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Research Article

Sustainable Quality in Technology Vocational Livelihood (TVL) Instructions Through Technology Intervention

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Abstract

Producing quality graduates of Technical Vocational Livelihood (TVL) Education who are ready to join the workforce after graduation has been the concern of every TVL teacher. Technology intervention is viewed as a helpful strategy in developing learners' skills. Thus, the researcher assessed the learners' level of competence before and after YouTube utilization. It employed descriptive and quasi-experimental, and phenomenological research designs, having the senior high school home economics teachers and learners as respondents. It utilized adopted survey questionnaire and employed data analysis using appropriate statistical formulas. Before the YouTube utilization the written MPS of Food and Beverage Services (FBS) respondents is 44.00 or equivalent to did not meet expectation, and the MPS of Bread and Pastry Production (BPP) learners is
31.56 or described as did meet expectations. After the YouTube utilization the MPS of the FBS learners is 95.56 or equivalent to Outstanding, and the MPS of the BPP learners is 95.56 or equivalent to Outstanding. On the hands- on assessment, the highest weighted mean of FBS respondents before the YouTube utilization is 2.7 and 5.00 after YouTube utilization, and for the BPP the highest weighted mean of the respondents before the YouTube utilization is 2.07 and 5.00 after the YouTube utilization. The results show that there is significant relationship of learners' scores before and after YouTube utilization. On the impact of YouTube utilization to the teachers and learners, the average weighted mean is 4.64. It was concluded that technology intervention like utilizing YouTube videos is very helpful to both teachers and learners during classroom instructions.

Keywords: Development Education, Technical Vocational Livelihood (TVL) Education, YouTube Integration, Mixed Method

Introduction

Quality education for all is an imperative factor in building a strong nation. United Nations Educational, Scientific and Cultural Organization (UNESCO) takes stand that high caliber education is the foundation which leads to catalyzing a sustainable progress. The fourth goal of the Sustainable Development Goal (SDG) of UNESCO is to provide education for all with premium quality "no one remains uneducated in 2030." This aims to guarantee universal and candid world class education that raise lifelong learning for everyone. Education is a blueprint in implementing strategic plan for a nations' progress.

Furthermore, Technical Vocational and Livelihood (TVL) Education is considered as the supreme avenue to transform the real workplace, lessen poverty, economy, and improves quality of everyone's life around the globe. Developing learners' skills is a challenge that all teachers should embrace. TVL educators are encouraged to be abreast with the changes in the industry. In Japan, the changes in the industry, the training in vocational education, especially the specialized courses in colleges (senmon gakko) caught the attention of its citizens (Tsukamoto, 2016). In Singapore, vocational livelihood education plays an important part of country's peculiar planning for the economy (Stewart, 2015). These studies corroborated the fact that TVL is vital in pursuing economic growth and development.

In Malaysia, giving importance of TVL is seen as a dynamic move in developing the future of the nation (Jusoh, 2017), developing TVL and investing in education to hone learners' capabilities will be beneficial to them. In Canada, vocational preparedness has become increasingly important (Lyons et al., 2016), however, apprenticeships have been given importance as it develops useful and employable skills (Livingstone, 2014). In Switzerland, TVL lay a huge opportunity for learners regardless of their academic status (Hoffman, 2015). Hence, in the Philippines, having TVL, will definitely mark a significance in honing the skills of the students and making them an asset of this country.

The educational system in the Philippines emphasizes the importance of TVET/TVL teachers in capacitating the learners to be industry ready. Republic Act 10533 or the K-12 Program does not only call for academic excellence but also on higher teachers' qualification which may lead to sustainable quality education. The gap in honing TVL graduates is still very noticeable. Technical Vocational Livelihood Education graduates largely depends on the quality of teachers, school's

facilities, tools and equipment that the training venue has for its learners. Training were given to empower teachers in honing learners' skills, but TVL teachers are still in struggle in developing learners' skills for them to be ready to join the workforce after graduation. The unavailability of school facilities, tools and equipment, and teaching resources give teachers a hard time in inculcating the skills into learners' minds.

It is on this premise that the researcher would like to assess the impact of technology intervention in developing learners' skills in Technical Vocational Livelihood (TVL) education during the academic year 2019-2020 as the basis for crafting an instructional manual in a specified specialization in the Home Economics strand.

Research Question

This study assessed the impact of YouTube utilization in developing Senior High School learners in Technical Vocational Livelihood Education specifically in the Home Economics strand namely; Food and Beverage Services and Bread and Pastry Production specializations in Samboan District during the academic year 2019-2020 as the basis for crafting an instructional manual. Specifically, this study sought answers to the following questions:

1. What information can be gleaned from the respondent groups in terms of:
 1.1 teachers' demographic profile
  1.1.1 age and gender;
  1.1.2 highest educational attainment;
  1.1.3 field of specialization;
  1.1.4 TESDA national certificate;
  1.1.5 teaching experience;
  1.1.6 teacher's personal characteristics as to:
   1.1.6.1 strong work ethics;
   1.1.6.2 positive attitude;
   1.1.6.3 communication skills;
   1.1.6.4 time management;
   1.1.6.5. problem-solving skills; and
   1.1.6.6 self-confidence?
 1.2 learners' profile
 1.3 school's facilities, tools and equipment based on TESDA Training Regulation.
2. What is the learners' level of competence before and after YouTube utilization in the identified specializations in Home Economics strand.
 2.1 Food and Beverage Services:
  2.1.1 pen and paper test in:
   2.1.1.1 set table according to the standards of the food service; and
   2.1.1.2 skirt properly buffet or display tables taking into account symmetry, balance and harmony in size and design?
  2.1.2 Hands-on assessment in:
   2.1.2.1fold properly and laid cloth napkins on the table appropriately according to napkins folding style?

 2.2 Bread and Pastry Production
  2.2.1 pen and paper test:
   2.2.1.1 select, measure and weigh required ingredients according to recipe or production requirements; and
   2.2.1.2 prepare a variety of bakery products according to standard mixing procedures/ formulation/ recipes and desired product characteristics?
  2.2.2 Hands-on assessment in:
   2.2.2.1 use appropriate equipment according to required pastry products and standard operating procedures?
3. Is there a significant difference between the learners' level of competence before and after the YouTube utilization in the aforementioned specializations' competencies?
4. What is the impact of YouTube utilization in classroom instruction as perceived by the teachers and learners?
5. Based on the findings of the study what instructional manual can be crafted?

Literature Review

Acquiring quality education is a concrete structure to attaining sustainable development. Free access to high quality education helps locals equip themselves with the strategies, information and skills applicable in providing innovative solutions that may address world's common problems. According to Irina Bokova (2014), education can be a weapon to save and promote lives when delivered in safe, and supportive places. In whatever organization, it is not the system that make it work but the people running the system. In the field of education, the teachers are considered as front liners and they play a vital role. Investing in education at all levels is an investment that benefits lots of people. Education capacitates the young generation.

Sustainable Development Goal 4 aims to "guarantee equitable quality education for everybody and advocates opportunities and lifelong learning needed by everyone to improve their current living condition " (UNESCO 2016). SDG 4 is composed of 7 outcome targets and 3 mediums of implementation to achieve the SGD target outcomes by 2030. Outcome targets are the following; (1) Universal primary and secondary

education, it hopes to guarantee accessible education for all up to secondary level. This means that the state shall provide free education to those who cannot pay their tuition until secondary level, and quality training shall be given to them, (2) Early childhood development and universal pre-primary education, it aims to provide free primary education to all with quality trainings related to learners' preparedness in attaining primary education. This means that the state shall assure that trainings in the pre-primary education is being evaluated and supervised to ensure that learners equipped themselves with the basic knowledge that help them adjust and accept the training in the primary education.

The third (3) target is, Equal success to technical/ vocational and higher education, it aims to ensure equal access of quality technical vocational and tertiary education for both men and women. This means that reducing the barriers to skills enhancement and development of technical skills from secondary level to tertiary education should be given attention to provide learners more opportunities to mold and prepare themselves ready to embrace and deal the trials that awaits ahead of them, (4) Relevant skills for decent work, it aims to have significant increase on the number of youths being employed after acquiring relevant training. This means that access to TVET should be open to all who has interest in equipping themselves with the industry needed skills. Different learning and training modalities shall be utilized to ensure that skills are being acquired by the learners. Cognitive and non-cognitive skills shall also be developed like critical thinking skills, teamwork, creativity, problem solving skills and communication skills to ensure that they can get well along with others in the workplace, 5) Gender equality and inclusion, it aims to promote gender sensitivity and non-discrimination of persons with disability. This means, inclusion and equity for all, regardless of gender, age, physical condition, economic status, and race should be respected and opportunities should be open to all, (6) Universal Youth Literacy, it aims to developed literacy and numeracy skills. This means that, everyone across the world should achieve functional literacy and numeracy before completion of basic education which is necessary for all the learners not only to comprehend figures and instructions which are helpful in completing given tasks but also in conveying their own insights about the opportunities and responsibilities they have on hand.

