

Availability of instructional materials model of the technical- vocational livelihood curriculum implementation for public senior high schools

Ritchie Barrera¹

¹Graduate School, Negros Oriental State University, Philippines. ritchie.barrera001@deped.gov.ph

*Corresponding author

Abstract: This study is aimed at designing a model that will enhance the availability of instructional materials of the Technical Vocational Livelihood curriculum implementation. A descriptive-correlational design was the over-all strategy of the study. In obtaining the necessary data, a researcher-constructed survey questionnaire had been developed which was then later subjected to pilot-testing in the public senior high schools in the division of Bayawan City. The questions which had been developed were focused on the school and the teacher trainers' profiles, their knowledge, beliefs and attitude, their perceived self-efficacy, and the identified restraining and driving forces that affects the extent of availability of instructional materials of the TVL curriculum implementation. Likewise, queries about the extent of appropriateness of work immersion and extent of availability of instructional materials of the strand offered were also developed. All these questions served as exploratory variables for the study. Apparently, the researcher used total population sampling. The respondents included seventy-six (76) TVL teacher-trainers from the twenty-four (24) identified public secondary schools in the three cities of 2nd congressional district of Negros Oriental namely Dumaguete, Tanjay and Bais. This study has revealed that instructional materials are the primary needs in developing the skills of all the learners in the SHS-TVL schools undertaking the successful conduct of all the activities inside the classroom. Therefore, students learning progression is hindered due to insufficiency of instructional resources but considering also other motivating forces to enhance and innovate availability of instructional resources.

Keywords: Senior High School TVL, Teacher-trainers, Senior High School Work Immersion, instructional materials, DepEd Order No.19 series of 2016, TVL specialization, availability of instructional materials

Introduction

Quality education is essential not only for an individual but also for a country's development and economic growth (Hanushek & Woessmann, 2010). This eventually is also the fundamental pillar of human rights, democracy, peace and sustainable development (Kinara, 2014). Skills and knowledge are the engines for any nation's economic growth and social development (Ayonmike, Okenwela & Okeke, 2013). Careful study relative to curriculum research in other countries such as Norwegian vocational education and training has pointed towards severe vocational educational content issues. The main problem is that the educational content is not sufficiently relevant to qualifications in the actual vocations. Vocational firms complain that students are not adequately qualified (Dahlback, Hansen & Halland et al., 2011).

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Since Senior High School Technical Vocational and Livelihood education is now in its third year of implementation in the Philippines, the country is facing with so many challenges as the much-needed facilities, tools and equipment, materials, workshop laboratories, and instructional rooms. According to Ehiamentalor (2011), to achieve the goals of an organization, facilities are those factors that enable workers to function effectively. Olorok (2006) evidently assert that instructional facilities enhance learning experiences and augment an interaction within the learning environment. However, there is still a lack of qualified teachers to teach the specific strand of the TVL track. Shulman (2008) identified the teacher as a significant and primary factor in student learning. These are the notable emerging issues in the SHS TVL schools in the Philippines.

Therefore, with these realized gaps, the researcher decided to conduct this study among the TVL teachers in the different public senior schools in three cities of the 2nd Congressional District in the province of Negros Oriental to assess the extent of availability of instructional materials of the TVL curriculum implementation. Data gathered will be used as basis to create a model that would augment and/or enhance the availability of instructional materials of the TVL curriculum implementation.

Literature review

Historical background of technical vocational livelihood education in the Philippines

In a conference presentation made by De Guzman, 2014 on “K to 12 Basic Education Program, a large majority of our tertiary students pursue a college degree and most likely would land a job that mismatches with their skills and competencies. Based on the latest industry data, more than 650,000 available jobs require technical-vocational skills, but more than a million professionals cannot fill these jobs. The system is producing many professionals annually, and it continues to widen the job-skills gap. The K-12 (Kindergarten to Grade 12) system aims to address this gap by solving skills shortage and high youth unemployment and guide students' career choices. The K to 12 systems in the Philippines was enacted through the Enhanced Basic Education Act of 2013 (Republic Act 10533) to place the Philippine primary education at par with other countries. It addstwo years in high school which are specialized upper secondary education composed of a standard Core Curriculum and Tracks. These tracks are comprised of eight core curricula of learning areas that include Language, Humanities, Communication, Mathematics, Philosophy, Science, Social Science, and Physical Education and Health.

Sarmiento and Orale (2016) made a comparative review of related literature on the Philippines' senior high school curriculum, Japan, and the United States. They found out that these countries' senior high school curricula are intended to prepare graduates of the senior high school program to enter college, become entrepreneurs, and find work in the industry. The study revealed that the Philippines has a more definite senior high school program because it has four definite track as compared to Japan which has only two tracks namely academic and technical-vocational. The United States has indefinite tracks considering that the curriculum varies from one state to another; it is up to these states to decide for their curriculum. The study also found out that there is a stigma among students across the three countries to take the vocational track because of the perception that vocational courses are for low-performing and problematic students. The enrollment in the technical-vocation courses in the United States has declined. In the three countries, finding qualified teachers in Senior High School remains an issue.

The scope of TVL curriculum: Vocational education, or the career and technical education, prepares people to work as a technician in jobs such as a trade or a craft (EdGlossary, 2014). A vocational school provides vocational education at the secondary and higher education levels and is the main focus during the apprenticeship. The essence of Technical-Vocational Education (TVE) provides the recipients with essential knowledge and practical skills necessary for entry into the world of work as employees or as self-employed. In particular, the TVE provides knowledge, skills, attitudes, and values that develop middle-level skills to enable the students to start a business, gain employment, and pursue higher education. It is also called Technology and Livelihood Education (TLE), Technical-Vocational and Livelihood (TVL), or Technical & Vocational Education (T&VE). One of the most critical aspects of TVE is acquiring skills and attitudes for gainful employment in a particular or professional area. Agwubike, Akpomudeye and Bestmart (2007) noted that vocational/technical education is a necessary tool for self-reliance and technological development because its main thrust is applying practical learning techniques.

The curriculum is essential to learning development, capacitating students with the necessary knowledge, skills, and attitude. However, curriculum development must not be a one-time event but a continuing process. Farkas (1993) suggested that curriculum update must be a continuing process, with educators remaining up-to-date and leading the changes. Purcel (1993), on writing curriculum, recommended that changes in the past, and changes that are likely to happen should be considered. This process has been evident in the TVL curriculum in the Philippines. The Curriculum and Instruction Division of the Department of Education ensures that the department focuses on delivering an applicable, responsive, and effective primary education curriculum around which all other strands and offices provide support. Such policy is manifested in the TVL curriculum development. The said curriculum was initiated through the 2010 Secondary Education Curriculum (Department of Education Order No. 76 s. 2010). This move was in response to Section 3 (2), Article XIV of the constitution that states: “All educational institution shall inculcate patriotism and nationalism, foster love of humanity, respect for human rights, appreciation of the love of national heroes in the historical development of the country, teach the rights and duties of citizenship, strengthen ethical and spiritual values, develop moral and personal discipline, encourage critical and creative thinking, broaden scientific and technological knowledge and promote vocational efficiency.”

The study of Talambayan (2008) and the present study are similar because both studies deal with Technical-Vocational programs. However, Talambayan's study dealt with the students' readiness. In contrast, the present study deals with the Senior High schools in implementing the Technology Vocational and Livelihood curriculum, particularly the different strands with its specializations. The present study deals with the competencies that SHS-TVL students should acquire to prepare and equip themselves for the world of work locally and globally to mold them to be academically proficient and creative and critical thinkers.

