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A Professional Training Guide on Improving the Educational Quality in the Tertiary and Vocational Education Sectors of Developing Countries

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ABSTRACT

Sources highlight the structural issues of the tertiary, vocational and secondary education (TVSE) sectors in many developing countries due to poor cognitive abilities of academic resources in developing educational/training practices. This considerably influences the quality assurance procedures in curriculum development, teaching, learning, assessment, and other academic practices. Accordingly, this study intends to develop a new training guide/manual to let such academicians perform various educational/training practices/tasks. A comprehensive literature review was carried out through relevant scholarly academic articles, and a series of interviews, expert discussions and consultative workshops were conducted among 25 experts to collect relevant data. The data was analysed using thematic qualitative approaches to identify the crucial factors/areas and competency elements (CEs), and a set of expected competency outcomes (ECOs) were then developed through problem-based and action-oriented communication strategies. Expert reviews were conducted on the entire development process to validate the outputs. The study has produced a new training guide/manual, including 15 ECOs as the key elements. The study has also produced a sample lesson plan which describes how the learning areas/contents are methodically linked to the ECOs. The experts' review outcomes substantiated the validity and reliability of the developed training guide. The proposed training guide can be an ideal tool for the TVSE sectors in enhancing the efficiency, productivity, and quality of their educational practices towards meeting the required standards of the industry/community-based outcomes. The study outcomes significantly contribute to controlling the deviations of many training programmes from the expectations of various industry/community sectors. This leads to reinforcing the existing policies of TVSE institutions and upgrading reskilling/upskilling strategies in a range of fields to find more effective remedies for ensuring sustainable practices in evolving situations. This paper discusses some more implications and future scopes elaboratively, which can be almost applicable/comparable to the contexts of developing countries.

KEYWORDS: *competency enhancement, quality assurance, training development, vocational institutes, tertiary education, developing countries*

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1 INTRODUCTION

In the context of economic growth, stability and achieving future goals of developing nations, education plays a critical role (Silva et al. 2018; Manoharan et al. 2022a). The effectiveness of any industry/community sector in any country greatly depends on the education and training practices, whereas the competencies of the trainees are the critical components in addressing evolving challenges and opportunities related to industrial, environmental, and community-based processes/flows, lifestyles and living standards (Muya et al. 2003). Importantly, employees in various job positions across a variety of industry sectors in many developing countries often lack the necessary skills and employ ineffective work methods, which causes industrial firms to run into issues associated with finances, quality, productivity, and profitability (Fernando et al. 2016). As a result, the intervention of firms from overseas increasingly dominates domestic employment and production in such developing countries (Manoharan et al. 2022b).

The industry and education/training sectors need to take into consideration adding new or revising existing characteristics/attributes to the industry practitioners/workers in a wide range of job categories for transforming the current practices to substantiate the long-term-based sustainability of the industry/community sector. Effective training programmes are of paramount importance in this regard to boosting employees' competencies. However, a number of sources specifically point to structural problems in the tertiary, vocational and secondary education (TVSE) sectors as the main causes of problems with a lack of skilled employees in many industrial and community sectors in many developing countries, including India (Mistri et al. 2019), Nigeria (Onyekachi 2018), Vietnam (Dinh & Nguyen 2019) and Sri Lanka (Fernando et al. 2016; Silva et al. 2018; Tertiary and Vocational Education Commission 2018; Manoharan et al. 2022c). Importantly, these studies highlight the fact that the work-related skills of trained people coming out from vocational training institutions are not up to the required standards and expectations of the industry/community in these countries. There are considerable gaps/differences between the exact needs of the industry/community and the outcomes of the existing training programmes delivered

by the training sector of these countries. As a result, unskilled or unqualified employees work as skilled or qualified workers in a variety of job positions without the proper recognition or certifications throughout those countries, particularly in many private industrial firms. This has had a significant impact on the performance, productivity and quality of work operations, processes and flows.