Lastly, (7) Education for sustainable development and global citizenship, it aims to ensure that all learners shall acquire the necessary knowledge and skills needed in promoting sustainable development. This means that despite gender and race they should promote peace, unity, equality, and show appreciation, love and respect to one's own uniqueness and differences that may lead to attaining sustainable development goal by 2030. This encourages everyone to value the holistic development not only their hard skills but also their soft skills in resolving global challenges, especially in the workforce that may have impacts to the lives of many individuals around the globe.

UNESCO SGD 4 will not be achieved without proper planning of implementation. The implementation has impacts in attaining the expected outcomes, thus UNESCO has three (3) plans for implementation in unpacking Sustainable Development Goal number four. The clear implementation plans are well analyzed and evaluated to ensure that targets will be attained, and they are the following;

1. Effective learning environments, UNESCO plans to construct and improve school facilities that are conducive to learning, the states shall construct school facilities that give comfort to the learners while in school.
2. Scholarships, UNESCO plans to meaningfully increase the availability of scholarships mostly in the developing countries. This means, highly developed countries shall give assistance to the developing countries when it comes to providing free education and training, this has to be done because working together as family produce applaudable results. Scholarship gives the people the chance to empower themselves that would lead them to have decent jobs that would uplift their living condition. Sponsors from developed countries are encouraged to give other forms of support aside from scholarships. The beneficiaries of scholarships should come from the underprivileged sectors who cannot afford to send themselves for training in private institutions.
3. Teachers or educators, UNESCO plans to have significant increase in supplying highly qualified teachers. Trainings to capacitate teachers should be given to them to fully equip them with the current vital information, skills, and knowledge that is relevant to their field.

In developing learners' skills, teachers should identify learners' ways of learning in order to adjust to their multiple intelligences and utilize various teaching pedagogies and integrate Gardner's theory into the classroom discussion (Lichtenstein, 2018). Howard Gardner elaborated seven diverse intelligences of every individual that if given the chance to be

holistically nurtured will give the people the chance to live the life worth living.

Gardner's theory resulted from cognitive study, he believes that every learner possesses distinct kind of mind and thus every learner must be motivated in different ways for every learner learns, performs, remembers, and understands in diverse ways. Once the learner's intelligence is identified, the teachers have the opportunity to capacitate and develop the learner holistically (David, 2014). Every individual has different strengths and ways in learning and if the teachers identified learner's intelligences before giving task, then probably the learner can produce good result (Herndon, 2018). Research manifested that those teachers who use differentiated instructions catered learner's interests, but this can only be effective if teaching materials must be presented intelligently by the teachers. Teachers who usually provided effective differentiated instructions are those who are well trained on how it has to be done.

Jean Piaget believes, human beings were born inheriting mental ability of their parents but using it to its fullest can be developed overtime (McLeod, 2018). In order to learn, one must use his mind to think and open his mind for new knowledge (Arshavskiy, 2018). Teachers must create a classroom putting the child as most valued and his interest is the utmost concern. Teachers should facilitate learning and motivate learner to learn. Spoon feeding of knowledge must be avoided, discovery of knowledge should be facilitated.

The Filipino people are known being diligent and they are recognized in the international arena as competent workers. This could be true; however, the current educational system challenged the teachers to provide quality graduates who are globally competitive. Various challenges may hinder teachers in producing quality learners. Lack of teaching materials, facilities, tools and equipment and the system of Philippine education itself may have impact to teachers in molding the skills of the students. In Technical Vocational track for one, the specialization is being offered despite the fact that the school facilities, tools and equipment are not satisfactory based to TESDA training regulations. The challenge to mold the learners is in the teachers' shoulders but the government plays an important role in overcoming and surpassing the challenge.

In line to skills development, to meet the industry requirements, the Department of Education front liners are tasked to motivate and encourage learners to enhance their skills for them to be ready to embark in the real world of work in the future. Nowadays highly industrialized countries are focusing to develop (TVET) or known as TVL education in the Philippines. Philippine government first introduced Technical and Vocational Education (TVE) in 1927 through Commonwealth Act No. 3377 with its intention to train people for employment. The program was extended to post-secondary education through the C.A No. 313 in 1939. In 1963, the Bureau of Vocational Education (BVE) was crafted through R.A No. 3742, the program was created to provide free training for those who have interests in trade, agriculture, fishery, and other vocational programs in order to produce skilled workers for the abovementioned sectors. Educational Development Decree of 1972 through P. D No. 6-A recognized national development can be achieved through empowering the people via skills development. In 1975, the Bureau of Secondary Education absorbed the secondary vocational courses, learners in secondary level were trained to learn various skills. With the desire to improve the program, Education Act of 1982 produced the Bureau of Technical Vocational Education (BTVE) which aims to help individuals to nourished their potentials that would help them get high-paid jobs, and eventually in 1994 TESDA was born.

The enactment of R.A No. 7796 of 1994 gives birth to TESDA. The agency encouraged the full participation and cooperation of the industry, labor group, local government units to help provide quality workers for the industry who can fill in job vacancies and at the same time, workers who can compete globally. TESDA is being mandated to; (1) Integrate, coordinate and monitor skills development programs which means that they have to think and run programs that are beneficial to the people and the community, programs that will address unemployment concerns and programs which will cater the skills and interest of the people living in the community, (2) Restructure efforts to promote and develop middle-level manpower which means that they have to encourage the youth who cannot afford to go to college to undergo trainings under their program to empower themselves and land to a high-paid jobs that can augment their lives, (3) Approve skills standards and tests which means that they should set standards to be followed by the trainers which led to having uniformity of standards all throughout the country, (4) Develop an accreditation system for institutions involved in middle-level manpower development, which means that guidelines and restrictions will be set, thus all institutions should follow what is suggested in their training regulations, this is to ensure that the basis in conducting trainings are the same.

Also, (5) Fund programs and projects for technical education and skills development which aims to reach out the people even in the remote barangays to enroll in their programs and develop their skills that would results to providing skilled workers to the workforce and address the uneven distribution of skilled workers, and (6) Assist trainers training programs which means that they have to monitor the conduct of the training, evaluate the training, update the needs of the industry, and upgrade the training regulations in order to continue producing the needed skilled workers in the industry not only for the country but even abroad.

In the same manner, TESDA is expected to; (1) Devolve training functions to local governments which means that training center should be established outside urban areas and tap the local government officials in rural areas, and work hand in hand with them to empower its constituents with the needed skills which can help them work here and abroad after the training, (2) Reform the apprenticeship program which means that they are given the responsibility in overseeing the reconstruction of the apprenticeship program to see to it that trainee's acquired skills is being used and develop during the apprenticeship program, they also have to evaluate the length of time needed for apprenticeship in each qualification, and (3) Involve industry/employers in skills training which means that industry and private institutions should partner with TESDA not only in giving trainees the opportunities to use and develop their skills during apprenticeship duration, but also to be updated of the skills trainings to be provided to the learners.

In 2013, R.A 10533 the "Enhanced Basic Education Act of 2013 or known as the K-12 Program was promulgated. This curriculum increases the number of years of the basic education from 10 years to 13 years, making kindergarten mandatory and adding two more years in high school which is now called senior high school.

The K-12 program, aims to produce globally competitive graduates in both academic and technical vocational fields. In order to achieve this aim, different tracks and strand are being offered to the learners for them to enroll themselves in the track and strand where their interests will be catered and develop. In the technical vocational aspect, TVL has given the responsibility to provide technically skilled graduates who might opted to work after graduation rather than going to college due to financial constraints. This program aims to address job mismatch, unskilled youth which resulted to the increase of youth unemployment rate, and providing equal opportunities in augmenting life's condition in the absence of higher education opportunities.

The Philippine government continues to develop programs which can help every Filipino to have better lives. In 2014, R. A No. 10467 known as the "Ladderized Education Act of 2014 was created. This provides various opportunities for both career and educational advancement to learners and workers through technical vocational education. The ladderized education, leads Commission on Higher Education (CHED), TESDA and DepEd to work hand-in-hand and conduct close monitoring and coordination in order to effectively apply and implement a unified Philippine Qualifications Framework (PQF) for easier transitions and progressions among TVET, TVL, and higher education. This program aims to ensure that every Filipino has access to quality and accessible education and training which is vital in providing quality workforce which will contribute to progress of national development and individual progress in particular.

In the Philippines, TVL is viewed as a tool for productivity development and alleviate poverty in the region (Pavlova, 2016). Skilled workers are assets of many countries because they largely contributed to the growth of national development. Skills development should be valued and given importance because a well-balanced number of skilled workforces has huge contribution in addressing job mismatched and it also contributes to the growth of a nation's economy status (Aniceto, 2016). Through TVL, those who would like to empower themselves with skills which can help them live a bountiful life will be given a chance. This is an avenue for those who would like to hone their creativity with less expenses, and an avenue where one can develop his skills without going to higher education in the presence of financial issues. In the Department of Education, TVL aims to help students land a decent and high-paid job after graduating from senior high school.

