style of the early courses, now called cMOOCs, was based on a philosophy of connectivism and networking. By design, cMOOCs enables students to acquire new information not only from course material, but from participating with social media (i.e. blogs, twitter) and collaborating with social networks (i.e. posting comments, Q&A forums).

xMOOC	cMOOC
Open	Open
Free	Free
Canned content	Fragmented Content (over the web)
Centralized discussion forums	Distributed forums (learner created blogs / microblogs)
Knowledge transmission and duplication (through videos, courseware)	Knowledge creation and generation (through social media, web links)
Behaviorist (mastery, duplication)	Connectivist (social, collaborative, networked)

Table 3 Comparison of xMOOC and cMOOC

The cMOOC is quite distinct from the new wave of xMOOCs evolving in 2012 which follow a more behaviorist learning approach. Since early 2012, top U.S. universities such as Stanford Universitiy, MIT, Harvard and UC Berkeley have been offering free, chunked courses through open sites like Udacity, edX, and Coursera. In September 2012, Google offered its first xMOOC on its own open-source platform called Course Builder. By design, xMOOC lessons are lectures, chunked into roughly 15-minute video segments launched every week.

By comparison (Table 3), the cMOOC design focuses on knowledge creation and generation among networked learners while the xMOOC design focuses on a more traditional learning approach through video presentations, short quizzes and testing.

The MOOC is one way of learning in a networked world (Cornier, 2010) with the power to reach many and provide access to education. TESDA has patterned its implementation on xMOOCs to provide free, open, online TVET education to anyone, anywhere in the world. The TESDA Online Program is the First Philippine Massive Open Online Courseware (MOOC) for TVET. The MOOC runs on Moodle at http://www.e-tesda.gov.ph/. Students must select a course and register themselves to have access to course content (Figure 3).

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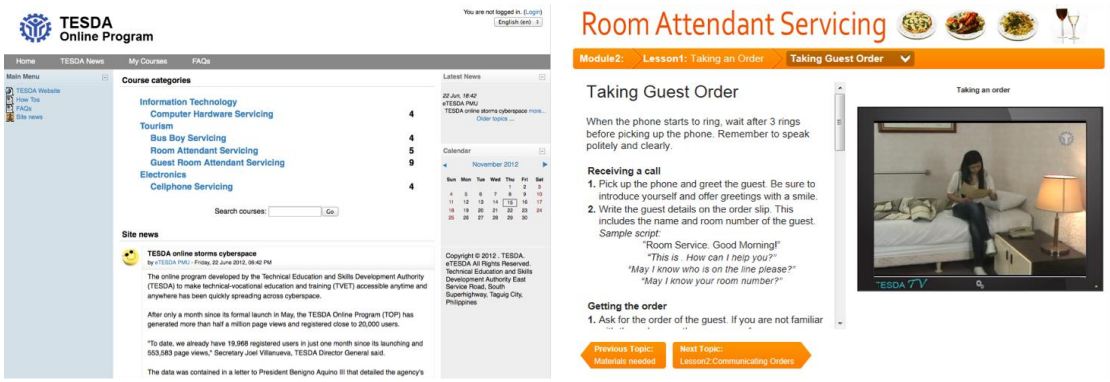

Figure 3. TESDAs MOOC through Moodle

Anyone from any part of world can access Tesda courses online for free. The contents are accessible for people to read, watch videos and even take quizzes. Everyone works in their own space, following their own pace as there is no defined schedule. There is a defined learning path, as indicated by the course outline, but there is no right or wrong way to go through the course. Students can choose what they want to do and how they want to participate. If a student wants to jump across topic to see what is ahead, they can. And if a student wants to revisit a video to practice a skill, they can repeat it any number of times.

There is no facilitator present to check whether the student read a specific material or took the quiz. Although, it is acknowledged that role of facilitator in learning is important, the Tesda MOOC was designed without any external facilitator in the learning process. Rather, the facilitator is infused in the course through the narrated instructional video demonstrations where the facilitator is deemed as the expert who teaches the best techniques for the skill.

VII. Results from implementation (May – October 2012)

The TESDA Online Program was launched May, 2012 with the four pilot courses. Data on site access, registration and enrollment were tracked though Google Analytics.

1. Site Access

From the time of launch to September 28, 2012, there were 161,355 site visits with the top four from the Philippines (137,000), Saudi Arabia (7,200), USA (3,100), and UAE (2,500). Furthermore, there were 113,007 unique visitors and 1,467,928 page views.

2. Registration

From the time of launch to November 5, 2012, there were 46,172 registered users, where 3673 were overseas registrants.

3. Enrollment

Table 4 shows the number of students who went through regular enrolled at the TESDA center in 2011 and the additional number of students who enrolled online in 2012. In six months, the TESDA Online Program increase enrollment by an average of 11%, reaching 20% more students in Computer Hardware Servicing, 10% more students in Room Attendant Servicing, 7% more students in Guest Room Attendant Servicing and 4% more students in Cellphone Repair.

Table 4. TESDA Online Program Enrollment Data (May - Nov, 2012)

E-COURSE	Enrolled Online (2012)	~Enrolled Tesda (2011)	
Computer Hardware Servicing	3563	18000	20%
Room Attendant Servicing	863	9000	10%
Guest Room Attendant Servicing	615	9000	7%
Cellphone Repair	685	18000	4%
TOTAL	5726	54000	11% +REACH

The increase in enrollment or reach in just six months shows that the TESDA Online Program has much potential towards broadening access to TVET through e-training. It is successful in establishing a new mode of delivery for vocational education as the enrollment numbers continue to increase daily.

TESDA has identified that top beneficiaries of TVET includes primarily the high school graduates, secondary school leavers (OSYs), the unemployed, employed but needing upskilling / reskilling, and displaced workers who lost their jobs because of closure of establishments, retrenchment or laying-off. Other potential TVET clients include college undergraduates and graduates who want to acquire competencies in different occupational fields and returning overseas Filipino workers who decide to discontinue working abroad. Vocational training courses improve the employment prospects of these individuals.

TESDA's MOOC enables a technology-driven and technology-managed learning environment for adult training, accessible not only in the Philippines, but to anyone interested in learning TVET for a second chance towards employment.

VII. Recommendations

As for future steps, TESDA has identified additional courses to launch online including Caregiver, Culinary Arts and Bartending. More work has to be done redesigning courses and creating content for effective online learning. TESDA also intends to extend its work from MOOCs to other information systems such as content management systems, LMS, and virtual courseware.

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