Taking on the nation of Sri Lanka, where the educational practices have been significantly impacted by the recent covid outbreak and the nation's economic crisis, the fact that the country has a free education system from elementary school through university has been a blessing for its citizens for many years. According to World Bank (2015), there are currently over 10,000 public service schools running across the nation, with over 200,000 teachers giving more than four million students free education. Aside from that, there are fifteen state universities covering various faculties functioning in the country to provide free and quality higher education to tens of thousands of students annually who perform well in their advanced-level examinations. Apart from this, many government organisations offer free life skills and vocational training programmes to students who do not get university admission after completing their secondary education. Other significant factors to be considered include various scholarship programmes for students who come from low-income family backgrounds to continue their education, as well as special incentives for teachers and university academics. Even though Sri Lanka has been operating these aspects with such excellence for many years, the consultations with the officials from the Industry Sector Skills Council (ISSC) of Sri Lanka spotlighted the lack of soft skills among managerial and technical level employees working in various industry/community sectors in the country. The discussions with the officials from the Tertiary and Vocational Education Commission (TVEC) of Sri Lanka also point out the absence of efficient training initiatives that specifically address the quality, productivity and safety related challenges faced by different industry sectors. The officials from TVEC also stated that there has been a propensity to provide higher-level training programmes in Sri Lanka without fully meeting the exact requirements of the industry and community sectors.

Tertiary and Vocational Education Commission (2018) emphasises that many of the curricula for training programmes currently in use in the tertiary and vocational training sector of Sri Lanka need to be properly revised, and the curricula for new training programmes also need to be properly reviewed, considering the aforementioned aspects. In order to improve processes related to curriculum development, teaching and learning, it is necessary to utilise quality assurance policies and practices among Sri Lankan training institutions. It should be noted that a training curriculum is similar to the base/foundation and the structure of a building, and that structural flaws can quickly cause the entire operation of the building to fail. It is crucial for curriculum developers to make sure that the teaching resources fully comprehend the subject matter to be covered, the training objectives, the competencies to be tested, the weights assigned to each competency element, the domains of learning to be tested for each element of competencies and the assessment weights to be distributed among those elements of learning domains in relation to the elements of competencies throughout the curriculum. Tertiary and Vocational Education Commission (2018) importantly highlights the poor practices used by many Sri Lankan training institutions when implementing the policies with curriculum development, teaching, learning, assessments and quality assurance practices due to poor cognitive skills of the academic resources working in the TVSE sector in the country. The consultations with academic and administrative resources from the tertiary education sector of the country reveal that there is a lack of systematic training programmes currently available for improving the cognitive skills of such academic resources in developing educational and training practices.

1.1 Problem Statement and Research Gap

Sources highlight the above-spotlighted issues associated with the TVSE sectors of many other developing countries in similar scenarios too (Onyekachi 2018; Dinh & Nguyen 2019; Mistri et al. 2019). Considering these aspects, this study understands that there is a need for efficacious mechanisms to direct academic resources on improving the educational quality in the TVSE sectors of developing countries. This crucial need has not been properly addressed by the relevant commissions or authorities currently

functioning in such countries similar to the Sri Lankan context. Furthermore, this study highlights the industrial researchers' lack of focus on this fact. In light of this crucial fact, this study underlines the crucial need for filling the knowledge gap on what apprenticeship protocols and application approaches should be constructed to advance the attributes in the working practices of institutional directors, academic leaders and teachers employed in the TVSE sector.

1.2 Study Aim and Objectives

In order to address the above-stated problems and gaps, this study initially aims to determine what elements of competencies are the key to enabling institutional directors, academic leaders and teachers to carry out a variety of duties linked to education and training with proactive-based approaches. Correspondingly, the study focuses on the following specific objectives.

- Identifying the key competency elements that are important in upgrading the work attributes of institutional directors, academic leaders and teachers
- Developing a set of expected competency outcomes based on the crucial competency elements for a new training guide
- Developing a sample lesson plan containing key learning areas/content and alignment of mapping to meet the required competency outcomes

1.3 Significance of the Study

The achievement of the above-stated aims and objectives leads the study to develop a training guide/manual for standardising and reforming the educational policies of the TVSE sectors of many developing countries by upgrading the competency attributes of key human resources of TVSE sectors towards addressing the evolving challenges and opportunities in the current and future stages in a constructive and sustainable manner. This could also lead to the opening of a new door for receiving advanced cognitive attributes from decision-makers and policymakers in the TVSE sector by allowing them to perform comparisons, forecasts and comprehensions on competency aspects and work outputs conceptually and practically in future stages.

