

A Results-Based Monitoring and Evaluation Framework to Determine Performance and Success of ESD in TVET: The Case of the Philippines

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ABSTRACT

This paper advances a design of a monitoring and evaluation (M&E) framework to help determine the performance and success of ESD (Education for Sustainable Development) program of TVET (Technical Vocational Education and Training) as applied to micro, small and medium enterprises in the Philippines. The M&E design, which is premised on results-based management principles, will particularly address the rubber, furniture, and plastic industry sectors. The proposal emphasizes the need to monitor and evaluate the program to get the desired results. The formulated design will show how performance and success of the program can be measured empirically through processes that employ robust methodology and rigorous research techniques. It will be of value, in particular, to the ESD program implementation of TVET as it will provide M&E guidance to businesses, communities, and institutions, especially those linked with TVET institutions.

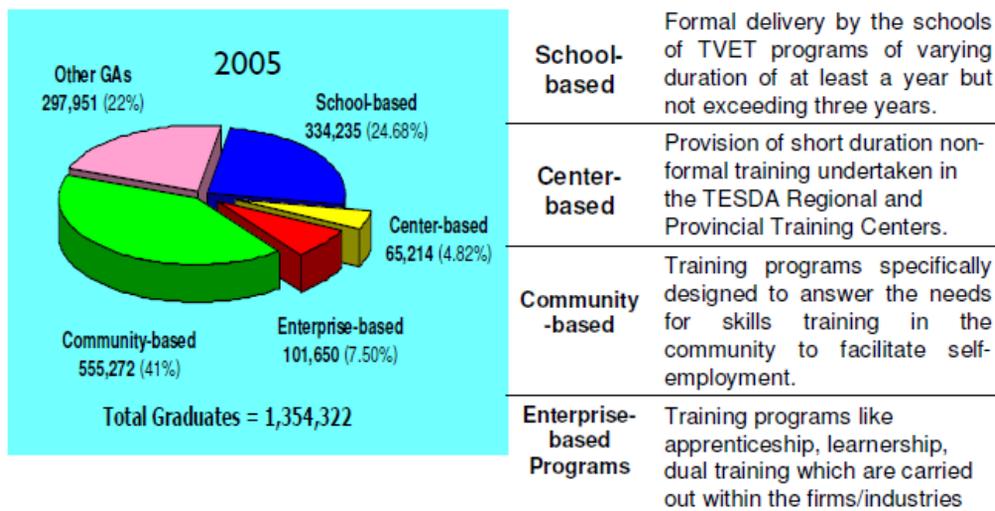
INTRODUCTION

Development intervention in education is an instrument used by the global community to improve living conditions in many parts of the world. In line with the task of achieving the United Nations Millennium Development Goals (MDGs), the international community works laboriously to reduce poverty, stave off hunger, and improve socio-economic well being of people through intervention programs. The Technical Vocational Education and Training (TVET) system is one of the programs that various countries implement to help achieve the MDGs.

TVET provides education and training opportunities to prepare students and clients for employment. It addresses the skills training requirements of people to upgrade or even develop new competencies -to enhance employability and improve productivity. In the Philippines, the Technical Education and Skills Development Authority (TESDA) plays the role of being the sole authority, enabler, manager and promoter of TVET (Syjuco 2005).

Figure 1 shows the size of graduates (1,354, 322) of TVET in the Philippines in 2005. In 2008, it has risen to 1,812,828 (DOLE, 2009). Basically, four (4) modes of TVET delivery system are in use: school-based,

Figure 1. Extent of TVET's graduates in the Philippines, 2005: TVET delivery modes



(Source: Syjuco, A. 2005)

center-based, community-based, and enterprise-based. In 2005, there were already 4,510 TVET providers (techno-vocational training providers), 62% of which were private, as shown in Table 1. By all indications, TVET is continuously progressing and appears to perform according to established goals.

In the ESD program alone, Talavera (2009) noted that the number of certified practitioners in the refrigeration and air conditioning (RAC) and mobile air conditioning (MAC) has grown from less than twenty thousand (18,354) in 1987 to more than 400,000 in 2008. He inferred that the “quality of human resources has been enhanced by more than

twenty-five times”.Notes: LGUs –local government units; HEIs/ SUCs – higher education institutions/ state college and universities; TESDA TI – TESDA training institutes; DepED –Department of Education

But how can TESDA -much more, the government, determine if it is really achieving the ESD-TVET goal? How can the project proponents and the stakeholders in the program identify whether the desired performance of the project is being achieved, with empirically strong evidence to back it up and, not just based on the number of people given certifications?