Extent of availability of instructional materials in the implementation of the TVL curriculum

The Bureau of Learning Resources of the Department of Education is responsible for developing and managing the national education policy framework on learning resources. They formulate policies, standards, and guidelines for the design, development, evaluation, production, and utilization of learning resources across all organizational levels. The acquisition, allocation, procurement, and equitable distribution of learning resources provide access to quality-assured learning resources. When it comes to quality assurance, all resources delivered to the field should be practically ready for use. Inadequacy of teaching and learning resources, for instance, in Ethiopia, is a constraint to the implementation of TVET in public institutions (Hailu, 2011). Particularly, a lack of standard workshops and modern instructional materials affects the teaching of TVET (Bandeled & Faremi, 2012). A corollary effect is the low acquisition of practical skills among students due to ineffective instructional delivery (Dasman, 2011).

In many developing nations, inadequate curriculum resources and outdated equipment hinder the effective implementation of training and teaching programs (Maino, 2013). Teachers' utilization of appropriate equipment, materials, and teaching tools facilitates learning and enhances students' achievements (Umunadi, 2012). However, in most of these nations, instructional materials are inadequate for effective teaching in TVET institutions (Wondaferew, 2012). Such institutions may have insufficient equipment and lack specialist rooms for practical teaching (Ncube, 2014). Similarly, in Kenya, the inadequacy of teaching and learning resources hinders TVET implementation (Indoshi et al., 2010). This inadequacy is expressed in terms of obsolete equipment (Hooker et al., 2011), shortage of material resources (Indoshi et al., 2010; Mupinga et al., 2006), and insufficient time allocation (Indoshi et al., 2010). Automobile engines, sewing machines, computers, computer software, textbooks, stationery, and internet access are often inadequate or unavailable (Mupinga et al., 2006).

Vladimir Quetua, a senior high school teacher at Araullo High School, said senior high school facilities were often lacking (Umil, 2017). In their school, no facilities were provided for some courses such as automotive and baking. A colleague of his had to teach automotive theoretically, without hands-on exercises. As discussed in the preceding literature (Bandeled & Faremi, 2012; Umunadi, 2012; Ncube, 2014), appropriate equipment, materials, and tools such as workshops laboratories, lecture rooms, course, and reference texts are required in the teaching and learning process to yield the intended educational outputs. Curriculum implementation is an

interplay of content, teaching and learning process, provision of support services, and monitoring and feedback activities to achieve the intended educational outputs (Ebenehi, Rashid & Bakar, 2016). Therefore, the educational process' kind of outputs depends on utilizing these physical facilities and teaching and learning resources in the curriculum implementation process.

Instructional materials provide opportunities for teachers to promote effective learning. Instructional materials can be derived through various modes, either purchased, locally made, imported, or even improvised when necessary for effective instructional delivery (Iwu, Ijioma, Onoja & Nzeweike, 2011). Many studies have revealed the relationship between instructional materials and academic achievement. The study by Isola (2010) found the effects of instructional materials resources on students' performance in each of the subjects taught in the West Africa School Certificates Examination (NASCE) in Kwara State. Ezeugwu (2009) noted that no subject area does not use instructional materials. Agun (2009) said that learning materials would enable learners to learn faster and better if adequately used. Similarly, Ikeriowu (2000) refers to them as objects or devices that help the teacher make lessons real to the learner. In sum, a large body of research has consistently found that school facilities impact teaching and learning in profound ways over the past century.

Global and local studies on the factors influencing the effective implementation of TVET programs demonstrate a superficial interrogation of some of these factors. For instance, most studies lack specificity in facilities and resources (Ayuba & Gatabazi, 2010; Hooker et al., 2011; Mupinga, Busby & Ngatiah, 2006; UNESCO, 2010). More specifically, little empirical evidence exists on TVL curriculum implementation, thereby creating a dearth of literature in this area. Additional studies have shown that instructional materials have improved achievement (George, 2008) and Nwagbo (2006), but still more research is needed in this area.

Teachers implement the curriculum inside the classroom utilizing different techniques and strategies; thus, transfer of learning continues with necessary classroom interaction among the students and instructional materials, where the teacher demonstrates and facilitates learning sticking to the plan prepared. If the teacher finds some weaknesses in the curriculum, they can make minor changes and flexible enough to make personalized activities more meaningful and successful.

Faculty qualification in teaching TVL and competence in implementing TVL curriculum

Quality education will be delivered if it has quality resources, and teachers are an essential strategic component. Effort to improve educational outcomes requires the involvement of teachers as the key implementers and, at the same time, the central point of any educational reform. This means that teachers must have the appropriate qualifications. The teachers must have professional skills, professional efforts, time devoted to professional activities, and rewards for their work results (Tampang & Wonggo, 2017). Teachers should continuously reflect on their performance, review scientific literature, observe their practice, and communicate with others as benchmarks. Teachers should adapt to changes in their institution, profession, world of work, market, national educational system, and vocational pedagogy (Enock, 2019). Teachers must be up-to-date about the pedagogical theories and updated on the world of work and those vocations he is teaching (Education and Culture-Slovenia, n.d.).

Central to teaching vocational education methods that are practical includes imitating, practicing real-world problem solving and sketching, while those which are theoretical include listening to theoretical input, reflection on experience, and coaching, which draws out a theory. All vocational education subjects require a judicious mix of theory and practice to achieve the desired outcomes (Lucas et al., 2012: 110). According to Wolfe (2012), the thing that always strikes him about vocational subjects like music and sport is teachers' absolute perfectionism. Good teachers of music are utterly disinterested in it being good enough. There are a brutal minimum and an assumption that all learners will reach it. That is very different from academic subjects. Good vocational teachers do not have low expectations; they do not do low expectations. Specifically, the level of skills and knowledge of teachers and work-based instructors is a vital determinant of the quality of any country's education and training system. Instructors' insufficient numbers and qualifications are among the main factors responsible for the low quality of instruction (ADB 2009). Teachers must have appropriate academic qualifications, competencies, and certifications. They must be physically and mentally healthy and can realize national education goals. They are the education system's primary mechanism, general or

vocational education (Paryono, 2015). Thus, TVET teachers' competencies are the key points that reflect the quality of vocational education and graduates in the job market.

Any educational institution's importance is teachers' training and professional development in the primary, middle school, high school, or even the university level. Teachers at all levels need to be trained in their related fields and subject matter regularly to change their teaching beliefs, attitudes, and daily life practices in classrooms (Boudersa, 2016). However, teachers' behavior cannot be changed overnight if they believe the curriculum implementation is rightful.

Teachers' knowledge, beliefs and attitude towards TVL curriculum implementation

Teaching is a noble profession, and the knowledge, belief, and attitude a teacher possesses will significantly affect the learning center's goal and direction, whether it be a public or private school. The teacher who possesses the necessary qualification to implement the curriculum will lead to a successful teaching-learning process. One study shows that TLE teachers and students at a state university in the Philippines had positive attitudes towards their work and the physical and learning environment (Retome et al., 2012). This condition led to a successful teaching-learning process for the university.

Mays (2008) emphasized the importance of having qualified teachers in teaching, and he said that the success of any vocational, educational, or any specialized course of instruction is conditioned by the teacher's ability to teach. If there is a failure at the teacher level, the whole structure fails. Hence, vocational education teachers' selection, preparation, and supervision significantly impact the courses of actions undertaken. The relevant issues in selection and preparation differ somewhat in the different year levels and vocations for which training is given.

Social and environmental factors affecting TVL implementation (international and local schools)

Education that has become a shared experience in the learning community's contexts benefits that public (Clark & Fiency, 2007). Education brings a change in society. It will raise the countryside's development, promote knowledge and understanding of the rural communities, and enable the people to understand themselves, and increase economic growth and stability (Huda, 2016). Education is the golden ticket to a better life. Benjamin Franklin once said, "An investment in education pays the best."

However, the new educational reform in the Philippines, the K-12, is bombarded with issues and concerns at the curriculum development, implementation process, and bureaucratic processes. One of such issues is the massive training of teachers and the school head's orientation. The national training of trainers' program was cascaded down to the regional and division level, which affected the implementation since much time was spent on training while also complying with the school year's prescribed number of school days. In terms of the availability of instructional materials, most of the time, there are none or, if available, they are inadequate learning materials. The instructional materials deficit includes the students' textbooks and teacher's manuals and science and vocational subject facilities, equipment/ apparatus, and supplementary teaching/ learning materials.