2 MATERIALS, METHODS AND TECHNIQUES

The qualitative approaches were mainly included in the methodology to identify the

crucial factors/areas that require to be addressed in a training guide/manual based on the study aims/objectives, as illustrated in the research design layout shown in Figure 1. In the initial phase of the study, a comprehensive literature review was carried out through relevant scholarly academic articles and existing curricula of training programmes available for academic leaders and teachers in different countries. On the other hand, a series of interviews, consultative workshops, meetings, discussions and review sessions were held among the experts from academic, institutional and industrial sectors to learn about the most recent practices in the TVSE sectors in developing countries like Sri Lanka. More than 25 experts participated in these sessions, who were selected by assessing their work experience and recent involvement in training development practices for various industry sectors.

The qualitative thematic analysis method was used for the data collected from the above-mentioned methods since it is a recognised method for examining respondents' perspectives, cognitive components, experiences or patterns of ideas using a set of qualitative data. As recommended by Caulfield (2019), this qualitative method was used to assess the recurrent themes, topics, ideas and characteristics in the collected data. The required competency elements (CEs) were examined in this qualitative thematic analysis process for specific characters, and the codes were issued as necessary, as shown in Figure 1. The associated codes between the groups of competencies were then established based on the themes created to avoid CEs from being repeated. Finally, this qualitative analysis process resulted in the final set of significant CEs after a second assessment of the themes and codes.

Based on the identified significant CEs, a set of expected competency outcomes (ECOs) were designed through problem-based and action-oriented communication strategies with concerns about the current practices and the future needs of the TVSE sectors of developing countries. The entire training development process and the outputs were reviewed by a group of experts, and the validation of the training guiding tool was substantiated using these review outcomes.