Table 1. Extent of TVET's reach in the Philippines; TVET providers (Adaptation from: Syjuco, A. 2005)

TESDA TVET Providers				
Public	Types	Units	(%) share	Total %
	LGUs	844	49	38
	HEIs/SUCs	146	9	
	TESDA TI	121	7	
	DepED supervised schools	259	15	
	Others	344	20	
	Subtotal	1,714	38	
Private	-	2,796	62	62
Total Providers		4,510	100	

(Source: Syjuco, 2005)

This study argues that the achievement of goal or aim should be the benchmark by which the success of an activity or endeavour must be measured. Otherwise, if a goal or aim will just serve as a hollow rhetoric to signal the formulation or start of a collective human endeavour, then it might be futile to have a goal at all. Yes, achievement of a goal per se may not be foolproof realistic or totally attainable but determining if one's endeavour is resulting toward the attainment of planned targets or program objectives would be a good measure to judge whether the effort is worthwhile in the first place.

It appears that no public and private organizations today, such as TESDA, exist without the vision-mission-goal thing. It is a global practice and one might be out of place if it has none. But vision and mission, just like goal or aim, should not remain a rhetorical wish-list expression. It shall be transformed into a measurable endeavour that tells one results are being achieved and not just outputs being produced.

The mechanism for M&E is argued here as an integral part of the implementation of a policy, program or project. This is offered as a way of showing empirical evidence that the ESD-TVET project, for instance, is achieving its established targets and results. It shows success more 'visibly' and identifies failure more concretely. An adaptation from Osborne and Gaebler (1992) puts it more in a succinct way;

WHY SHOULD PROGRAM PERFORMANCE BE MEASURED?

Proposing a framework for determining success and performance of ESD-TVET

In implementing development interventions, countries put together a system of counter checks and balances to see that results of implementation are measured and whether programs are performing according to intended objectives set at the planning stage. The purpose is to give feedback to proponents and stakeholders about the programs' effectiveness (Rist R. and Stame N. 2006, Zorzi et. al., 2002, 2003). This ensures that the use of resources is worthwhile and future interventions are planned with a certain

measure of success based on what was learned from previous programs.

The use of monitoring and evaluation (M&E) is a requisite for most of development interventions. An M&E framework is, ideally, a part of the design and plan of development interventions (Kusek, J. and Rist R. 2001). Recently it is a main requirement in all policies, programs and projects of the World Bank (WB), Asian Development Bank (ADB) and international donor institutions, such as JBIC, CIDA, and USAID, among many others.

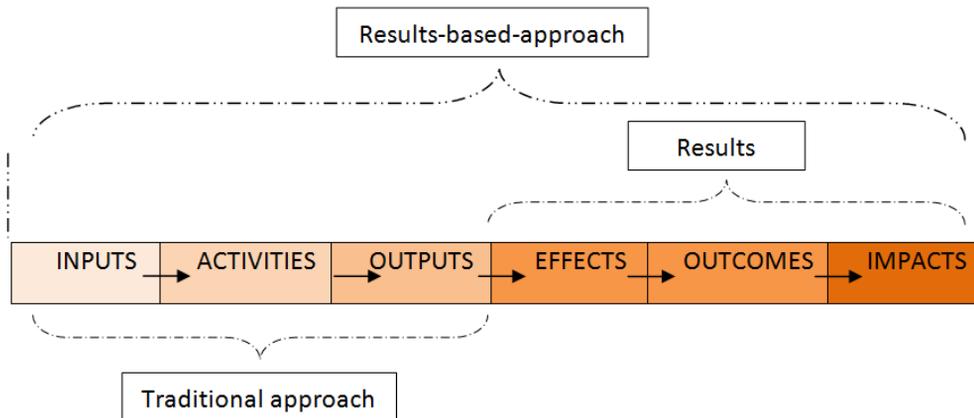
The illustration in Figure 2 shows how results-based M&E differs from the conventional way of assessing programs. In the traditional practice, the range of performance is measured from inputs-to activities-to outputs. This system is limited because the main concern of management is the production of deliverables (outputs) from the resources (inputs) that are acted upon by the processes (activities). The results that the interventions make, however, are not typically assessed, such that the measure of effectiveness and performance is not complete. The practice is short in determining whether the planned objectives are met and achieved, and attribution as to whether the intervention (development project) itself really caused the change is ambiguous.