In Japan, according to Tsukamoto (2016), long time ago, students and parents give more importance on academic education rather than vocational education. Before, academic education is chosen by the highly academically inclined students and vocational education is often viewed as a second choice. However, recently, due to changes of demands from the industry, specialized courses now given high regards by the academically inclined learners at professional training colleges ("senmon gakko").

Enrolments in vocational courses have significant increase. Japan implemented new policies and programs that developed the skills of Japanese people. Moreover, Japanese changed their views of vocational education, slowly TVET is being seen as a strong foundation of skills development and a strong source for their country's national growth (Goodman, 2016). Vocational education is now a nest for learners either they are academically inclined or skill hunters.

Furthermore, in Japan, it was slowly noticed that the graduates from vocational high school have better interpersonal skills, people from the middle and lower class can easily adjust with their co-workers, they used their skills to keep their jobs and have better family income (Goodman, 2016). Japan's revitalization of the vocational high school system to develop the skills of the learners at an early age, gives learners the chance to develop their skills while they are in an academic high school.

In Singapore, the country created a close connection between economic development and education (Stewart, 2016). Singapore has a strong work force which give them economic growth and workforce stability and because of that Singapore is considered having a rising economy in the world. The longtime poorly regarded vocational education has gained its importance and Singapore repositioned it, thus it gives the people new hope as an avenue in providing quality life to their families.

To combat the social discrimination against less academically inclined learners, ITE promoted and repositioned its nature of minds-on, hands-on, hearts-on" application of learning. Nowadays, ITE is already part of the formal education system in Singapore offering vocational education, having Workforce Qualification System (WSQ) as its credentialing system which vocational in nature that promotes continuous education and training. Singapore finally completed the revamped of the curriculum and skills certification system. They created courses which suit the needs of the industries and creates a marketing plan as roadmap to promote the image of vocational education not as the last resort in augmenting the lives of the less fortunate individuals but an avenue that the world needs to sustain economic development.

Singapore crafted structured programs that are beneficial to the learners through the combination of quality education and well evaluated training in order to provide better support and career exploration of its learners (Yeo, 2016). In the field of education, their guidance counsellors assist the learners in choosing the career that fits their interest and personality, conferences with their learners to evaluate their potentials were given much importance. The contributing factor to Singapore's success in technical education is their system. Learners have strong academic foundation during early years so they have more time to develop sophisticated skills demanded by employers. At present, learners consider ITE track as a legitimate path to a bountiful future.

Methodology

Research Design

The quantitative and qualitative methods of research were employed in this study. Quantitative method used descriptive and quasi-experimental research designs; the qualitative method used the phenomenological research design. To know the level of teachers' personal characteristics, learners' level of competence before and after YouTube utilization both in written and hands-on assessment the quantitative treatment of data with appropriate statistical formula was employed, to test the level of significant difference of learners' performance before and after YouTube utilization the Wilcoxon signed rank was utilized, and qualitative method was also used to know impact of YouTube utilization to teachers and learners.

Environment

To give the readers a clear picture of the research environment, the researcher presents the location of the study. This study was conducted at Samboan National High School in Poblacion, Samboan, Cebu, Philippines. The research venue is located in the southern part of Cebu Province, 180 kilometers from Cebu City. Accessible by land or by sea transportation, estimated travel time from Cebu City is about 4.0 hours via public land transportation either Via Oslob (Southeast) or Via Barili (Southwest). Samboan National High School was founded in June 1993 by the late Mayor Uldarico C. Hisoler. It started with two teachers and with 81 enrollees who graduated on March 1997 as pioneers. By that time, Samboan National High School was an extension of San Sebastian National High School, the first public high school in Samboan.

Instrument

The instruments of this study were taken from; Perception of students in using YouTube videos to enhance their autonomous learning (Shamsuddin, 2014), Students' perspectives on YouTube video usage as an e-resource in the university classroom (Jackman, 2014), Institutional assessment of academic performance and work immersion readiness of senior high school students: basis for intervention program (Castaño, 2018), Department of Education Food and Beverage Services NC II (Arcos, 2017), Department of Education Bread and Pastry Production NC II (Kong et. al., 2016), and TESDA Training Regulation in Food and Beverage Services and Bread and Pastry Production, slight modifications were made to align it with the kind of respondent groups in the researchvenue.

Data Gathering Procedure

The researcher sought permission letter to the Schools Division Superintendent of Cebu Province to distribute copies of the research tool to the identified respondents and to conduct learner respondents' hands-on assessment. After having the approval, the researcher distributes copies of the research instrument to the identified respondents, attached to it is the approved permission letter. One week was allotted to the respondents to answer the survey questionnaire, and the conduct of hands-on assessment to the respondent learners. Data were gathered and statistically treated as basis for the discussion of the result.

Statistical Treatment

To determine the profile of the respondent groups, the simple percentage formula was used. To find out the learners' level of competence before and after YouTube utilization in the identified Home Economics specializations the weighted mean was used. To test the significant relationship between the learners' level of competence before and after the utilization of YouTube Wilcoxon signed rank was used.

Results and Discussion

Table 1. *Teachers' Profile*

Variables	*f*	*Percentage*
Age		
50 and above	1	16.67
40-49	2	33.33
31-39	1	16.67
21-29	2	33.33
Total	6	100.00
Gender		
Male	1	16.67
Female	5	83.33
Total	6	100.00
Highest Educational Attainment		
Graduate of Master's Degree	1	16.67
With Units in Master's Degree	2	33.33
College Graduate	3	50.00
Total	6	100.00
Field of Specialization		
Cookery	2	33.33
Beauty Care	1	16.67
Bread and Pastry Production	2	33.33
Food and Beverage Services	1	16.67
Total	6	100.00
TESDA National Certificate		
TM 1	2	33.33
NC II	3	50.00
None NC	1	16.67
Total	6	100.00
Teaching Experience		
20 years and above	1	16.67
6-10 years	1	16.67
5 years and below	4	66.66
Total	6	100.00

Table 1 shows that, there were six (6) teachers who were respondents of this study. It can be observed that there were two (2) teachers or equivalent to 33.33 who were 21-30 years old, one (1) or equivalent to 16.67 was 31-40 years old, two (2) were 41-50 years old and one (1) was above 50 years old. It can also be noted that, one (1) respondent or equivalent to 16.67 percent was male and five (5) respondents or equivalent to 83.33 percent were females. The table presented that the home economics teachers in the research venue are dominated by female teachers.

Table 1 also shows that, three (3) or equivalent to 50.00 Home Economics teachers were college graduates, two (2) has units of master's degree and one (1) was a graduate of master's degree. It can also be seen that, two (2) teachers or equivalent to 33.33 percent were Trainer Methodology (TM1) passers of TESDA, three (3) teachers or equivalent to 50.00 percent were National Certificate II holders of the specialization handled, and one (1) or equivalent to 16.67 percent was none NC holder. As to their years of teaching experience, four (4) or equivalent to 66.66 percent were in the service for less than 5 years, one (1) teacher has been in the teaching field for 6-10 years, and one (1) teacher has been in service for more than 20 years.

Based on DepEd Order No. 3, s 2016, to ensure that teachers have knowledge and skills to impart to their learners, guidelines were given. Teachers who will be handling specializations under TVL track must acquire (TESDA) National Certificate (NC) at least one level higher than the course/specialization to be taught or if there is no national certificate higher than the specialization to be taught, at least same level. However, exceptions are given to teachers who will be handling courses/specializations with no National Certificates. Teachers must be abreast with the latest trends in developing learners' skills in order to provide them the training that they deserved (Orbeta & Esguerra, 2016). The rapidly changing industry demands of its workers' qualification calls for urgent upgrade on the system of education to be aligned with the industry skills requirement.

Effective teachers tend to stay effective by keeping themselves abreast on the trends in education (Yin et. al., 2015). Teachers' pursuit in post-graduate studies help them in adapting the latest strategy and technology that suit to students' interest in learning.

Teachers' teaching experience also plays a vital role in the teaching field. Teachers' confidence in delivering the lessons will be honed over a span of time. Teaching experience gave the teachers the opportunity to improve in their craft, learn different teaching strategies and motivations that may work well in dealing with their learners. On the advent of technology, new teachers may have an edge over the seasoned teachers in terms of using YouTube, in delivering the lesson, and developing students' skills. Teachers who used technology intervention regularly have developed their confidence in delivering the lesson (Kurga, 2014). Teachers as front liners of education may bring changes on teaching pedagogies to develop learners' potentials. However, teachers' teaching experience also equipped them with strategies that develops their expertise in delivering the lessons. Teaching experience plus the knowledge in technology intervention without doubt helps the trainers in honing the learners to make them more competitive and job-ready after graduation.