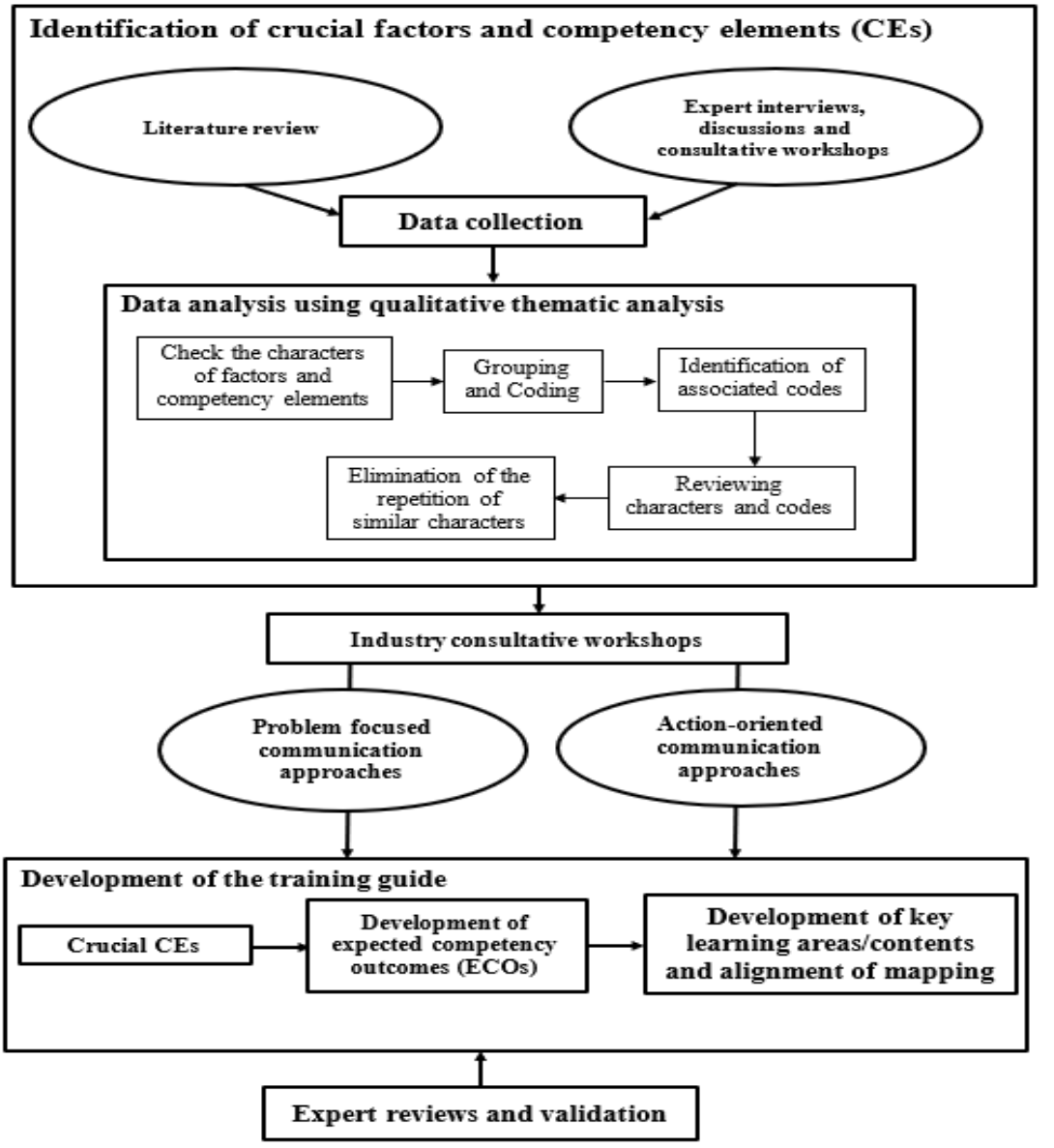

Figure 1. Layout of the Research design

3 RESULTS & DISCUSSION

As the outcomes of the qualitative thematic analysis were applied in the initial phase of this research, as shown in Figure 1, a total of 30 CEs were determined that are significant in upgrading the work attributes of institutional directors, academic leaders and teachers, as mentioned below.

- Identifying industrial needs (CE1)
- Identifying community-based needs (CE2)

- Identifying gaps in training curricula (CE3)
- Comparing training outcomes with industrial and community-based expectations (CE4)
- Grouping competency elements (CE5)
- Designing new training curricula (CE6)
- Developing modern tools and frameworks for new training curricula (CE7)
- Applying new apprenticeship tools and frameworks (CE8)
- Performing mapping alignments in curriculum contents (CE9)
- Choosing/Applying effective teaching methods (CE10)
- Choosing/Applying suitable assessment methods (CE11)
- Monitoring the attention level of students (CE12)
- Performing analysis on students' performance (CE13)
- Measuring the influences of training outcomes on the industrial and community-based requirements (CE14)
- Applying quality assurance practices in academic delivery (CE15)
- Performing peer reviews (CE16)
- Performing feedback surveys and analysis on academic delivery and its outcomes (CE17)
- Reporting actions for academic quality enhancement (CE18)
- Monitoring the actions for academic quality enhancement (CE19)
- Designing terms of references for committee activities (CE20)
- Counselling/mentoring students (CE21)
- Making awareness of career development opportunities (CE22)
- Carrying out education/training-related research activities (CE23)
- Applying effective resource management practices in the training/education sector (CE24)
- Applying effective administration of resources in the training/education sector (CE25)
- Applying effective information and communication systems in the training/education sector (CE26)
- Applying efficient optimisation approaches (CE27)
- Applying practices for the enhancement of worker motivation (CE28)
- Measuring/assessing worker performance (CE29)

- Applying practices for improving worker performance (CE30)

As per the remaining phase of the research design layout shown in Figure 1, based on the above-mentioned 30 CEs, a total of 15 ECOs were developed as the key elements in the developed training guide, as mentioned below.