The results-based approach is concerned with assessing performance and success of programs by focusing on results. Results are analyzed, measured and compared with the set goals. This includes looking at the short term (effects), intermediate (outcomes), and long term (impacts) results of the intervention in the identified stakeholders, as well as the change in 'environment' where intervention is made.

As an illustration, in the design and planning of an educational program (People to People Educational Program) aimed at promoting multicultural understanding in Czech Republic, 'achieving an increased tolerance towards other cultures' is established as main goal (Figure 3).

This goal can be the result (or impact) that the intervention wants to attain. Results-based management principles require that assessment and

Figure 2. Results-based approach to determining performance of development intervention programs -compared to the traditional approach (Source: Santos, R. 2010)



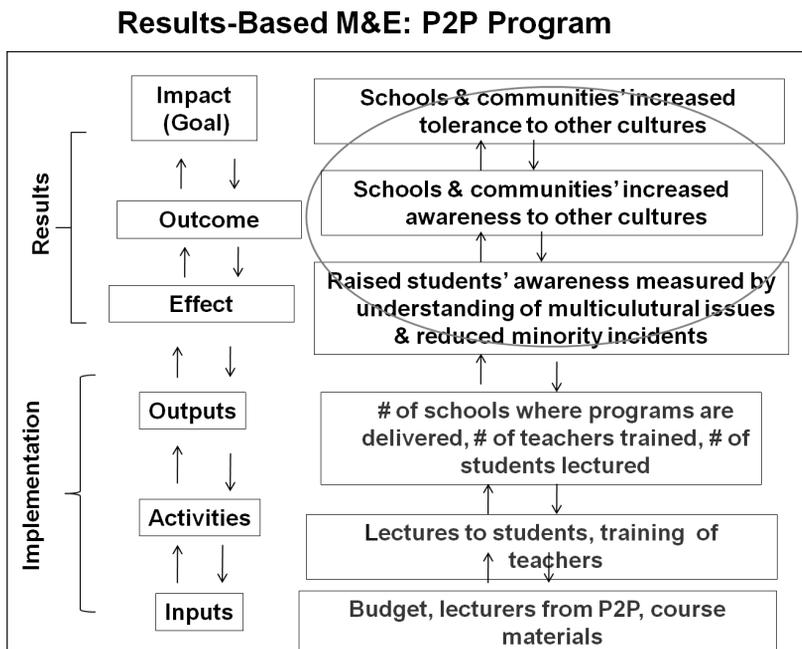
measurement are made to show that increased tolerance is actually achieved. It does not just keep track of how many lectures are delivered to students; how many teachers are trained; or how many schools are administered

the program, but the system analyzes and evaluates, as well, the results of the program through measurable indicators involving stakeholders and the enabling environment brought about by it. On top of these, the process can, by some measure, demonstrate that the attainment of goal is attributed or not to the P2P program itself -and thereby establish causality. This is

done through a rigorous research process that is made part of the M&E design.

Using these principles as backdrop, the paper advances a design of M&E framework to complement the ESD program of TVET as implemented by TESDA in the Philippines.

Figure 3. Sample results-framework of 'People to People Program' (P2P Program), an educational program designed to increase intercultural harmony in Czech Republic (Adaptation from: Santos, R. et.al. 2008)