Teachers' Personal Characteristics

Personal characteristics of an individual has impact to their duties and responsibilities. Personality traits are distinguishing qualities of any individual. Personal characteristics shows habitual patterns of a person's behavior, which shows person's temperament and emotion. Effective teaching needs well-rounded instructors who are confident enough to deliver the lessons. The 21st century learners have the ability to notice if teachers are not ready to discuss the topic, nervous, and unsure of the information they imparted.

Strong Work Ethics. Employees work ethics ensure positive ambience at the workplace. A happy working environment leads to create employees' satisfaction and motivates them to do well in their jobs. A happy working place develops sense of loyalty and attachment towards the institution. Employees work ethics can be motivated by the working environment they belong. Their work ethics can make them stay or leave the company as it can be basis for the employers to hold or let them go after the evaluation process.

Table 2 shows, TVL teachers in the research venue come to work with goal in minds with a weighted mean of 4.67 with verbal description of outstanding (O), Teachers embody certain principles that guided them in providing quality output has the lowest mean which is four point seventeen (4.17) with verbal description of very satisfactory (VS). Overall, when it comes to strong work ethics, home economics teachers have a composite mean of 4.42 or equivalent to outstanding.

Table 2. *Strong Work Ethics*

Variables	*f*	*Percentage*
Age		
50 and above	1	16.67
40-49	2	33.33
31-39	1	16.67
21-29	2	33.33
Total	6	100.00
Gender		
Male	1	16.67
Female	5	83.33
Total	6	100.00
Highest Educational Attainment		
Graduate of Master's Degree	1	16.67
With Units in Master's Degree	2	33.33
College Graduate	3	50.00
Total	6	100.00
Field of Specialization		
Cookery	2	33.33
Beauty Care	1	16.67
Bread and Pastry Production	2	33.33
Food and Beverage Services	1	16.67
Total	6	100.00
TESDA National Certificate		
TM 1	2	33.33
NC II	3	50.00
None NC	1	16.67
Total	6	100.00
Teaching Experience		
20 years and above	1	16.67
6-10 years	1	16.67
5 years and below	4	66.66
Total	6	100.00

Positive Attitude

Our attitude is the expression of ourselves. We have options to choose to be dynamic and optimistic, or to be lonely and pessimistic towards our work. Positive

attitude helps us to do better in our responsibilities and deal stressful situations at work with happy hearts. Employees positive attitudes create unity and teamwork which leads to creating a peaceful workplace for everyone. Companies with employees with positive attitude provides a working place that everyone would like to report to.

Table 3. *Positive Attitude*

Variables	*Weighted Mean*	*Description*
1.I am always thankful for any suggestions from my colleagues.	4.67	O
2.I enjoy helping others without expecting anything in return.	4.83	O
3.I am willing to do the tasks given to me and provide good results.	4.47	O
4.I enjoy sharing my knowledge and skills to my colleagues.	4.50	O
Composite Mean	4.67	Outstanding

Table 3, presents that *TVL teachers enjoyed helping others without expecting anything in return* with a weighted mean of four point eighty three (4.83) with verbal description of *outstanding*, the data also shows that the *respondents were willing to do the tasks given to them and they can provide good result* with the weighted mean of four point forty seven (4.47) or having the verbal description of *outstanding*. The composite mean of teachers' positive attitude is four point sixty seven (4.67) or equivalent to *outstanding* which means that the home economics teachers of the research venue have positive attitude towards work.

Studies show that teachers with passion in their profession have less possibility to quit teaching (Üstüner, 2017). Attitude is learned and developed with the willingness of the person to do it. It cannot be taught; it is determination that takes the person to change for the better. Attitude is uniquely within us; it is the product of our own perception and evaluation of the experiences we encountered in life. In teaching, teachers should be positive in their dealings with their job because with their capacity to nurture learners lies the future of many individuals. Teachers' positive attitude towards teaching may results to producing quality learners ready to face the world.

Communication Skills

It is vital for every teacher to possess remarkable communication skills because teachers and learners' success in engaging the lesson, largely depends on teachers' capability to communicate effectively with the learners. Teachers must possess good communication skills to convey their lessons to their learners which is essential for them to achieve academic success. In the absence of communication skills, teachers may decapacitate the teaching and learning process and may affect quality of education attained by the learners.

Table 4. *Communication Skills*

Variables	*Weighted Mean*	*Description*
1.I pay attention to what others are saying.	4.33	O
2.I think what I want to say before I say it.	4.50	O
3.I am open to listening to and understanding other person's point of view.	4.67	O
4.I deliver my ideas with confidence and humility.	4.33	O
Composite Mean	4.46	Outstanding

Table 4 reveals that, the teachers who were respondents of this study were *open to listen to understand other person's point of view* with a weighted mean of four point sixty seven (4.67) or equivalent to the verbal description of *outstanding*, while *delivering ideas with confidence and humility* has the lowest mean which is four point thirty three (4.33) or equivalent to *outstanding*. The composite mean of the respondents' communication skills is four point forty six (4.46) or equivalent to *outstanding*. This shows, the respondents have the ability to convey ideas which is important in the teaching field.

Communication is an element in transferring information effectively (Khan, 2017). Teachers must be aware that communication is a key to successful transfer of learning. Fundamental to learners' success in learning is the teachers' skills to transmit knowledge and skills to the learners. Teachers must consider communication skills as an asset to help their learners achieve both academic and technical skills. Without skills in communication, there would be tendency that teachers might disable the learning process.

Time Management

Organizing schedules helps anyone to get things done with positive results. Time-management skills can ultimately lead to completing tasks on time without stressful scenarios or limited if there's any. Learning time management skills is beneficial to minimize procrastination and reduce anxiety, because time management is viewed as an art of arranging schedules

of activities which lead to achieving objectives with a happy heart.

Table 5 shows that, when it comes to time management, the teachers who were respondents of this study *report to work on time, and always do their tasks religiously* have a weighted mean of four point fifty (4.50) with a verbal description of *outstanding*, while *setting clear goals that can lead to success in their careers* has a mean of four point zero (4.00) with verbal description of *very satisfactory*.

Table 5. *Time Management*

Variables	*Weighted Mean*	*Description*
1.I report to work on time, and always do my tasks religiously.	4.50	O
2.I can get things done before its deadline.	4.00	VS
3.I find time for an intellectual conversation with my colleagues.	4.33	O
4.I set clear goals that can lead to success in my career.	4.00	VS
Composite Mean	4.21	Outstanding

Overall, the composite means of the respondents as to their time management is four point twenty one (4.21) which is equivalent to *outstanding*. Time management is an element which is considered indispensable of any school organizations (Khan, 2016). Time is considered as the most precious thing in the universe. It is an important skill to effectively manage time to produce output in a given period of time. Time management is important and it's essential that you will use every minute as effectively as possible. Time management is the element needed in organizing tasks, deciding the time allocation for the lesson from lecture to performing activities, and evaluating learners' progress to have ample time for those who need remedial classes.

Problem Solving skills

Having skills to solve problems help anyone to assess the root cause of the problem and determine best solution to the problem. Problem-solving skills is extremely necessary in every career not only in teaching profession. In the Department of Education, teachers must know how to address the problem when it comes to resources in teaching, not all subject areas are lucky to have the resources needed, teachers must be aware the different sources of teaching and learning material to lighten their burden.

Table 6. *Problem Solving Skills*

Variables	*Weighted Mean*	*Description*
1.I can determine the root cause of a problem and can find best solutions.	4.00	O
2.I can solve problems in a timely manner.	4.17	VS
3.I can communicate the problems to others.	4.33	O
4.I can apply holistic thinking in handling any issues and concerns.	4.33	O
Composite Mean	4.21	O

Table 6 shows that, the respondents have a weighted mean of four point thirty three (4.33) or equivalent to *outstanding* for both *communicating the problems to others, and applying holistic thinking in handling any issues and concerns*, this means that they have the ability to deal with problems. On the other side determining the root cause of a problem and finding best solutions has a weighted mean of four point zero (4.00) or equivalent to *very satisfactory*. The data shows they have to improve in this aspect.

Self Confidence

Self-confidence is an ability to generally enhance one's determination, making it as valuable asset to improve life status. Self-confidence is so powerful; teachers should face learners with full confidence to get their respect. It is being considered as the voice inside that gives us the power to boost in doing the things which fears us. In teaching, self-confidence is very important. Confidence is learned and not inherited from the parents; it has to be cultivated. Anyone who would like to have it must nurture it and must have the determination to build it within. In the field of education, teachers with self- confidence may enjoy teaching profession. In the world of education, teachers should be confidently knowledgeable of their topics or lessons before delivering the lessons to their learners to ensure that transfer of learning will be effective.