- ECO1: Identifying the gaps in the existing curricula compared with the requirements of the industry / community
- ECO2: Directing the tasks related to curriculum development processes linking with the requirements and expectations of the industry/community
- ECO3: Applying effective tools and mechanisms in the different stages of the curriculum development process
- ECO4: Applying effective methods and tools for the effective delivery of teaching, learning and assessment tasks
- ECO5: Taking necessary actions for improving the students' attention level in academic activities
- ECO6: Using effective tools and practices for the students' academic performance analysis and reporting
- ECO7: Applying effective mechanisms to link the academic delivery with the expected training outcomes
- ECO8: Comparing the influences of the training outcomes on the fulfilment of the needs and expectations of the industry/community
- ECO9: Carrying out feedback surveys and peer reviews, and analysing the results and taking necessary actions for improving the quality of the academic activities
- ECO10: Developing terms of reference (TORs) for implementing useful policies which may strengthen the academic quality
- ECO11: Involving in various committee activities in a systematic manner to improve the academic quality of the training
- ECO12: Carrying out student counselling and mentoring tasks towards strengthening sustainable practices for maintaining an effective academic environment
- ECO13: Carrying out research activities on education and training for the new normal situations of the industry/community

- ECO14: Using productive-based approaches for enhancing the efficiency of resources in the education/training sector
- ECO15: Applying useful optimisation techniques for the effective utilisation of the resources in the administrative processes in the training/education sector

The mapping between the 30 CEs and 15 ECOs is illustrated in Table 1. The study findings highlight the significance of the developed ECOs to enable the trainees to perform various tasks related to education and training with the proactive-based approaches for upgrading the current practices of the TVSE sector towards addressing the evolving challenges and opportunities in the new normal characteristics / situations.

Table 1. Mapping of CEs with ECOs

CEs	ECOs														
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
CE1															
CE2															
CE3															
CE4															
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As per the above-highlighted ECOs and their mapping with the CEs, a sample lesson plan was developed and described in Table 2 for the proposed training. Significantly, the lesson plan shows how the learning contents and the ECOs are related, whereas the learning contents can be covered through lectures and interactive discussion sessions. The contact hours in the training delivery can be fixed by evaluating additional pertinent factors, such as the setting of learning, the number of participants, their levels of attention, quality assurance/controlling procedures and institutional policies. Based on the characteristics of ECOs, the training assessment tasks need to be designed to make trainees achieve fulfilment under all the ECOs.

Table 2. A sample lesson plan for the training

Sessions	**Key Learning Areas/Contents**	**Expected Competency Outcomes (ECOs)**
1	Development of effective curricula Key areas: Identifying the requirements of the industry, community and society Identifying the gaps in the existing curricula compared with the expectations of the industry/community Categories of competencies that need to be addressed in the curricula Introduction on useful tools and frameworks Development of programme outcomes Development of curriculum structure and credit distribution Development of competency outcomes and elements of competencies Development of detailed teaching and learning contents Curriculum mapping Development of teaching contents and assessment methods Group discussion/activity	ECO1, ECO2, ECO3
2	Effective practices in teaching, learning and assessment activities Key areas: Methods and tools for the effective teaching, learning and assessment practices Methods and tools for the effective monitoring on the academic delivery to achieve the expected outcomes of the curriculum Monitoring on students' attention level in academic activities Students' academic performance analysis and reporting Observations on the outcomes and influences of the training on the requirements of the industry/community Group discussion/activity	ECO4, ECO5, ECO6, ECO7, ECO8

3	Quality assurance tools and practices in academic delivery Key areas: Importance of peer-reviews Satisfaction/Feedback surveys and analysis Reporting and monitoring on the actions Development of TORs and formation of relevant committees/teams Group discussion/activity	ECO9, ECO10, ECO11
4	Sustainable practices for maintaining an effective academic environment Key areas: Student counselling and mentoring Career development opportunities for staff and students Conducting research on education and training Group discussion/activity	ECO12, ECO13
5	Proactive-based approaches for effective resource management and administration in training/education sector Key areas: Effective resource management practices Importance of performance, quality and productivity in job tasks Application of useful optimisation techniques Theories and applications for improving the motivation and performance of workers [Adam's equity theory; Maslow's theory; Alderfer's ERG theory; McClelland's need theory; Goal setting theory; Herzberg's two factor theory; Skinner's reinforcement theory; Vroom's expectancy theory; Skill-Will matrix] Effective mechanisms/tools to measure the job performance of staff Group discussion/activity	ECO14, ECO15