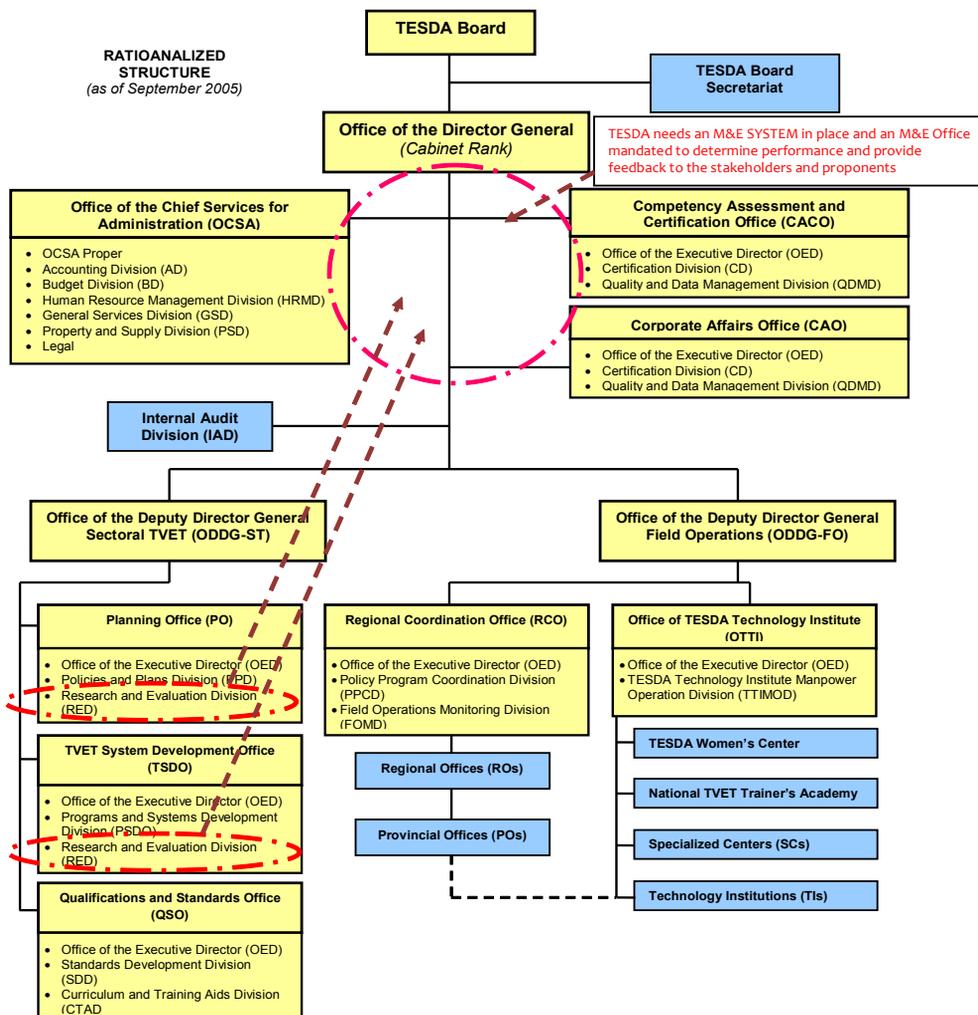
Looking inside TVET in the Philippines: What the present system for determining success and performance of TVET programs reveal?

The TESDA organizational structure is shown in Figure 3. TESDA is identified as the sole policy-making body of TVET in the Philippines. However, based on the published hierarchy of roles and functions, there seems to be a weak link between implementation and determination of performance in the program. The existence of Research and Evaluation Division (RED) in both the Planning Office (PO) and the TVET System Development Office (TSDO) does not guarantee a strong M&E system that is in place in implementing the ESD program.

As in other government agencies, the practice in TESDA maybe that focal point personnel, who are tasked to do other works as well, are manning the monitoring and assessment of the program implementation. And normally, reality shows that non-related tasks are the ones attended to with priority by these personnel, although the designated job should be carrying out the research, implementation and maintenance of the M&E. Apparently, a specifically designed M&E system is not in place to complement the implementation of the program. This makes determining performance ambiguous, at best, inconsistent.

An M & E system (or as used in this paper, framework) built specifically for the ESD program, or even

Figure 4. TESDA organizational structure. The TESDA Board is the highest TVET policy-making body in the Philippines (Adaptation from: Sijuco, A. 2005)



the whole TVET Philippines itself, is suggested to enable the agency to operate a credible monitoring and evaluation program. On top of this suggestion, a definite M&E office is ideally needed within the TESDA organization, preferably working directly under the Office of the Director General and aligned with the Certification Assessment and Certification Office (CACO).

The use of performance measures, as provided for by a working M&E system, helps track performance and forecast future outcomes, which are vitally important for success. Measuring performance is a hallmark of an effective, innovative and high performing public sector. An M&E system design that is premised on results-based management principles offers efficient system. It can serve as a roadmap for development that links performance management, project monitoring and evaluation and budgetary frameworks into an integrated management system. This is what TVET Philippines needs, not just for ESD, but the TVET program in general.