Other barriers to effective curriculum implementation are large classes, teacher availability (for the specialized secondary subject areas), and instructional supervision quality. There is an emphasis on instructional supervision since it is also one factor that makes every school successful. Supervision is "the glue of a successful school" (Glickman, Gordon & Ross-Gordon, 1998: 6), and it is a tool for school improvement (Sharma, 2011).

Self-efficacy of teachers in the implementation of TVL curriculum

Self-efficacy is defined as "people's judgments of their capability to organize and execute courses of action required to attain designated types of performances" (Bandura, 1986: 391). Grounded in Bandura's social cognitive theory's theoretical framework, since its introduction, the construct of self-efficacy has been identified as a significant variable for predicting an individual's behavior (Bandura, 1977). Expectations of self-efficacy determine whether instrumental actions will be initiated, how much effort will be put into the action, and how long the action will be sustained in the face of challenges and failures. Once an action is taken, highly self-efficacious people invest more effort and persist longer than those with low self-efficacy. When setbacks occur, they recover quickly and stay committed to their goals (Schwarzer & Hallum, 2008).

Teacher's self-efficacy is commonly used in several studies. Teacher's self-efficacy was found to be one of the factors that impacted student success (Armor et al., 1976 cited in Woolfolk Hoy & Spero, 2005). Tschannen-Moran & Woolfolk-Hoy, 2001), Armor et al. (1976), and Bandura (1977) define teacher self-efficacy as the teachers' judgments regarding the extent they could affect student outputs, including challenging students who have low motivation. Woolfolk-Hoy and Spero (2005) argue that teachers' self-efficacy beliefs impact teachers' degree of professional targets and the targets to best for the future. Moreover, it is pointed out that teachers with a high degree of self-efficacy beliefs tend to continue learning their subject matter, use innovative techniques, and encourage their students to succeed (Ross, 1994, 1998 cited in Woolfolk-Hoy and Spero, 2005). Moreover, teacher self-efficacy tends to influence student success (Caprara et al., 2006; Ertmer, 2005; Goddard et al., 2000; Guo et al., 2010, Roberts, Henson, Tharp & Morena, 2001; Tschannen-Moran & Johnson, 2011), innovative teaching (Ahllinder, 1994; Lee et al., 2013), and teacher motivation and performance (Caprara et al., 2006; Colodarci, 1992; Khurshid et al., 2012; Tschannen-Moran & Woolfolk Hoy, 2001; Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998; Woolfolk & Hoy, 1990).

Research methodology and design

Research methodology

For this study, the researcher used total population sampling. The respondents included seventy-six (76) TVL teacher-trainers from the twenty-four (24) identified public secondary schools in the three cities of 2nd congressional district of Negros Oriental namely Dumaguete, Tanjay and Bais. The data used in carrying out this investigation and eventually fashioning a model were extracted from these respondents. Descriptive statistics were used by the researcher in presenting the profiles of the schools identified and the TVL teacher-trainers. Similarly, the respondents' extent of knowledge, beliefs and attitude, their perceived self-efficacy, the restraining and driving forces that affect their notion towards the availability of instructional materials, along with the extents of appropriateness of work immersion and availability of instructional materials were presented categorically using weighted mean. Moreover, the extent of relationship between the extent of availability of instructional materials of the TVL curriculum implementation and the number of trainings attended, extent of knowledge, beliefs and attitude and perceived self-efficacy of respondents were established using Spearman correlation coefficient test. The analysis of variance was used to unveil the degree of influence of the independent variables such as extent of knowledge, beliefs, and attitude, perceived self-efficacy, and the number of trainings of the respondents to the dependent variable, extent of availability of instructional materials of the TVL curriculum implementation. Finally, the stepwise linear regression was used to predict the values of a response (dependent) variable from a collection of predictors (independent) variable values and for fitting regression models in which the choice of predictive variables is carried out by an automatic procedure. In each step, a variable is considered for addition to or subtraction from the set of explanatory variables based on some pre-specified criterion.

Research design

The researcher utilized descriptive-correlational design as an over-all strategy for the study. A researcher-constructed survey questionnaire had been constructed which was then later subjected to pilot-testing in the public senior high schools in the division of Bayawan City. The pre-testing result yielded an excellent outcome after it had been subjected to reliability testing using Cronbach alpha. Moreover, the researcher-constructed survey questionnaire was used in describing the profiles of the identified schools and teacher-trainers. The same questionnaire was used to measure the respondent's knowledge, beliefs, and attitude, their perceived self-efficacy, as well as the restraining and driving forces. The extent of availability of instructional materials and extent of appropriateness of work immersion were also determined using the same questionnaire. Most of the questions were adapted from Department of Education Order No.9, series of 2016 regarding "Guidelines on the Organizational Structures and Staffing Patterns of Stand-Alone and Integrated Public Senior High School", policies and guidelines on the implementation of the K-12 program particularly the SHS curriculum and the SHS work immersion program and from the General Self-Efficacy Scale of Matthias Jerusalem and Ralf Schwarzer in 1979 particularly on the self-efficacy questions.

Results and discussion

This section presents the analysis, results, and its discussion, which is arranged according to the sequence of this study's research questions. Different statistical procedures were used to answer research objectives. The analyses' main aim was to achieve the highest level of statistical power possible to detect a true treatment effect (Schneider et al., 2005). Factors that affect statistical power include sample size, level of significance,

and effect size. The first objective was to describe the school's profile, while the second was to identify the respondents' profile in terms of the grade level taught, the number of training attended, highest educational attainment, and grade level.

The third objective focused on the extent of knowledge belief and attitude, while the fourth objective was to determine the perception of self-efficacy to implement the school's TVL curriculum. The fifth objective explored the extent of instructional materials' availability, followed by the 6th objective, which aimed to determine the extent of work immersion's appropriateness. The eighth objective was on the extent of relationships between the teachers' profile, the knowledge beliefs and attitudes, and the perceived self-efficacy. The last objective was aimed at creating a Technical-Vocational and Livelihood education curriculum implementation model for the senior high school.

The school's profile was characterized by its offerings of TVL strands, the number of teachers handling the different TVL strands, training conducted, and the school's proximity to the business centers.

Problem statement 1: What is the profile of the schools in terms of curriculum offerings, teachers handling the TVL strands, trainings conducted and proximity of the school?

Table 1 shows that out of 24 school respondents, only 4 or 16.67% offered Agri-Fishery Arts (AFA), a total of 8 or 33.33% offered Information and Communication (ICT), 50% or 12 schools offered Industrial Arts and Home Economics respectively. This disparity in schools' offerings in terms of strands and specialization may have been affected by the availability of qualified teachers or trainers in the area as well as the equipment and facilities (ADB and DepEd Survey 2019). Adding to this is that the three cities were highly agricultural and industrial, and most public secondary schools were situated in the far-flung areas, of which agriculture and the presence of different industries were the main source of livelihood of the people.

In terms of the number of TVL trainers for each specialization cited, there were 10 out of 76 trainers or 13.16 % handling AFA, 21 or 27.63% were teaching IA, 29 or 38.16% in HE, while the remaining 16 or 21.05% were in-charge in ICT courses. These figures suggested that AFA, IA and HE were the common TVL specializations offered by most of the public secondary schools in the three cities covered in the study. These figures also equate to the number of teacher-trainer required to teach the offered specialization.

Moreover, there were trainings conducted by the respondent-schools relative to their specializations offered. Survey results showed that there were 9 or 37.50% respondent-schools which conduct about 1 to 2 trainings, 11 or 45.83 schools led about 3 to 4 trainings relative to specialization offered, 3 schools or 2.5% directed about 5 to 6 trainings, while only a school or 4.17% out of 24 schools conducted 7 or more TVL trainings relative to its specialization offered.