Table 7. *Self Confidence*

Variables	*Weighted Mean*	*Verbal Description*
1.I can present my ideas with confidence.	4.33	O
2.I can give genuine compliments to others.	4.67	O
3.I accept my imperfections and take it constructively.	4.50	O
4.I can set effective goals and work to achieve them.	4.17	VS
Composite Mean	4.42	Outstanding

Table 8. *Learners' Profile*

Variable	*Specialization*		*f*	*%*
	FBS	*BPP*		
Age				
16-19	44	45	89	98.89
20 and above	1	0	1	1.11
Total	45	45	90	100
Male	10	12	22	24.44
Female	35	33	68	75.56
Total	45	45	90	100

Table 7, shows that the item "I can *give genuine compliments to others,"* has a weighted mean of four point sixty seven (4.67) with verbal description of *outstanding*, while the item " I can *set effective goals and work to achieve them*" has the lowest weighted mean of four point forty seven (4.47) with verbal description of *outstanding*. Overall the composite mean of home economics teachers' self-confidence is four point forty two (4.42) or equivalent to *outstanding.* Based on the results the respondents are confident enough to do their tasks as teachers.

Learners' Profile

The learners of TVL track are those who enjoyed working with their hands. Theories are not enough for them, they have to execute what they have learned. Gender does not matter in taking any specializations under the TVL track. All specializations welcome both males and females as long as they have the interest in it and they were treated fairly

Table 8 presents that, 89 learners or equivalent to 98.89 percent were on their 16-19 years of age and one (1) learner or equivalent to 1.11 is above 20 years old. As to their gender, 68 or equivalent to 75.56 percent were females and 22 or equivalent to 24.44 percent of the learners were males. In terms of specializations, 45 or equivalent to 50.00 percent were specializing food and beverage services and 45 or equivalent to 50.00 percent were specializing bread and pastry production. The data shows that Home Economics strand under TVL track attract learners in senior high school.

TVL has a prominent place in achieving Sustainable Development by 2030. Equal access to affordable, high quality TVL/TVET is an aid in achieving Sustainable Development Goals (SDGs), together with a commitment to make significant increase of youth employment rate with relevant skills (King, 2016). Vocational education is an essential tool for a country's skills development training that would produce workers fit to perform the tasks in the industry. It provides an alternative educational path for those who want to grow professionally either young or old but cannot afford college education, and at the same manner, it produces qualified manpower required to boosts the economy. Technical Vocational Livelihood education is open to those learners who want to acquire industrial skills. TVL education is gender sensitive, it welcomes males and females in any specializations as long as they have the drive to learn the skills in their chosen field.

School's Facilities, Tools and Equipment

In Technical Vocational Livelihood track, the availability of facilities, tools and equipment is a must in developing students' skills. Schools with complete facilities are fully aware to the changing needs of educational program. If the school's facility is conducive to learning, there is a bigger chance for learning to take place.

Food and Beverage Services Facilities

The facilities for FBS are where the training takes place. The Training Regulation of TESDA has a standard space requirement for the training area to guide the Department of Education in providing a training area for FBS to ensure that the learners have an appropriate place where they can learn theories and put learning into practice before they will be sent for work immersion before graduation.

Table 9. *Food and Beverage Services Facilities*

Variables	*Suggested Area Based on TESDA TR*	*Rating*
Lecture area	5 X 10 meters	Satisfactory
Laboratory area	5 x 4 meters	Satisfactory
Wash area	2 x 10 meters	Not Satisfactory
Facilities/equipment /circulation	5 x 5 meters	Not Satisfactory

Table 9, reveals school's facilities for FBS in the research venue. It can be seen that when it comes to the facilities, the school got a *satisfactory* rating of the following concerns; *lecture area, laboratory area*, and not satisfactory rating for *wash area, and circulation area.* It shows that the research venue provided space for the training of FBS, however there are still an area to be improved.

Availability of school facilities manifests that teachers and administrators are driven to give learners a comfortable learning environment (Majarhan, 2015). School physical facilities play a significant role in providing conducive learning environment to learners. In the field of TVL/TVET, the facilities in every specialization is necessary in developing learners' skills. TVL education prepares the learners to be industry ready, therefore, they should be exposed to environment similar to workplace where they might land for work after graduation, so that adjustments related to the facilities would not be a big struggle for them if they will be exposed to the facilities during their education time.

Table 10 *(see appendix)*, presents the status of the tools and equipment in the research venue for food and beverages services. As to the *dinnerware*, three (3) items have a *satisfactory* (S) rating and five (5) items have *not satisfactory* (NS) rating, as to *glassware* two (2) items *have satisfactory* rating, and six (6) items *have not satisfactory* rating, as to *cutleries* six (6) items have *satisfactory* rating and 10 items *have not satisfactory* rating, and as to the other service ware and accessories 11 items have *satisfactory* rating and12 items have *not satisfactory* rating.

Tools and equipment are necessary in attaining efficient achievement related to technical skills longed by TVL learners (Ogbuanya, 2014).The learners should be familiar on the things they will get across once they will embark in the industry. The incompleteness of tools and equipment may affect the knowledge to be gained by the learners in the TVL track.

In the unavailability of necessary tools and equipment technology intervention should be considered by the teaching force in TVL education as an aid in delivering the lessons (Anindo et al., 2016). The teachers should embrace the modern technology to alleviate the problem related to the lack of tools and equipment needed in teaching FBS and other specializations. YouTube utilization can help teachers in developing learners' skills even if lack of tools and equipment problem arises. The use of technology in presenting the lessons may motivate the learners to take part in the discussion (Vaskovic, 2014). YouTube integration can help teachers to introduce FBS tools and equipment to the learners that were not available in the school. Technology interventions like YouTube utilization helps the TVL teachers and learners to get acquainted with the different tools and equipment by using video clips. Technology interventions should be taken into consideration in providing information to learners. Integrating technology in classroom discussion helps sustain quality education for TVL learners.

Bread and Pastry Production Facilities

The BPP facilities must be of concrete structure. Training Regulation of TESDA has suggested space requirements for the teaching and learning and circulation to ensure that appropriate training will be given to the trainees during the entire training period.

Table 11. *Bread and Pastry Production Facilities*

Space Requirement	*Size*	*Rating*
Lecture Area	40 sq.m	Satisfactory
Training Space	1 sq.m	Satisfactory
Laboratory	40 sq.m	Not Satisfactory
Learning Resources	15 sq.m	Not Satisfactory
Circulation Area	36 sq. m	Not Satisfactory

Table 11, shows that two (2) of the space requirements have *satisfactory* rating namely; *lecture area, and training space* and 3 space requirements have not satisfactory rating namely; *laboratory, learning resources, and circulation area.* The table shows that the research venue has to improve the facilities provided for BPP to meet the suggested requirements of TESDA based on their Training Regulations.

Bread and Pastry Tools and Equipment

A well-equipped kitchen ignites passion for baking. Completeness of tools and equipment drive the baker to stay in the kitchen. As a baker, one of the first things you have to consider is your baking tools and equipment. Preparing different mixtures requires different baking tools and equipment. Using the appropriate tools produce good results.

Table 12 *(see appendix)*, presents the status of the tools and equipment for Bread and Pastry Production in the research venue. It can be observed from the table that as to their *baking tools*, 13 items have *satisfactory* rating, and 23 items have *not satisfactory* rating. As to their *equipment*, three (3) items have *satisfactory* rating, and four (4) items have *not satisfactory* rating. The data shows that when it comes to the BPP tools and equipment, the research venue has to work hard in providing enough tools and equipment for their learners.

A well-equipped baking environment inspires a baker to produce quality products (Evangelisti, 2015). Having the right baking tools help the learners in acquiring the skills that they need. The absence of training tools and equipment in the actual training venue may lead to learners' ignorance of its features and uses and this may result to poor self-confidence in doing the task while in the actual work field (Anindo et. al., 2016). The Department of Education should help the school administrators in providing the tools and equipment needed for any specialization in order for the learners to be familiar to it and practice on how it will be used.

Learners' Level of Competence Before and After YouTube Utilization

Modern strategy in teaching uses multimedia teaching materials and the internet to enhance learners' participation during the delivery of the lesson. Technology intervention like YouTube utilization has been considered in addressing the learning styles of verbal (linguistic) learners who want more explanation in order for them to really understand the lesson, visual (spatial) learners who want to see things before they can learn easily, and musical (rhythmic) learners. In TVL, it is important that you understood the theory before the application of skills. YouTube utilization is an aid to teachers in developing learners' knowledge and skills. Learners' multi intelligences of Howard Gardner can be addressed through technology intervention, video clips will help both visual, verbal and auditory learners. YouTube provides educational videos which are helpful to TVL education. According to the theory of John Dewey "learning by doing" which means that learners will learn best if they do the tasks by themselves. In TVL education, application of skills is the utmost concern. YouTube videos can be a guide for the learners in performing different tasks.