Proposed M&E framework for ESD of TVET Philippines

A design of a monitoring and evaluation (M&E) framework to help determine the performance and success of ESD program in TVET as applied to micro, small and medium enterprises in the Philippines is presented below. The sectors in focus are the rubber,

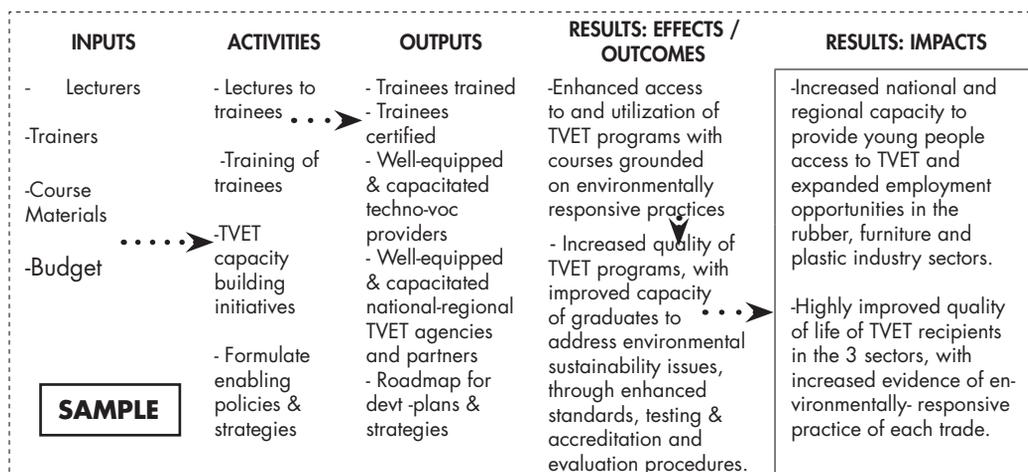
furniture and plastic industries and its relationship with the TVET programs. However, in the design of M&E framework presented herein, it is believed that a system which covers the whole TVET Philippines Program is more desirable. A country-wide policy or program shall be equipped with a built-in M&E framework to begin with.

The proposed framework is based on a hypothetical determination of the theory of change for the program -referred from its published vision-mission-goal statements. The more ideal process, however, is for the M&E team designers to sit down with TESDA and through participative actions, determine the theory of change and collaboratively establish the M&E system of the TVET program.

The M&E Framework is designed to collect and provide information that will be used to:

- Track progress on implementation of all components of ESD-TVET program,
- Identify gaps and weaknesses in the service and training provisions,
- Plan, prioritize, allocate and manage resources,
- Measure the effectiveness and efficiency of training,
- Improve program implementation through application of ICT,
- Monitor & evaluate the impact of the ESD-TVET program on trainees and communities, and

Table 2. Logic Model for TVET in the Philippines:
Theory of Change for ESD in the rubber, furniture and plastic industry sectors



SAMPLE

- Provide feedback on performance and success of the program to the stakeholders, based on a set of criteria identified by ESD-TVET, among others.

These functions are hinged on the goals or impacts that ESD-TVET has targeted to achieve, such as;

- Improved Access and Equity in TVET
- Improved Assessment and Certification
- Decent and Productive Employment
- Enhanced Employability of TVET Graduates
- Improved capacity of the people to address environment and development issues
- From these expressions of the ESD-TVET aspirations, the Theory of Change model or Logic Model is derived and shown in the matrix of Table 2.

The Theory of Change model is a logical representation of the aspired menu of changes or the ‘envisioned future’ that the ESD-TVET program intervention is designed to accomplish. Changes include the effects in people or the community, and the ‘enabling environment’ where change can take place. The model emphasizes the results that the program wishes

to achieve -placed in strategic position relative to other components of the intervention, such as inputs, activities, and outputs.

The Design Matrix in the succeeding tables (Tables 3, 4, 5 and Table 6 in the Addendum) illustrate a more detailed process of crafting the evaluation questions that will guide the whole M&E system. The sample is of a quasi-experimental design approach. Only samples are shown here and refinements can be done in the event of actual design formulation -which shall be carried out as a team effort with TESDA proponents.