Finally, the proximity of these public senior high schools (as rural or urban) to the business center is also reflected in the table. These schools were categorized into urban schools of which the distance to the business center is within the 5 kilometer radius. Schools beyond the 5 kilometer radius were already considered rural schools, in as far as this study is concern. Figures revealed that majority of the schools were located in rural areas at 62.50% or 15 schools out of 24 in contrast with 37.50% or 9 schools in the urban areas. With these contrasting figures, the researcher inferred that the distribution of schools has an effect on the school's immersion program, where it would be easier to deploy students in urban rather than in rural areas.

Table 1: Profile of the Schools in terms of Curricular Offerings, Teachers, Trainings Conducted and Proximity of the School

Variables	Responses				
	Not Offered	Percent (%)	Offered	Percent (%)	
TVL Strand Offered	Agri-Fish	20	83.33	4	16.67
	Indu Arts	12	50.0	12	50.0
	HE	12	50.0	12	50.0

	ICT	16	66.67	8	33.33
				Frequency (f)	Percent (%)
Teachers Handling TVL Strand	Agri-Fish			10	13.16
	Indu Arts			21	27.63
	HE			29	38.16
	ICT			16	21.05
Total				76	100

	Number of Trainings Conducted	Frequency (f)	Percent (%)
Trainings Conducted	1 - 2	9	37.50
	3 - 4	11	45.83
	5 - 6	3	12.5
	7 or more	1	4.17
Total		24	100

Proximity of the School	rural	15	62.50
	urban	9	37.50
Total		24	100

Problem Statement 2: What is the profile of TVL teacher-trainers from the respondent-schools in terms of grade level taught, highest educational attainment, number of trainings attended, and National Certification (NCs, TMs) earned?

The succeeding table herein displays the profile of TVL teacher-trainers in terms of the grade level their handling, their educational attainment, the number of trainings attended relative to their specialization handled, and the national certifications they have obtained, again relative to their specialization handled. In terms of grade level taught, table 2 shows 40 or 52.63% of TVL teacher-trainers were assigned in Grade 11, while 36 or 47.36% of them were handling Grade 12 TVL classes. In the course of the informal group discussion between the researcher and some TVL teacher-trainers, it came out that some teacher-trainers were handling both TVL classes in Grade 11 and 12, particularly schools in the rural areas.

Figures in table 2 also reveals the educational attainment of TVL teacher-trainers from both class levels. There were 34 teacher-trainers or 44.74% who had bachelor’s degree, while there were also 34 teacher-trainers who had master’s units. Seven or 9.21% of them had obtained their master’s degree while a lone teacher-trainer or 1.32% has doctoral units. The data imply that the majority of the teachers still needed to upgrade their educational qualifications through graduate and post-graduate studies, considering that the competencies of the courses in senior high school need higher qualifications and expertise. According to Diep and Hartmann (2016), teachers must be competent to teach the specialization because teaching competency entails integrating theory and practice in classroom activities. Relative to qualification, vocational teachers must design teaching and learning appropriately (Ball et al., 2008) while considering vocational learners’ background. They also need to use different teaching techniques and use a practical approach to attain the teaching objectives. All these can be achieved when teacher-trainers continuously upgrade themselves and keeping abreast of the latest trends and development in teaching and learning.

On the number of trainings attended by the teacher-respondents, data shows that majority of the teachers at 29 or 38.16% had only attended 1 to 4 trainings comparative to their specialization taught, 26 or 34.21% teacher-trainers had attended about 3-4 trainings, 9 of them or 11.84% had participated in about 5 to 6 trainings, while 12 or 15.79% had joined more than 6 trainings relative to their specialization handled. These figures imply that teachers disproportionately received trainings, and that majority of them only attended or joined a handful of trainings in their area of specialization. This disparity may not fully equip all teachers with the necessary skills needed for each strand and specialization. Abassah (2011) argued that teaching technical education requires training in relating both science and technical education to practical problems from primary to higher education. This is because TVL education aims to develop practical skills and creative and innovative abilities and enable decision-making skills and problem-solving abilities.

Finally, the data also reveal that majority of the teacher-trainers obtained only National Certification II (NC II) at 53.95% which equates to 41, 3 or 3.95% of them had NC III, while 11 or 14.47% of them had Trainers Methodology (TM) certification. Teachers to be hired in the TVL track should possess at least an NC 2, which should not be lower than that of the specialization to be handled. In the case of Bread and Pastry NC II specialization, a teacher-trainer must also be of the same level of the required NC or higher certification level as stipulated in the DepEd Order (DO) 3, s. 2016. An additional requirement for a TVL teacher applicant is the Trainer’s Methodology Certificate (TMC) only if it is available. The TM holder could be given a Teacher II position immediately upon the availability of an item.

Professional competency for vocational teachers is necessary for them to master their subject matter with the latest information needed by vocational learners (Grollmann, 2008). Effective professional development should transform and restructure the quality of teaching and educational institutions.

Table 2. Profile of Teacher-Trainers in terms of Grade Level Taught, Highest Educational Attainment, Number of Trainings Attended and National Certifications Earned (N=76)

Variables		Responses	
		N	Percent
A. Grade Level taught	Grade 11	40	52.63%
	Grade 12	36	47.36%
Total		76	100.00%
B. Highest Educational Attainment	Bachelor’s Degree	34	44.74
	Masteral Units	34	44.74
	Masters	7	9.21
	Doctoral Units	1	1.32
	Total	76	100
C. Number of Trainings Attended	1 -2	29	38.16
	3 -4	26	34.21
	5 -6	9	11.84
	6 or more	12	15.79
Total		76	100
D. National	NC 2	41	53.95

Certificates Earned	NC 3	3	3.95
	TM	11	14.47
Total		76	100

Problem Statement 3: What is the extent of knowledge, beliefs, and attitude of the respondents towards the availability of instructional materials of TVL curriculum in the school?

Table 3 shows the teacher-trainers' knowledge towards the availability of instructional materials of the TVL curriculum. There were about 15 statements describing their knowledge in the delivery of instructions of the TVL curriculum using the available instructional materials. The average mean of teacher-trainers' knowledge came out to be at 4.39, which fits in to the verbal description of "strongly agree". It could be noted that all of them expressed strong agreements in all the 15 statements describing knowledge towards the availability of instructional materials. These figures suggested that teacher-trainers had sufficient knowledge in delivering instructions using available instructional materials of the TVL curriculum particularly in the specialization they handled.

Table 3. Respondents' Extent of Knowledge towards the Availability of Instructional Materials of TVL Curriculum Implementation
N= 76

ITEM	Mean	Standard Deviation	Verbal Description
1. Familiarity with the pedagogy of a proactive lifestyle relative to the specialization taught.	4.37	0.644	SA
2. Identification on between visual and verbal learners during the actual hands-on activities.	4.29	0.766	SA
3. Grasping the importance of video tutorials available on the Internet in congruence with specializations taught.	4.41	0.706	SA
4. Purposively knowing how to foster self-controlling responsibility towards every learner inside the classroom and other stakeholders.	4.34	0.635	SA
5. Understanding how to shape team work creatively.	4.51	0.616	SA
6. Seeing the characteristics of each individual inside the classroom.	4.48	0.636	SA
7. Knowing students' developmental phases to give essential coaching and mentoring.	4.43	0.632	SA
8. Knowledge of values and the crisis in the modern age.	4.35	0.638	SA
9. The process of vocational practical training is well-planned.	4.26	0.67	SA
10. Pedagogical characteristics of vocational practical training.	4.26	0.707	SA
11. Familiarity with developing problem-solving capabilities during technical vocational hands-on training in the school.	4.36	0.661	SA
12. Understanding on how to search for information on the Internet relevant to competencies to be taught.	4.41	0.65	SA
13. Cognizance of the role of self-determination when working.	4.46	0.674	SA