Food and Beverage Services

FBS is now widely known in food industry. People who can afford to pay servers during special occasions are more reluctant that quality service will be provided to the guests during the event.

Pen and Paper Test

Learners' skills can be measured both in actual demonstration and pen and paper test. The pen and paper test in FBS is important in verifying the stock knowledge of the learners of the theories being imparted to them.

Set Table According to the Standard of the Food Service

Setting tables makes the dining area elegant. Nowadays even if you are living in a remote areas you can observe that during feasts or any special occasions the tables for the guests are being set properly to give comfort to the guests and at the same time to make them feel that they are special. The way you set your table is important, because it influences three things: (1) It promotes emotions that people have about being together, (2) It makes your guests to feel and think that they are valued and they deserved extra effort that you put in, and (3) It creates beautiful appearance of the food offered which lead to enticing the appetite of your guests. A simple celebration may look special if table setting will be given attention. Putting center pieces adds beauty in your presentations and makes it elegant in the eyes of your guests. One's creativity will lead to presenting a unique and elegant table presentation.

Table 13. *Set Table According to the Standard of the Food Service*

Items	*Before YouTube Integration*		*Description*	*After YouTube Integration*		*Description*
	f	%		f	%	
1. Table setting refers to the process of setting a table with tableware	27	60.00	DME	45	100.00	O
2.Dinner plates and soup bowls are examples of silverware	15	33.33	DME	44	97.78	O
3.Silverware is set at about 2 inches from the edge of the table.	17	37.78	DME	43	95.56	O
4. The cutting edge of knives should be faced to the left.	26	57.78	DME	42	93.33	O
5.Chargers refers to the electronic gadget device.	15	33.33	DME	43	95.56	O
MPS		44.00			95.56	
Description		Did not Meet Expectations			Outstanding	

Table 13 presents, before YouTube utilization it can be seen that the item "*table setting refers to the process of setting a table with tableware" has the* highest percentage of correct responses which is 60.00 percent with a verbal description of *did not meet expectations*, and items "*dinner plates and soup bowls are examples of silverware, and chargers refers to the electronic gadget device"* have the lowest percentage of correct responses which is 33.33 percent with a verbal description of *did not meet expectations.* It can also be observed that after the YouTube integration the percentage of correct responses went high having the item "table setting refers to *the process of setting a table with tableware"* has the highest percentage of correct responses which is 100.00 percent with a verbal description of *outstanding*, the item " *the cutting edge of knives should be faced to the left*" has the lowest percentage of correct responses which is 93.33 percent with a verbal description of *outstanding*. The results manifest the impact of YouTube utilization in classroom instruction. Based on the table, YouTube utilization really helps the learners in understanding the lesson.

A well-planned presentation of lessons shows teachers' concern in providing quality education to the learners (Langlais, 2016). Educators who are concerns of the knowledge and skills acquired by their learners should integrate different approaches tailored to learners' individual learning needs.

Technology intervention like using video clips in teaching is a good strategy that influences motivation and efficiency of learning (Vaskovic, 2014). Technology intervention in teaching increases the efficiency of the self-learning process. YouTube could be a great source of supplementary videos in TVL education which are important in achieving the goal of Dep. Ed. to produce well-capacitated learners.

Skirt Properly Buffet or Display Tables Taking Into Account Symmetry, Balance and Harmony in Size and Design

Table skirting is an art which is considered as an effective solution to covering a bare table at an event or trade show to make it classy and presentable. A table skirt will enhance your table presentation and will help protect your table from any possible scratch or damage during an event. Table skirting will transform a simple table to a classy one and can be done in a restaurant or in a hotel event, or even at home.

Table 14 *(see appendix)*, shows that technology intervention truly helps the learners in improving their knowledge. It can be seen that, prior to the YouTube utilization the items " it is a popular table skirting style due to its simplicity and affordability, and they are commonly attached with overlap clips that will not flatten or damage the table skirt pleating" have highest percentage of correct responses which is 62.22 percent with the verbal description of did not meet expectations , the item "it is used to decorate tables for different occasions for elegance and to cover the actual table" has the lowest percentage of correct responses which is 40.00 percent with verbal description of did not meet expectations.

After YouTube utilization, it can be observed that the item "it is a popular table skirting style due to its simplicity and affordability" has the highest percentage of correct responses which is 100.00 percent with verbal description of outstanding, and the items "it provides more volume than standard box pleats, its pleats are narrower than a regular box pleats, giving the bottom of the table skirting a fuller appearance, and they are commonly attached with overlap clips that will not flatten or damage the table skirt pleating" have the lowest percentage of correct responses which is 91.11 percent with verbal description of outstanding.

YouTube integration is being used as a powerful educational and motivational tool that is being used in today's 21st century classroom setting (Wilson, 2015). Technologies nowadays have taken the attention of many individuals, it has impact on how people deliver communication, search and share information, create and ruin relationships, and it significantly influences how teachers deliver their lesson and how learners learn the discussion. Technology intervention helps the learners visualize the steps in skirting tables and visualize the different looks or designs which create an elegant look for the tables without the teachers executing it for them.

Hands-On Assessment of Napkin Folding Before and After YouTube Utilization

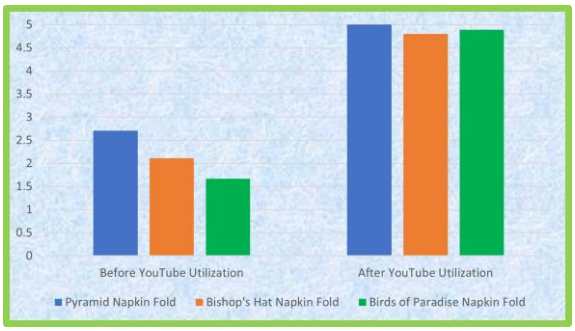
In Technical Vocational Livelihood Education (TVLE), conducting hands-on assessment is one of the ways in nurturing learners' skills. Hands-on assessment can help the TVL teachers determine the skills acquired by the learners. Aside from written assessment, the learners can show their skills through hands-on assessment. Hands-on assessment is very

important in TVL education, it is the time that the learners will apply their acquired knowledge. John Dewey's learning by doing theory is very applicable in the Technical Vocational Education. Hands-on assessment will test the capabilities of the learners in performing various tasks.

Fold Napkin Properly and Laid Cloth Napkins on the Table Appropriately According to Napkins Folding Style

Napkin folding is considered as an art in presenting table napkins for neatness and creative presentation during an event or occasion. Its true purpose is to protect the guests' clothes during meal time, but it cannot be denied that it adds beauty to table setting. An establishments' dining room looks better using the correct style, size of table napkin, and the right color that will match to the room décor must be observed. It can also be used as a face or lip wiper whenever necessary, however proper using of table napkin will be observed.

Graph 1. *Hands-on Assessment on Napkin Folding Before and After YouTube Utilization*



Graph 1 presents, before the YouTube utilization, the pyramid napkin fold style has the highest weighted mean of two point seven (2.7) or equivalent to satisfactory rating, and the birds' of paradise napkin fold style has the lowest weighted mean which is one point sixty seven (1.67) or equivalent to did not meet expectations. After the YouTube integration, the pyramid napkin fold style has a weighted mean of five (5.00) or equivalent to *outstanding*, and the bishop napkin fold has the lowest weighted mean of four point eighty-nine (4.89) or equivalent to *outstanding*. The increase of their weighted mean shows that YouTube utilization has impact in classroom discussion.

John Dewey's theory on learning capitalized learning by doing. In TVL, all learners are expected to perform various tasks. It would be exhausting for the teachers to keep on repeating the instructions and keep on demonstrating the tasks for the learners. Technology intervention provides new approach on learning, and it gives new supports to learning (Choukri, 2015). Using YouTube videos as support material to further illustrate concepts and enforce the learners learning is very effective. Technology intervention provides benefits to the learners during any classroom and learning session, and some of the advantages of technology intervention through YouTube utilization or video clips are the following; (1) it can deliver stimulus for classroom activities, (2) it provides information with less efforts from the teacher, (3) it can easily get learners' attention, (4) it brings the outside world into the classroom,(5) it helps turn imagination to experience, (6) YouTube integration or video clip makes learning easier, (7) videos in YouTube can be watched over and over again, (8) videos serve as guide in performing activities, and (9) it's good for visual, audio and musical learners. Providing skills to the learners will be a lot easier with the use of technology and sustaining quality TVL instruction will be possible though technology intervention.

Bread and Pastry Production

Written assessment allows more opportunities to teachers to assess learners' thinking and articulation skills, and get feedback from the learners without talking to them individually. Jean Piaget's cognitive learning theory helps the teachers to assess the knowledge gained by their learners. Through written assessment, the teachers will be able to evaluate learners' understanding about the topic without talking and observing them individually. Technology intervention can stimulate learners' interests that may produce good results during written assessment, and their readiness to learn maybe awaken with the use of technology during discussion.