Descriptive questions are used to elucidate on the extent and scope of intervention, and the change it brings about (Table 6, Addendum). The question “To whom was the program provided?” for instance, can give information on how extensively the intervention was delivered to the recipients. Sub-questions, such as, among others, “How many trainees accredited?” show the extent by which the program facilitated the accreditation of recipients. This manner of deriving information, as part of the M&E system, ensures that empirical evidence of performance are obtained rigorously.

Table 3. Design Matrix for TVET in the Philippines: ESD in the 3 sectors

QUESTION	SUB-QUESTION	TYPE	Measures & Indicators	Target	Baseline
2. Is the ESD-TVET program being delivered to national / international standards?	Does the program conform to DepEd/ TESDA standards? TVET international standards?	Norm	Checklist of conformity with standard	Yes	N/A
Design: This can be time-series comparison. Program was designed to meet standards at inception, however the DepEd/TESDA standards may change over time.					
3. Is the ESD-TVET program being delivered with good practice?	Is delivery of the program by TTIs & others, conforming to organisation standards?	Norm	Checklist of conformity with internal standard documents, including hiring standards	Yes	N/A

SAMPLE 2/4

Table 4. Design Matrix for TVET in the Philippines: ESD in the 3 sectors

QUESTION	SUB-QUESTION	TYPE	Measures & Indicators	Target	Baseline
4. Have the trainees gained an increased awareness of environmental issues related to practice?	What is the mean increase in trainees' awareness as a result of training intervention?	C & E	Pre- and post test	Yes	Yes
	Do the trainees believe that their own awareness has increased, as compared to subjects in the comparison group?	C & E Descr.	Pre- and post test with comparison group Focus group	Yes	Yes
	Design Data Sources Sample or Census Data Collection Instrument Data Analysis		Pre- and post test RP DepEd/TESDA Standard document, observation Surveys Statistical comparison		

SAMPLE 3/4

Normative questions (Tables 3) are made to show if the intervention program is carried out according to standards and the acknowledged criteria of performance. This part of the M&E system gives information to the proponents on how the program is performing and achieving its targets. Questions, such as “Is the ESD-TVET program being delivered to national / international standards?” can determine how the intervention is administered relative to accepted norms and benchmark standards.

On the other hand, cause and effect questions (Tables 4 & 5) are crafted to seek evidence that the observed changes are attributed to the program. This is called attribution or proof of causality. This provides evidence that the program is the one that caused the change and not other factors outside the intervention.

Table 5. Design Matrix for TVET in the Philippines: ESD in the 3 sectors

The M&E Matrix designed hypothetically in Table 7 & 8 (Addendum) presents a framework for continuous

QUESTION	SUB-QUESTION	TYPE	Measures & Indicators	Target	Baseline
5. Is there evidence of environmentally-responsive behavioural change and practice as a result of the program?	What is the number of cases of environmentally-responsive practice among graduates, before and after the program; and in contrast to the comparison group, before and after?	C&E	Census of all TVET -ESD techno-voc providers; and a sample of comparison providers	Yes	Yes
	After program completion, do techno-voc providers' administrators believe that the program has made a difference in trainees' behaviour & practice?	C&E	Survey: yearly	Yes	Yes
	Compared to before the programs, what is the evidence of increased activities & practices identified as environmentally-responsive	C&E	Focus group – randomly selected trainees/ techno-voc providers	Yes	Yes

SAMPLE 4/4

monitoring of the program. It serves as a detailed guide for M&E personnel to keep track of the performance of the ESD-TVET implementation. Acting as performance monitoring framework (or plan), it is a matrix that combines in one structure the essence of the (a) Logic Model, which is a framework that shows the results in relation to other components of the intervention, (b) the Design Matrix, which presents the (research) evaluation questions, and (c) other M&E elements, such as the performance indicators and its types; baseline data and targets; data sources; data collection frequency and methods; person/office in charge of collection; and reporting strategy, among others. The matrix, which is an improved variance of the Logframe, is a flexible framework that can be expanded to include some other particulars of M&E, such as units of measure, data disaggregation, or estimated cost of collection, among others.

The above presentation on the basic building blocks of an M&E framework for ESD-TVET implementation is just an initial step towards formulating a credible monitoring and evaluation system. Further works are needed to build on these basics. An M&E system that can help TESDA determine the performance and success of its programs based on empirical evidence is possible through this process.