The expert reviews conceded that the proposed training guide clearly specifies the competencies required for the academicians working in the TVSE sectors to efficaciously direct various processes towards the enhancement of the efficiency, productivity and quality of educational practices and their outcomes. Moreover, the reviews noted that the proposed training guide clearly shows what the expected outcomes are of the training and what competencies need to be evaluated. The reviewers also noted that the suggested training manual is eager to be a functional tool for the TVSE sectors of many developing countries, particularly to promptly meet the needs and expectations of the sector in the next normal situations.

4 CONCLUSION & RECOMMENDATIONS

The study has produced a new training guide that can be used to enable the academicians working in the TVSE sectors to apply constructive practices in their job

roles. Importantly, the study findings accentuate that the ECOs presented in the guide are the key elements to reinforce their job process, learning demand and responsibilities of key human resources to handle the structural problems of the TVSE sectors highlighted by recent studies, especially in the developing countries, namely India (Mistri et al. 2019), Nigeria (Onyekachi 2018), Vietnam (Dinh & Nguyen 2019) and Sri Lanka (Fernando et al. 2016; Silva et al. 2018; Tertiary and Vocational Education Commission 2018; Manoharan et al. 2022c), as well as to standardise and reform the educational policies by addressing the challenges and opportunities in the current and future stages at the right direction. The validation of the training guide was affirmed through the expert reviews conducted. Notably, the expert reviews highlighted that the proposed training guide delivers a new template for enhancing the standards of educational practices and policies within a systematic scope through proactive training strategies.

The overall study outcomes will significantly contribute to enhancing cognitive, psychomotor and affective learning domains of competencies of academic directors, divisional heads and teaching resources on education and training related practices within a wide range of scopes. In particular, the deviations between the curricula of many training programmes and the industrial expectations have been the major causes for the issues associated with efficiency, productivity and quality of work processes since they resulted in unqualified workers being employed as qualified workers in numerous job positions without having proper recognition or certifications in many private industrial firms, as highlighted by recent studies (Fernando et al. 2016; Onyekachi 2018; Dinh & Nguyen 2019; Mistri et al. 2019; Manoharan et al. 2022b). As a result of the expected changes in the work practices based on the ECOs presented in this study, the gaps in the existing curricula of many training programmes and the expectations of the industry/community can be considerably filled, and the processes and outcomes associated with teaching, learning and assessment tasks will be reinforced significantly. Accordingly, productive approaches can be seen among many vocational training institutions in enhancing the students' attention level in academic activities and analysing the students' academic performance with the

necessary comparison and review processes. Consequently, the products of the tertiary, vocational and secondary training providers will be able to apply the learnt contents to industrial and community-based activities ensuring the quality, efficiency, productivity and sustainability of work outputs. They will also be able to optimise and utilise the resources and processes with the required cognitive, self-management and transferable abilities. Moreover, the existing policies of vocational and secondary training providers can be polished assuring the academic quality of training programmes, also the research culture in the tertiary education sector can be further strengthened for the next normal situations of the industry/community. Accordingly, the current study outcomes open a new window to address the fundamental and essential needs emphasised by Tertiary and Vocational Education Commission (2018) on rebuilding and reforming the TVSE sector.

Despite the fact that the study findings can be applied to the Sri Lankan context, the findings can be considerably useful for other developing nations to reach comparable outcomes in their TVSE sectors in current/imminent circumstances. The study also suggests further studies into how to deliver training programmes created in accordance with the suggested training guide using quality assurance procedures and practical ICT tools. The study also suggests that future studies should concentrate on monitoring systems with the necessary evaluations or measurements of the outcomes of the proposed training guide. Moreover, future studies can expand the scope and effects of the reskilling and upskilling practices of the industry/community across a wide range to find more effective strategies for addressing the new challenges associated with productivity and technological advancement.

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