14. Recognition of the importance of personal role modeling.	4.45	0.654	SA
15. Performed an ability to think out of the box in work related scenarios.	4.41	0.63	SA
Mean	4.39	0.661	SA

Legend:

Rubrics	Verbal description
4.20 - 5.00	Strongly Agree
3.40 - 4.19	Agree
2.60 - 3.39	Moderately Agree
1.80 - 2.59	Disagree
1.00 - 1.79	Strongly Disagree

Subsequent table 3.2 shows the beliefs and attitude of teacher-trainers towards the availability of instructional materials of the TVL curriculum. There are also 15 statements assessing beliefs and attitude of teacher-trainers towards the availability of instructional materials. The weighted mean of beliefs and attitude of respondents is 4.46 with equivalent verbal description of “strongly agree.” Item number 10 on the “*access to modern equipment, instructional materials, and the availability of learning resources such as books and laboratory equipment*” has the lowest mean rating among all the statements at 3.79 with verbal description of “agree”. This rating might be a little vague but overall, this revealed that students had very limited access to modern equipment and instructional materials. It is quite definite that public Senior High Schools offering TVL strands in the three cities mentioned had the necessary equipment and facilities but may not be sufficient for all learners. It can be recalled that in DepEd's Computerization Program (DCP) package, senior high schools were not considered or included yet, but it does not mean they don't have computers to be used in their respective laboratories.

Finally, according to Young (2015), the future of students is linked to the highly changing global community. As they are called the 21st-century students with which they would be able to conquer the world, join and collaborate in international companies, compete and work with people from other countries, supervise employees from other cultures, and collaborate with people all over the world and work out problems globally. Thus, there is a need to provide sufficient modern equipment and learning resources for them.

Table 4. Respondents' Extent of Beliefs and Attitude towards the Availability of Instructional Materials of TVL Curriculum Implementation N=76

Item	Mean	Standard Deviation	Verbal Description
1. Workplace communication participation.	4.69	.708	SA
2. Team environment working.	4.68	.570	SA
3. Career professionalism practice.	4.71	.537	SA
4. Occupational health safety practices and safety procedures.	4.69	.542	SA
5. Updating and developing industry knowledge.	4.51	.639	SA
6. Workplace observation on hygiene procedures	4.62	.629	SA
7. Computer operations and performance.	4.36	.939	SA
8. Provide effective customer service.	4.37	.854	SA
9. Curriculum is very comprehensive.	4.23	.821	SA
10. Students don't have access to modern equipment and instructional materials of the school.	3.79	1.231	A
11. The economic development of both individual and the country and the students are well developed through learning of vocational subject.	4.64	.644	SA
12. Professional training is essential to teacher's efficiency.	4.78	.526	SA
13. Industry partners could cater to work immersion of students with relevance to the strand offered.	4.55	.696	SA

14. Parents/guardians take responsibility of the work immersion of their son/daughter in terms of finances.	4.24	.871	SA
15. Learning resources availability such as modern equipment which also include textbooks and in the case of practical vocational training which enables hands-on training and supports skills acquisition of the students.	4.03	1.081	A
Mean	4.46	.752	SA

Legend:

Rubrics	Verbal Description (VD)
4.20 - 5.00	Strongly Agree
3.40 - 4.19	Agree
2.60 - 3.39	Moderately Agree
1.80 - 2.59	Disagree
1.00 - 1.79	Strongly Disagree

Table 4 shows the teachers-trainers’ perceived self-efficacy towards the availability of instructional materials of the TVL curriculum. About 15 statements were crafted appreciating the self-efficacy of teacher-trainers towards the availability of instructional materials. Survey results revealed that respondents are highly capable of delivering top-notch instruction using available instructional materials. The average mean of 4.28 with verbal description of “highly capable” indicates that despite of the meager instructional resources, teacher-trainers find ways and means and use their creativity and ingenuity to supplement what is lacking or needed to consummate delivery of instruction. However, it can be noted that in item number 14 on “ensuring that all students pass the NC II assessment from TESDA by providing.....”, teacher-trainers are a little doubtful of the task on hand. This is probably because of the limited resources of the school for learners to use and practice their skills. Nevertheless, teachers are ever ready to serve and assist the students, which has been proven over time. The mean rating for this statement is 3.89 with verbal description of “very capable”. The rating does not totally affect the overall self-efficacy of respondents towards the availability of instructional materials rather a manifestation to better their craft.

Teachers’ self-efficacy, namely teachers’ beliefs in their ability to effectively handle the tasks, obligations, and challenges related to their professional activity, plays a key role in influencing important academic outcomes (for example, students’ achievement and motivation) and well-being in the working environment (Barni, Danioni & Benevene, 2019). On the other hand, Djigić et al. (2014) in his study revealed that teachers with higher levels of openness to experience and conscientiousness reported to have a stronger sense of efficacy.

Table 5. Perceived Self-Efficacy of Respondents towards the Availability of Instructional Materials of TVL Curriculum per Specialization N=76

Item	Mean	Standard Deviation	Verbal Description
1. Set instructional goals for the offered specialization.	4.52	0.595	HC
2. Include all parents as part of any planning that impacts teaching and learning which includes immersion activity that needs their financial and moral support.	4.27	0.811	HC
3. Assist and coach co - teachers who are struggling particularly in the topic or lesson seems to be difficult for them or teachers who are not expert on the specialization they are handling	4.06	0.847	VC
4. Ensure that the new strategies/techniques that affect teaching and learning in school are implemented with respect to the TVL strand offered particularly its specialization.	4.27	0.746	HC
5. Take the responsibility for improving instruction by being creative and innovative in the teaching of the different competencies of the TVL specialization offered.	4.43	0.725	VC

6. Feed backing about TVL program is considered in school	4.11	0.842	VC
7. Inspire learners to perform to the highest level in all TVL programs in school	4.45	0.71	HC
8. Maximize time to teach the learning competencies of the specialization taught in the TVL strand.	4.4	0.704	HC
9. Perform all the necessary hands-on activities utilizing all the required tools and equipment on the specialization offered.	4.24	0.815	HC
10. Take charge in the preparation of daily lesson logs to make teaching and learning meaningful and purposive.	4.34	0.795	HC
11. Ensure that all necessary materials and other supplies needed in the activities are prepared ahead of time.	4.26	0.759	HC
12. Apply understanding of research-based knowledge and principle of teaching and learning in the specialization offered in the school.	4.33	0.632	HC
13. Provide enrichment activities to students at risk.	4.30	0.683	HC
14. Ensure that all students pass the NC II assessment from TESDA by coaching and mentoring and conduct pre- assessment in the school level.	3.89	1.067	MC
15. Demonstrate mastery of all the skills found in the curriculum guide in a certain specialization to be taught as what is being offered in the school.	4.36	0.716	HC
Mean	4.28	0.763	HC

Legend:

Rubrics	Verbal Description (VD)
4.20 - 5.00	Highly Capable
3.40 - 4.19	Very Capable
2.60 - 3.39	Moderately Capable
1.00 - 1.79	Not Capable
1.80 - 2.59	Less Capable

Problem statement 5: What is the extent of availability of instructional materials used in the strand offered? Table 5 presents the extent of the availability of learning materials used in each strand offered by the respondent-schools. The overall mean score of 3.47 with verbal description of “agree” denotes that learning or instructional materials in each strand are not sufficient to consummate delivery of instruction, so that teachers need support in securing facilities and equipment necessary for effective transfer of instruction. On item number 6, “Learners’ materials are sufficient and delivered on time”, the mean score of 2.69 with verbal description of “moderately agree” only suggest the need for government agencies concern to improve production and delivery of instructional materials to schools, and probably develop a system that can forecast or project the number of students in a particular division especially those in the far-flung areas.