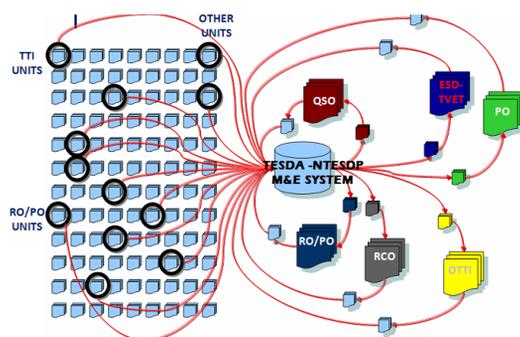
ICT and M&E System for ESD-TVET

ICT can be an indispensable tool for the M&E system designed for ESD-TVET programs. Its use can extend from the design and planning of the training programs, to its implementation and management, up to the monitoring and evaluation and presentation of the results of the program. Figure 4 illustrates graphically how ICT can help ESD-TVET implementation in TESDA. Implementation can be harmonized and systematized comprehensively through the use of organized system of data retrieval and management. This has a high utility level especially in the M&E system. Performance data collecting can be harmonized not only in national and sub-national (regional) levels, but across institutions, sectors and programs (Lozari, E. 2007).

Project Implementation and Management: ICT can revolutionize the project management process of ESD-TVET programs. Web based-based tools are especially valuable in speeding up communication, lowering relative communication costs, and broadening learners' access to information. Project

management applications make possible detailed documentation, easier data organization and retrieval, and provide a secure platform of communication and information exchanges among team members.

Figure 5. ICT has a high potential in establishing a credible M&E system for ESD-TVET



(Adaptation from: Lozari, E. 2007)

Program Monitoring and Evaluation: A well-designed database system can deliver organized data for one or multiple uses, facilitating comparative measurements and monitoring over a period of time. ICT can provide significant assistance to TVET instructors in the assessment process of a training course – software may be developed to administer, score, evaluate, and record performance results for objective course examinations. These records help instructors to monitor the students' progress, as well as allow program developers to identify trends in order to improve teaching. Similar tools may be used in a greater scope for physical or digital (online) data gathering (e.g. surveys, student assessment of trainers), statistical measurements and monitoring, database management, and institutional research.

Program Design Collaboration Tools: ICT collaboration tools facilitate the process of creating a training program or curriculum. ICT has proved useful in gathering and consolidating teams of stakeholders in order to construct a clear strategy and work process for training, as well as documenting the design process. The design of ESD-TVET programs can include the design of support ICT platforms and tools. Common ICT tools include computer-assisted or computer-based instruction; another approach is the online or distance-learning program which requires that the conduct of the training and the transfer of information and instructional materials be web-based.

Reporting and Audience Engagement: ICT has made knowledge a viable resource -it can be a driving force in developing within ESD-TVET an outlook of continuous, flexible learning. The use of ICTs in designing a presentation interface is greatly improving the way stakeholders can appreciate the results of a program, evaluate its effectiveness, and give feedback for the reorientation of the teaching/learning strategy and development of new programs. Social media, for example, has brought community engagement to a deeper level, facilitating interaction among people who are actively engaged in the program as participants, training specialists, program planners, TVET policy-makers, managers and administrators of learning institutions, program evaluators, researchers, and other stakeholders in ESD-TVET.

CONCLUSION

The proposal for an M&E framework that can support ESD-TVET implementation in the Philippines is discussed and illustrated in the study. It provided an overview of the value of incorporating a mechanism for monitoring and evaluation in any system of government functions -for policy, program or project being planned and implemented. The example enables understanding of a system by which monitoring and evaluation of performance can be carried out for ESD-TVET. It emphasized that it is a requisite for providing evidenced-based management of the project.

The framework is proposed for implementation of ESD-TVET in micro, small and medium industry sectors, namely: rubber, furniture, and plastic industry sectors. However, the paper pointed out that a need for a comprehensive M&E system in TESDA exists.

The paper also highlighted the great potential contribution of ICT in supporting the establishment and implementation of a specific M&E system for ESD-TVET.

As a recommendation, an independent evaluation of the ESD-TVET Program can be done by utilizing an external body of evaluators, aside from an M&E system that is integrated within the TESDA management domain. This will enable determination of performance and providing evidence on the achievement of results through independent means. This process, however, was not covered in this paper.

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