Pen and Paper Test

In bread and pastry production, pen and paper test will help the teachers to review the stock knowledge of their learners.

Select, Measure and Weigh Required Ingredients According to Recipe Standards and Procedures

Selecting right ingredients and measuring it accurately create culinary magic. In baking it is very important to choose the right ingredients and measure it accurately for best result. Baking is like science it needs exact measurement which make it different from cooking. Selecting the best ingredients contributes to the

finished products. Measuring and weighing ingredients according to the recipe standards and procedures is a must in baking and it has to be observed properly to have quality products.

Table 15. *Select, Measure and Weigh Required Ingredients According to Recipe Standards and Procedures*

Items	*Before YouTube Integration*			*After YouTube Integration*		
	f	*%*	*Description*	*f*	*%*	*Description*
1.Cake flour contains more gluten and less starch.	14	31.11	DME	44	97.78	O
2.Shortening is the basic ingredient in baking that improves aroma, flavor, and nutrition in baked products.	19	42.22	DME	45	100.00	O
3.Compound lard is usually used in dough to give better taste and flavor.	22	48.89	DME	42	93.33	O
4.In measuring flour, shake the cup while measuring.	7	15.56	DME	41	91.11	O
5.Measuring cup is used to measure ingredients by volume.	9	20.00	DME	43	95.56	O
MPS	*31.56 %*			*95.56 %*		
Description	*Did not Meet Expectations*			*Outstanding*		

Table 15, shows that the respondents in Bread and Pastry Production learn informative information from YouTube integration, as it can be seen from the table, before the YouTube integration the item "*compound lard is usually used in dough to give better taste and flavor*" has the highest percentage of correct responses which is 48.89 percent with verbal description of *did not meet expectations* and the item *''in measuring flour, shake the cup while measuring*" has the lowest percentage of correct responses which is 15.56 percent with verbal description of *did not meet expectations*.

Before the YouTube utilization the MPS is 31.56 percent with verbal description of did not meet expectations. After the YouTube utilization the item "shortening is the basic ingredient in baking that improves aroma, flavor, and nutrition in baked products" has highest percentage of correct responses which is 100.00 percent with verbal description of outstanding and the item "in measuring flour, shake the cup while measuring" has the lowest percentage of correct responses which is 91.11 percent with verbal description of outstanding. Also, after the YouTube utilization the MPS is 95.56 percent or equivalent to outstanding. The results manifested that YouTube integration has impact in classroom instructions. The data gathered and presented may encourage home economics teachers to integrate YouTube videos during classroom discussion.

YouTube as an information resource supports learning (Almobarraz, 2018). Using video clips from YouTube can be a great help to teachers to get the attention of their learners to engage them in the discussion and motivates them to promote critical thinking, decision making, and creativity. Technology intervention proliferates learning in technical vocational education. The 21st century teachers should understand the ways of learning of the 21st century learners. The learners of today are exposed to the use of technology, though many of the young generation views YouTube as an avenue for entertainment only. Technology intervention helps teachers to solve problems related to providing information and skills acquisition, and it also lessens the burden of the teachers to keep on demonstrating the skills for the learners who cannot follow with one demonstration. It also helps the learners understand more about the topic and it gives them the opportunity to watch the video over and over again until they understood it well. Technology intervention like YouTube utilization could be an amazing teaching aid to teachers if used well, and a wake up call for the learners that they can learn valuable things in YouTube if they will look at it as a good source of learning.

Prepare a variety of bakery products according to standard mixing procedures/formulation recipes and desired product characteristics

Mixing is a term in baking which includes stirring, blending, creaming, beating, whipping, binding and folding. Mixing ingredients is basic in baking. Different mixing methods produce various texture and characteristics of the baked product. Various mixing methods will be used in baking different products. The baker must be aware of the mixing method suits for the product. Mixing the ingredients properly has great impact to baked products. There are different ways in mixing ingredients that a baker should familiarize because mixing methods greatly affect flour mixtures and it would also affect the quality of the product. Various techniques have been developed for efficiency and convenience of those who loved the world of baking. Though mixing methods are simple, still the baker should spend time in learning the different mixing methods to avoid failure in baking and to avoid wasting money spent for the ingredients.

Table 16 *(see appendix)*, shows that before the YouTube utilization, the item "*it is the simplest of all mixing techniques, it involves mixing the ingredients together using a wooden spoon or wire whisk until all ingredients are being combined*" has the highest frequency of correct responses which is 29 or

equivalent to 64.44 percent with verbal description of *did not meet expectations* and the item "*it is a type of mixing technique which is done only in baking bread*" has the lowest frequency of correct responses which is 19 or equivalent to 42.22 percent with verbal description of *did not meet expectations*. The MPS before YouTube utilization is 51.11 percent or equivalent to did not meet expectations. It can be seen in the table, after the YouTube utilization, frequency of the correct responses increased a lot, the highest frequency of correct responses is 45 or equivalent to 100.00 percent with verbal description of *outstanding*, and the lowest frequency of correct responses is 43 or equivalent to 95.56 percent with verbal description of *outstanding*.

After the YouTube utilization the MPS is 97.78 percent or equivalent to outstanding. The data shows that technology intervention through YouTube utilization gives the learners more opportunities to learn the lessons.YouTube videos provide not only fun but substantial information which may enhance learners critical thinking skills (Sethela et.al., 2015). Technology intervention can ignite learners to actively engage themselves in the discussion and demonstrate dynamic interest during lectures because they tend to understand the topic and visualize the lesson and connect it to real work settings.

Learners' learning is the utmost concern in education, Howard Gardner's multiple intelligences can be addressed by the teachers by using teaching resources that can tickle learners' interest. Good quality of education is determine mainly on the knowledge attained by the learners (Chtouki, 2015). The teachers in TVL education should exert efforts in integrating YouTube in the class to provide information, knowledge and skills, if in case it cannot be done by the teachers themselves.

Hands-on Assessment

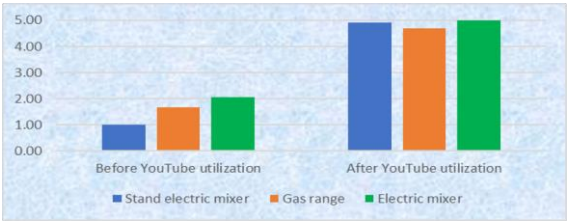
In any project, half in winning the battle is having the right tools. If you enjoy baking, consider not only the completeness of bakeware and utensils, but also the knowledge and skills in using them in a proper way. Knowledge in operating baking tools and equipment is important to every baker in order to enjoy baking without having fear in operating equipment.

Use appropriate equipment according to required pastry products and standards operating procedures

Using the right equipment for the task is important in providing quality result. Outputs will be affected if the right equipment will not be available. The availability of appropriate equipment will help learners familiarize it and it gives them the chance to use and operate it before they will go to their actual work field, and it gives the learners the opportunity to master themselves in using it.

Graph 2, presents the hands-on assessment results of BPP learners in operating equipment. Before YouTube utilization, using electric mixer got the highest weighted mean of 2.07 or equivalent to *fair*, and using stand electric mixer has the lowest weighted mean of 1.0 or equivalent to did not meet expectations.

Graph 2. *Use Appropriate Equipment According to Required Pastry Products and Standard Operating Procedures*



The graph also shows, that after the YouTube integration, using of electric mixer has the highest weighted mean of 5.00 or equivalent to *outstanding*, using stand electric mixer has weighted mean of 4.91 or equivalent to *outstanding*, and using gas range has the lowest weighted mean of 4.69 or equivalent to *outstanding*. The result shows that YouTube integration plays an important role in developing learners' skills mostly in the TVL education wherein availability of facilities, tools and equipment is limited.

YouTube integration in the classroom ignites learners' interests (Brown 2019). Using video presentation can be one of the best strategies that the teachers/trainers can use in providing knowledge to the new generation. YouTube integration can engage and immerse learners. The teachers can provide immersive and engaging learning experience to the learners by showing videos that will further give information related to the lesson.

Test of Significant Difference

YouTube is a source of information that is helpful in the educational system. The comfort of using videos from YouTube in teaching has gained its popularity. It

provides continuous and massive contribution in imparting knowledge and skills to learners. They can learn easily by using technology in the classroom, watching videos help them in performing activities that may sound hard but becomes easy with the help of the technology. Technology intervention has also been utilized to bridge the gap between digital natives and nontraditional learners. YouTube is not only an avenue of fun fare but also the kingdom for learning.

As shown in Table 17, using the Wilcoxon Signed Ranked Test, the result shows that there were significant differences between the learners' scores before and after YouTube integration.