Table 6. Extent of Availability of Instructional Materials of the TVL Curriculum Implementation N=76

Item	Mean	Standard Deviation	Verbal Description
1. Availability of complete and sufficient supply of curriculum guide, textbooks and workbooks	3.26	.990	MA
2. Availability of instructional materials that are innovative and interactive.	3.56	.884	A
3. Instructional materials stated in the curriculum guide are available	3.56	1.003	A

4. Procedures of the lessons are properly followed in the teacher’s guide (TG) utilizing interactive facilities.	3.91	.874	A
5. Curriculum guides for all TVL strands and specializations are delivered on time.	3.78	1.043	A
6. Learner’s materials are sufficient and delivered on time.	2.96	.974	MA
7. Supplementary materials are also provided.	3.06	.998	MA
8. Instructional materials are safe and attractive to the pupils	3.54	1.043	A
9. Availability of collaborative technology-enriched learning environments conducive to innovation for improved learning	3.61	1.013	A
10. Availability of computer and other modern technologies to support and enhance instructional methods that develop higher-level thinking, decision- making, and problem-solving skills	3.76	1.05	A
Mean	3.47	.987	A

Legend:

Rubrics	Verbal Description
4.20 - 5.00	Strongly Agree
3.40 - 4.19	Agree
2.60 - 3.39	Moderately Agree
1.80 - 2.50	Disagree
1.00 - 1.79	Strongly Disagree

Problem statement 6: What is the extent of appropriateness of work immersion program for each strand offered? The survey result on the appropriateness of the work immersion program for each TVL strand is revealed in table 6. There were 10 questions or statements describing the appropriateness of the work immersion to which teacher-trainers rate or score base on their experience. The total mean for the appropriateness of the work immersion as shown in the table is 4.15, with verbal description of “agree”. The result can be interpreted as, referring to the work immersion programs, proper and fitting to the strand taken by the learners. Rates given by respondents were not perfect because, as there were flaws and lacking in the delivery of instructions, there were also limitations of real work experience of learners in their respective workplace assigned. Industry partners, especially in the remote areas are not high-tech and that they provide training based only on their manpower capability and the availability of their technologies or machineries. Item number 3, “on the learning competencies of the student-trainees are completely applied in the industry” mean score of 3.96 suggested that not all competencies of the work immersion were applied in the workplace or in the industry where the learners are assigned. Item number 5, on the “actual use and access to the company/industry workplace and equipment as part of their work immersion program are being implemented”, mean score of 4.03 also revealed limited access to industries’ equipment and other facilities by learner-trainees. Moreover, the three cities in this study are not first class nor highly urbanized that presence of government regulators are rarely felt.

Table 7. Extent of Appropriateness of Work Immersion Program for each Strand N=76

Item	Mean	Standard Deviation	Verbal Description
1. Industry is observant to the health and safety of work immersion students pertinent to their specialization.	4.15	0.858	A
2. The activities provided are relevant and applicable to the Work Immersion students in consonance with their specialization.	4.12	0.848	A

3. The learning competencies of the Work Immersion students are completely applied in the industry.	3.96	0.934	A
4. Relevant learning experiences are provided for exposure in their actual workplace setting.	4.16	0.803	A
5. Actual use and access to the company/industry workplace and equipment as part of their Work Immersion Program are being implemented.	4.03	0.871	A
6. Work Immersion Daily Schedule of activities are religiously followed with proper guidance and monitoring.	4.15	0.982	A
7. Student's performance are assessed by the industry through a day to day checking with proper coordination and feed backing on their performance and technical assistance provided.	4.16	0.934	A
8. Opportunities are given to work immersion students to discover their talents and skills and specifically learn on what to do when they get on the job.	4.3	0.786	SA
9. Actual performance on the use tools and equipment with proper instruction and guidance for work immersion students for the enhancement of skills, knowledge and attitude.	4.23	0.729	SA
10. Creation of a wholesome workplace environment in order for the work immersion students to feel at ease and comfortable during their immersion.	4.15	0.931	SA
Mean	4.15	0.774	A

Legend:

Rubrics	Verbal Description
4.20 - 5.00	Strongly Agree
3.40 - 4.19	Agree
2.60 - 3.39	Moderately Agree
1.80 - 2.59	Disagree
1.00 - 1.79	Strongly Disagree

Problem Statement 7. What are the perceived restraining and driving forces identified by respondents that affect the availability of instructional materials of the TVL curriculum? The restraining forces that affect the availability of instructional materials are displayed in table 7. Restraining forces are forces working to block or counter progress towards a goal or objective. They tend to limit or decrease the driving forces. It is part of the Force Field Analysis tool for change management created by Kurt Lewin.

For this survey, there are 15 statements by which respondents are to assess each statement's level of prevalence as restraining force towards the delivery of instruction using available instructional materials in TVL curriculum. Overall mean score of 3.15 construed as "moderately prevalent" came out to be the general sentiments of the respondents. This means that restraining forces enumerated impacted or hinders the delivery of instruction using the available learning resources, thus affecting the learning progression of students. Of the 15 statements of forces, item number 13 on "*sufficient supply of computer units and other modern technologies that support instructional method.....*" has the lowest mean score of 2.91 interpreted as "moderately prevalent". Evidently, most of the public secondary schools offering SHS TVL curriculum don't have sufficient computers and other educational technologies in their respective laboratories. Other items contributory to the overall low mean score are items number 2, 5, 10, and 11, on "*sufficient number of strands and specialization offered, specializations offered do not match with the interest of the learners, standard classroom sized used as laboratories are spacious, and appropriate and sufficient working space*" respectively.

Table 8. Extent of Restraining Forces affecting the Extent Availability of Instructional Materials of the TVL Curriculum Implementation N= 76

Item	Mean	Standard Deviation	Verbal Description
1. Specializations offered match with the interest of the learners in the community.	3.35	1.066	MP
2. Sufficient number of strands and specializations offered by the school.	3.00	1.180	MP
3. Business stakeholders cater the graduating students for work immersion in the localities.	3.35	1.163	MP
4. Establishments and organizations caters work immersion students.	3.20	1.161	MP
5. Some of the specializations offered do not match with the interest of the learners in the community.	3.09	1.113	MP
6. The school adequately engages with business stakeholders to create a plan for achievement and success for work immersion of each student in all required competencies.	3.41	1.107	SP
7. Discussions on the student's progress during work immersion in the linked industry.	3.38	1.103	SP
8. The school encourages an active network of industrial partners and educators working together	3.51	1.028	SP
9. The school motivates the business partners to participate in school activities pertaining to TVL programs.	3.36	1.014	MP
10. Standard classroom size used as laboratory or workshops and spacious working areas are evident	3.00	1.212	MP
11. Appropriate and sufficient working space, demo room, and learning resource center.	3.04	1.252	MP
12. Availability of tool room, storage area, supply room, circulation area, toilet, and locker room.	3.17	1.328	MP
13. Sufficient supply of computer units and other audio-visual equipment to support and improve instructional methods that develop higher-level thinking, decision-making, and problem-solving skills.	2.91	1.316	MP
14. Sufficient budget to cater the needs of the TVL program.	3.23	1.277	MP
15. School level Insets have been conducted to improve the capabilities of teacher.	3.23	1.230	MP
Mean	3.15	1.15	MP

Legend:

Rubrics	Verbal Description (VD)
4.20 - 5.00	Very Seriously Prevalent
3.40 - 4.19	Seriously Prevalent
2.60 - 3.39	Moderately Prevalent
1.80 - 2:59	Less Prevalent
1:00 - 1.79	Least Prevalent

Table 8 outlines the driving forces identified by respondents affecting delivery of instruction using available instructional materials of the TVL curriculum. Driving forces are also part of the Force Field Analysis tool developed by Kurt Lewin for change management. Influencing a situation with these forces in a particular direction. The 'positive' causes that are typically viewed to enable change include new personnel, shifting markets, new technology, managerial pressure from competitors, incentives, politics, legislation, and shareholders (DanielLock Consulting, 2019)

There are 15 statements of forces intended to drive respondents towards the delivery of instruction using available learning materials. Survey result showed a 4.05 average mean with verbal description of “seriously prevalent”. This result indicates that respondents are extremely considering the forces enumerated as driving or motivating to enhance and innovate the availability of instructional resources. What drives most of the teacher-trainers is the participation of business and industry partners in school activities pertaining to the TVL programs. They rated it as “very seriously prevalent” with a mean score of 5. This insinuates that respondents are welcoming collaboration and alliance with business and industry partners of the schools relative to the delivery of quality, relevant and meaningful TVL education to learners in public secondary schools, hence, they can simulate classroom instruction based on theories to actual industry practice. This corroborates to item number 11 on “*appropriate and sufficient working space, demo rooms and learning resource center*”, of which respondents scored it at 4.41 equating to “very seriously prevalent” verbal description. The industry partners’ workplaces would now be the laboratories, demo rooms, and learning resource centers of student-trainees, as they go on-board for the work immersion program.

Table 9. Extent of Driving Forces affecting the Availability of Instructional Materials of the TVL Curriculum Implementation (N=76)

Statements	Mean	Standard Deviation	Verbal Description
1.Specializations offered match with the interest of the learners’ in the community.	3.96	.962	SP
2. Sufficient number of strands and specializations offered by the school.	3.77	.920	SP
3. Business stakeholders cater the graduating students for work immersion in the localities.	3.90	.963	SP
4. Establishments and organizations caters work immersion students.	3.84	1.028	SP
5. Some of the specializations offered do not match with the interest of the learners in the community.	3.44	1.160	SP
6. The school adequately engages with business stakeholders to create a plan for achievement and success for work immersion of each student in all required competencies.	4.04	.881	SP
7. Discussions on the student’s progress during work immersion in the linked industry	4.12	.840	SP
8. The school encourages an active network of industrial partners and educators working together	4.12	.758	SP
9. The school motivate the business partners to participate in school activities pertaining to TVL programs.	5.00	6.912	VSP
10. Standard classroom size used as laboratory or workshops and spacious working areas are evident	3.81	1.003	SP
11. Appropriate and sufficient working space, demo room, and learning resource center.	4.41	4.425	VSP
12. Availability of tool room, storage area, supply room, circulation area, toilet, and locker room.	3.68	1.052	SP

13. Sufficient supply of computer unit and other modern technologies to support and enhance instructional methods that develop higher-level thinking, decision-making, and problem-solving skills.	3.40	1.195	SP
14. Sufficient budget to cater the needs of the TVL program.	3.83	.950	SP
15. School level Insets have been conducted to improve the capabilities of teacher.	3.93	1.033	SP
Mean	4.05	1.605	SP

Legend:

Rubrics

Verbal Description

4.20 - 5.00	Very Seriously Prevalent
3.40 - 4.19	Seriously Prevalent
2.60 - 3.39	Moderately Prevalent
1.80 - 2.59	Less Prevalent
1.00 - 1.79	Least Prevalent

Succeeding table summarizes the weighted means of all variables relative to availability of instructional materials of the TVL curriculum implementation.

Table 10. Summary of Respondent’s Weighted Mean for All Independent Variables relative to the Extent of Availability of Instructional Materials

	Weighted Mean	SD	VD
Knowledge towards availability of IMs	4.39	.525	SA
Beliefs and Attitude towards availability of IMs	4.46	.725	SA
Self-efficacy towards availability of IMs	4.28	.763	HC
Availability of Instructional Materials	3.47	.987	A
Appropriateness of Work Immersion Program	4.15	.774	SP
Extent of Restraining	3.15	1.15	MP
Extent of Driving Forces	4.05	1.605	SP

Problem statement 8: Is there a relationship between the extent of availability of instructional materials and;
 8.1 number of trainings attended;
 8.2 extent of knowledge;
 8.3 extent of beliefs and attitude; and,
 8.4 extent of perceived self-efficacy.

Table 10 shows the Spearman’s correlation coefficient test result between the extent of availability of instructional materials of the TVL curriculum and number of trainings attended by respondents, their extent of knowledge, beliefs and attitude, as well as their extent of perceived self-efficacy. Results reveal a strong association of the accessibility of instructional resources of the TVL curriculum with the respondents’ number of trainings at coefficient of correlation (r) level of -.242, and extent of knowledge at r=.356 level. Extent of beliefs and attitude and perceived self-efficacy of respondents had also trivial and significant relationships

with the availability of instructional materials of the TVL curriculum at coefficient of correlations levels of .085 and .432 respectively. Correlations were significant at the 0.01 level.

The strong correlation of the extent of knowledge and the availability of instructional resources of the TVL curriculum can be attributed to the general awareness of the respondents in terms of the instructional materials, facilities and laboratory equipment needed to carry out TVL curriculum instruction. They are also cognizant of the implementation processes and guidelines in the conduct of the training, and the core competencies to be attained. According to Bransford (2014), teachers need knowledge of their students' subject matter. Teachers must be equipped in terms of pedagogy content, content of the classroom and the ability to impart this to the real classroom setting. (König et al., 2016). Moreover, this include relationships with students, subject matter knowledge and an understanding of pedagogical processes to develop the understanding that is required. Should a teacher fail to have any of these, then it is likely that the learning in the classroom will never be successful. However, it would be foolish to single out one of these abilities to the exclusion of the others because teaching, like the majority of people-centered professions, calls for a variety of skills and abilities that the practitioner carefully combines in order to offer the most fulfilling learning experience.

Because it impacts the level of effort put forth on a given work as well as the sorts of aspirations and goals that principals will set for themselves, self- efficacy is an essential to individual’s success (Bandura, 1986; Gist & Mitchell, 1992 in Versland, 2009). The importance of self- efficacy in leadership settings is promoted by Bandura (2000) claims that people who have a strong sense of self- worth will work harder to overcome challenges ” (as cited in Versland, 2009).

Bandura (1997) further elaborated that self-efficacy as “people’s judgments of their capabilities to organize and execute courses of action required to attain designated types of performance”. He found that rather than their real talents, people are motivated to achieve the goals they set for themselves by their beliefs and judgments about their personal capabilities. People's efforts are more active and persistent the higher their self-efficacy. Bandura made it obvious that the evaluation of what a person can do with the skills he or she possesses is more significant than skills alone. “It is when one is applying skills that high efficacy intensifies and sustains the effort needed to realize a difficult performance” (as cited in Versland, 2009).

Hereunder is table 8 showing the relationships of the availability of instructional resources with identified variable.