The following dimensions, the null hypothesis was rejected, and the statistical analysis showed there is a significant difference between before and after YouTube integration in written assessment and hands-on assessment. Utilizing video clips during lectures increased learners' interests in the discussion (Ljubojevic, 2014).

Table 17. *Level of Significant Difference of Learners Performance Before and After YouTube Utilization In FBS*

FBS	*Median*	*Z-value*	*P-value*	*Alpha*	*Decision*	*Interpretation*
written						
Pre test	4					
Post test	10	-5.874	0.000	0.05	Reject Ho	Significant
Hand-on						
Pre test	4					
Post test	15	-5.862	0.000	0.05	Reject Ho	Significant
BPP						
written						
Pre Test	5					
Post Test	10	-5.877	0.000	0.05	Reject Ho	Significant
Hands-on						
Pre test	6					
Post test	15	-5.837	0.000	0.05	Reject Ho	Significant

Learners show better understanding and recall key points of a lecture with technology interventions. Using appropriate teaching resources with appropriate strategies in organizing and presenting relevant information may increase efficiency in learning (Khalidi, 2015). Those improvements of learners' knowledge after the YouTube utilization shows that YouTube utilization ignites their interests.

This study showed teaching the lesson with the teaching resources from the Department of Education plus the informative videos from YouTube improved the topic presentation and produced effective teaching and learning in technical vocational education.

This study provided results that technology intervention through YouTube utilization is a great help in teaching and learning. YouTube videos were seen as important influencers on factors for motivation and engaging learners to the learning process.

This study presents the effects of YouTube utilization as supplementary teaching material. Technology intervention has impact in providing knowledge and skills to the learners. Present methods of teaching should live with the expectations of 21st century learners, teachers should be abreast on the importance of technology intervention in a classroom discussion.

YouTube utilization helps the teachers to nurture learners' knowledge and skills despite their different learning styles. It can also guide those learners who learn best by doing because senior high school learners are already in their formal operational stage.

Conclusion

Based from the findings of the study, it is concluded that technology intervention in the TVL instructions has a positive impact in providing quality education to the learners of TVL track particularly in Food and Beverage Services and Bread and Pastry Production Specializations. Based on the result of the study, it is recommended that the instructional manual of Bread and Pastry Production (BPP), Food and Beverages Service (FBS) specializations be used.

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Table 10. Food and Beverage Services Tools and Equipment

Items	Required based on TESDA TR for 25 students	Rating	Items	Required based on TESDA TR for 25 students	Rating
Dinnerware			**Cutleries**		
Dinner plates, 10”	24 pcs.	NS	Dinner knives	24 pcs.	S
Show/service plates, 11-14”	6 pcs.	S	Dinner knives	24 pcs.	S
Salad plates 7-8”	24 pcs.	NS	Salad knives	24 pcs.	S
Fish plates, 8-9”	24 pcs.	NS	Salad forks	24 pcs.	NS
Dessert plates, 7-8”	24 pcs.	NS	Salad forks	24 pcs.	NS
Side plates or bread plates, 6”	24 pcs.	S	Fish forks	24 pcs.	NS
Soup plate/bowl	24 pcs.	NS	Soup spoons	24 pcs.	NS
Cups and saucers 5-6 oz	24 pcs.	S	Dessert spoons	24 pcs.	NS
Glassware			Dessert forks	24 pcs.	NS
Red wine glasses	24 pcs.	NS	Teaspoons	24 pcs.	S
White wine glasses	24 pcs.	NS	Cocktail forks	24 pcs.	NS
Water goblets	24 pcs.	S	Service forks	6 pcs.	S
Juice glasses/Hi ball	24 pcs.	NS	Service spoons	6 pcs.	S
Champagne flute	24 pcs.	NS	Steak knives	24 pcs.	NS
Collins glasses	24 pcs.	S	Butter knives	24 pcs.	NS
Pilsner glasses	24 pcs.	NS	Oyster forks	24 pcs.	NS
Ice tea glasses	24 pcs.	NS			
OTHER SERVICE WARE					
Coffee pot	2 units	S	Peppermill	2 pcs.	NS
Tea pot	2 units	S	Soup ladles	2 pcs.	S
Salt and Pepper shakers	4 units	S	Ice buckets with tongs	2 pcs.	NS
Service trays	6 pcs.	NS	Water pitchers	. 6 pcs.	NS
Silver platter	8 pcs.	NS	Plate covers	8 pcs.	NS
Round (bar) trays	8 pcs.	NS	16”x16” T. Nap	2 pcs.	S
Tooth pick holders	4 pcs.	S	54”X54”	4 pcs.	S
Napkin holders	6 pcs.	NS	Side towels	4 pcs	S
Sugar containers	5 pcs.	NS	Skirting cloths	2 pcs.	S
Creamer containers	5 pcs.	NS	**OTHER ACCESSORIES**		
Sauce/gravy boats	4 pcs	S	Waiter station	1 unit	NS
Soup tureen	4 pcs	S	Tray stand	2 pcs	NS

Table 12. Bread and Pastry Production Tools and Equipment

Tools			Tools		
Item	Suggested Qty. based on TESDA TR	Rating	Item	Suggested Qty. based on TESDA TR	Rating
Measuring cup, solid	12 pcs	NS	Muffin pan, small	6 pcs	NS
Measuring cup, liquid (250 & 500 ml)	12 pcs	NS	Muffin pan, medium	6 pcs	NS
Measuring spoon	25 pcs	S	Muffin pan, big	6 pcs	NS
Cake turn table	3 pcs	S	Loaf pan, small	6 pcs	NS
Decorating tips	20 pcs	S	Loaf pan, medium	6 pcs	NS
Rolling pins	6 pcs	S	Loaf pan, big	6 pcs	NS
Pie pan sizes 6, 8, 10	6 pcs	NS	Rectangular pan 1x8x8	4 pcs	S
Sheet pans	6 pcs	NS	Round pan 6,8, 10, 12, 14, 16	6 pcs	NS
Pie cutter	6 pcs	NS	Pie pan	6 pcs	S
Rubber scrapper	6 pcs	NS	Flour sifter	6 pcs	S
Pie cutter	6 pcs	NS	Strainer	6 pcs	S
Rubber scrapper	6 pcs	NS	Double boiler	6 pcs	NS
Palette knife	6 pcs	NS	Piping bags	6 pcs	S
Cake stand with tier	6 pcs	NS	Coupler	6 pcs	S
Cake pillars	6 pcs	NS	**Equipment**		
Sauce pan, s/s	6 pcs	NS	Refrigerator	1 unit	S
Ladles s/s	6 pcs	NS	Upright freezer	1 unit	S
Chopping board, color coded	6 pcs	NS	Gas Range	4 units	S
Scale 2, 10 kgs	6 pcs	NS	Dough cutter	1 unit	NS
Grater	6 pcs	S	Compressor	1 unit	NS
Mixing bowl (6 pcs per set)	12 sets	S	Mechanical Dough roller	1 unit	NS
Wire whisk	6 pcs	S	Commercial Mixers with complete attachments	6 units	NS

Table 14. Skirt Properly Buffet or Display Tables Taking Into Account Symmetry, Balance and Harmony in Size and Design

Item	Before		Description	After		Description
	f	%		f	%	
It is used to decorate tables for different occasions, for elegance and to cover the actual table.	18	40.00	DME	40	88.89	VS
It is a popular table skirting style due to its simplicity and affordability.	28	62.22	DME	45	100.00	O
It provides more volume than standard box pleats, its pleats are narrower than a regular box pleats, giving the bottom of the table skirting a fuller appearance.	25	55.56	DME	41	91.11	O
It is a playful addition to party tables.	25	55.56	DME	42	93.33	O
They are commonly attached with overlap clips that will not flatten or damage the table skirt pleating.	28	62.22	DME	41	91.11	O
MPS	**55.11**			**92.89**		
Description	**Did not Meet Expectations**			**Outstanding**		

Table 16. Prepare Variety Pastry Products According to Standard Mixing Procedures

Items	Before YouTube Utilization			After YouTube Utilization		
	f	%	Description	f	%	Description
1.It is the simplest of all mixing techniques, it involves mixing the ingredients together using a wooden spoon or wire whisk until all ingredients are being combined.	29	64.44	DME	45	100.00	O
2.It is done to incorporate air. The ingredients are moved vigorously in a back and forth, up and down motion.	22	48.89	DME	44	97.78	O
3.It is the mixing method which refers to the procedure of rubbing one or two ingredients against a bowl with the tip of a wooden spoon or electric mixer or soft fluffy mixture.	21	46.67	DME	43	95.56	O
4.It is a process of beating egg whites to incorporate air to make them thick and fluffy.	24	53.33	DME	44	97.78	O
5.It is a type of mixing technique which is done only in baking bread.	19	42.22	DME	44	97.78	O
MPS	**51.11%**			**97.78 %**		
Description	**Did not Meet Expectations**			**Outstanding**		