Table 11. Relationship between Extent of Availability of Instructional Materials and Number of Trainings, Extent of Knowledge, Beliefs and Attitude and Perceived Self-Efficacy of Respondents

Variables	Coefficient of Correlation	Remarks
Number of Trainings	-.242	Strong
Extent of Knowledge	.356	Strong
Extent of Beliefs and Attitude	.085	Weak
Extent of Perceived Self-Efficacy	.432	Strong

Problem statement 9: What implementation model can be designed to explain the availability of instructional materials of the TVL curriculum implementation in the schools covered in the study? Table 11 shows the effects of the extent of knowledge self-efficacy, and number of training on the extent of availability of instructional resources of the TVL curriculum implementation. As seen, only self-efficacy and number of training had significant effects on the availability of instructional materials. Specifically, self-efficacy is positively related with availability of instructional resources ($b = .313, p = .021$). This implies that teachers who had high perceived self-efficacy tended to maximize better the use of available instructional materials of the TVL curriculum implementation in their respective schools. However, number of training had negative relationship with TVL implementation ($b = -.214, p = .050$). This finding seems counter-intuitive: those who

attended more training tended to lessen or minimizing the use of available instructional materials of the TVL curriculum implementation. Probably, these teachers were too preoccupied with attendance to numerous training that lessen their time devoted to instruction and use of available instructional resources of the TVL curriculum implementation

Table 12. Coefficient^a

Model	Unstandardized Coefficient		Standardized Coefficient	t	Sig.
	B	Std. Error	Beta		
1					
(Constant)	1.082	.778		1.391	.169
Mean (EOK)	.191	.202	.125	.947	.347
Mean (POC)	.441	.186	.313	2.369	.021
NumTrainings	-.161	.081	-.214	-1.995	.050

a. Dependent Variable: mean (EOA)

Table 12 shows the results of the hierarchical regression performed to determine what statistical model can best explain the availability of instructional materials of the TVL curriculum implementation and what other factors could be included in such model. As shown, all of the three models can explain the availability of instructional materials for TVL curriculum but of all the models, Model 3 can be considered the best one to explicate and clarify the availability of instructional materials of the TVL curriculum implementation. This is because Model 3 describes the biggest variance of the latter (Adj. $R^2 = .157$). This is not totally surprising, because all of the three independent variables namely extent of knowledge, extent of perceived self-efficacy, and number of training attended were entered into this model, while in Model 1, only extent of knowledge and in Model 2 only extent of knowledge and self-efficacy were entered in the statistical model.

Individually, the extent of knowledge explains the largest variance of the availability of instructional materials of the TVL curriculum implementation (R^2 Change = 0.084 or 8.4% of the variance). Thus, the most important factor that should be improved among the TVL teacher-trainers are their extent of knowledge towards the use of available instructional materials of the TVL curriculum implementation. On the other hand, self-efficacy (R^2 Change = .062 or 6.2%) and number of training (R^2 Change = .045 or 4.5%) can also explain some variance of the availability of instructional resources of the TVL curriculum implementation

Table 13. R square and R square changes in the model
Model Summary

Model	R	R Square	Adj. R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.290 ^a	.084	.071	.763	.084	6.679	1	73	.012
2	.382 ^b	.146	.122	.742	.062	5.244	1	72	.025
3	.437 ^c	.191	.157	.727	.045	3.979	1	71	.050

a. Predictors: (Constant) mean Extent of Knowledge

b. Predictors: (Constant) mean Extent of Knowledge, mean Self-Efficacy

c. Predictors: (Constant) mean Extent of Knowledge, mean Self-Efficacy, Number of Trainings

ANOVA^a test result as presented in table 9.3 shows that the model meaningfully predicts the outcome variable at F-value of 5.600 which yielded a p-value of .002^b. This result is less than the set level of implication, hence

the model suggestively forecasts the use of available instructional materials of the TVL curriculum implementation.

Table 14. ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.874	3	2.958	5.600	.002 ^b
	Residual	37.502	71	.528		
	Total	46.375	74			

a. Dependent Variable: meanEOA
 b. Predictors (Constant), NumTrainings, meanPOC, meanEOK

In coming up with the model proposal, the researcher employed stepwise linear regression. *Stepwise linear regression is a process or method of multiple regression variables while concurrently removing those that aren't important. It essentially does multiple regression several times, each time of which removing the weakest correlated variable. At the end, only variables that explains the distribution best are left. The only requirements are that the data is normally distributed (or rather, that the residuals are), and between the independent variables there is no correlation.*

The "Model Summary" as exhibited in table 9.4 gives details of the overall correlation between the variables left in the model and the dependent variable. With model 1 below, R square of .191 *indicates that* some 19.1% of the variation in the dependent or outcome variable, availability of instructional resources of the TVL curriculum implementation can be explained using the independent variables or predictors enumerated. These independent variables are the number of trainings respondents attended, extents of knowledge and perceived self-efficacy towards the use of available instructional materials of the TVL curriculum implementation.

Table 15. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.437 ^a	.191	.157	.727

a. Predictors: (Constant), NumTrainings, meanPOC, meanEO

A statistical model that can best explain the availability of instructional materials for the TVL curriculum implementation can be constructed based on the *R*² Changes brought by the independent variables in the models presented in Table 16. With this, the following regression formula has been constructed to produce the best model expounding the availability of instructional materials for the TVL curriculum implementation as follows=

$$\text{Extent of Availability of Instructional Materials} = (.084 * \text{Extent of Knowledge}) + (.062 * \text{Extent of Perceived Self-Efficacy}) + (.045 * \text{Number of Trainings})$$

where the amount of variance expressed in percentage are,
 Extent of Knowledge = 8.4%
 Self-Efficacy = 6.2%
 Number of Training = 4.5%.

Conclusion

Recognizing the challenges that influence the extent of availability of instructional materials in the Senior High School Technical-Vocational Livelihood track. This study has revealed that instructional materials are the primary needs in developing the skills of all the learners in the SHS-TVL schools undertaking the successful conduct of all the activities inside the classroom. The development of students' skills includes critical thinking, reasoning, effective communication, and problem solving. Teacher trainers must be

competent enough to teach the necessary specialization they have mastered with which they are apparently NC 2 and TM holders.

The Senior High School Technical-Vocational Livelihood track as one of the major tracks in the Senior High School of the K to 12 Program which eventually aimed to producing globally competitive Filipinos equipped with the 21st century skills and life-long learning. Along this line, these skills help them to become ready with employment in for jobs in the middle level, entrepreneurship, and higher education. However, this study reveals on the extent of availability of instructional among the Senior High School offering TVL strand is inadequate. The SHS-TVL schools must cater the students' needs in terms of competencies of the specializations being offered in which they must learn. But since instructional materials are not readily available which is the primary needs in the day today activities inside the classroom, teacher-trainers exhaust all means and take the full responsibility for the improvement of instruction by being creative and innovative. Likewise, school administrators of the Senior High School take the lead in the implementation of the program with the stakeholders' participation through feedbacking of the schools' issues and concerns during conferences. Stakeholders' involvement specifically in planning and for the financial and moral support as well also aided in the schools' program implementation.

Regarding the strand offered in this study, this acknowledges the four strands offered with different specialization of the public Senior High Schools in three cities of the 2nd congressional district. Only few schools offered Agri-Fishery Arts, followed by ICT, while Home Economics and Industrial Arts are equally offered. So therefore, the highest number of teachers is Home Economics followed Industrial Arts. Self - efficacy of the teacher trainers reflects the student's outcome in the outside world which is imperative to the high level of expectations particularly of the knowledge and skills they have. Majority of the teacher respondents in this study only have a handful of training in their area of specialization but sufficient knowledge, beliefs and attitude are acquired by them using available instructional materials particularly of the specialization they handled during delivery of instructions. Teachers' competence here dwells on the skills trainings they attended, updating of their professional competence gained through professional education. Teachers' requirement to teach the specialization a few have been conducted so it is positive that only a handful of training have been attained.

It also denoted that learning or instructional resources in each strand are not sufficient to consummate the delivery of instruction, so that teachers need support in securing facilities and equipment necessary for transfer of instruction. Since there is lack of facilities, tools and equipment work immersion is appropriately needed to improve the learner's capabilities and they will be given enough time to explore the industries real world of work but sad to note that in this study it has been found out that there are limitations., where those urban schools are more privileged compared to the rural schools where to be specific those located in the far-flung areas find it hard to avail the needed work experiences and tools in developing the necessary skills.

A model has been designed to explain the extent of availability of instructional materials of the TVL curriculum covered in this study which has a greater effect on the extent of knowledge, self-efficacy, and the number of trainings. This implies that teachers who had high perceived self-efficacy tended to maximize better the use of available instructional materials of the TVL Curriculum implementation in their respective schools. Relative to the number of trainings this has a negative relationship on the use of available instructional materials of the TVL implementation. Therefore, students learning progression is hindered due to insufficiency of instructional resources but considering also other motivating forces to enhance and innovate availability of instructional resources.

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