



Needs Analysis in Technical Vocational Education and Training (TVET) Programs for Sustainable Development of Women in Cambodian Hair and Beauty Industry

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Abstract: This study explores the status and needs of Cambodia Technical Vocational Education Training (TVET) for the hair and beauty Industry to develop Cambodia's very first online TVET diploma curriculum for hair and beauty localize from the curriculums of the Korean online (cyber or digital) universities specialized in beauty area. The study conducted a comprehensive situational analysis by qualitative approach through focus group interviewing Government, Industry, TVET institution and descriptive survey to potential 176 students: 116 hair shop owners and 60 staff. The findings confirmed that stakeholders from government, industry, and TVET institutions expressed high need to introduce an innovative online hybrid model of TVET diploma program for the development of Cambodia hair and beauty industry as well as potential students from the industry. In conclusion, the study's result suggests adopting a hybrid blended learning approach in TVET should be encouraged under the current Covid-19 pandemic. The study recommends further studies to evaluate its effectiveness and impact of this newly designed program with various perspective from the individual level, institutional level, and hair and beauty TVET sector in Cambodia.

Keywords: SDGs (SDG 4), TVET, ODA, hair and beauty education, needs analysis

1. Introduction

The United Nations (UN) introduced the Sustainable Development Goals (SDGs) to the global community in 2015. After the announcement of the SDGs', each level of the national, regional, and global community developed manageable goals and indicators to achieve the SDGs for global prosperity. The SDGs include 17 overall goals with 169 sub-indicators to reduce global poverty. In terms of development for the Education sector, SDG 4 covers early-child education to basic education, Technical Vocational Education Training (TVET), Higher Education and Life-long Education (ADB, 2019). Among the various education sectors, SDG 4 and SDG 8 are closely related to the TVET sector in terms of decent job creation and economic development.

UNESCO has argued for profound transformation in the conceptualization, governance, funding, and organization of TVET to ensure that the sector can respond effectively to the many economic, equity and sustainable transformational challenges of the 21st-century world. One of the Congress's core recommendations under the heading "1. Enhancing relevance of TVET," was "Promote the integration of information and communication technologies (ICTs) in TVET to reflect the transformations taking place in the workplace in society at large" (UNESCO, 2012, p.6). Under the UN SDGs frame, member countries should develop policies for transforming and expanding TVET to

address the great diversity of learning and training needs. It referred to the needs of low-skilled adults, the unemployed and vulnerable workers; disadvantaged and marginalized groups; rural, remote communities. Since Korea joined the OECD Development Assistance Committee (DAC), becoming a member state in 2009, Korea has expanded its role to support developing countries extensively (ADB,2017a). While there are about 60 countries that Korea is widely supporting for socio-economic development, Korea has set 13 strategic partner countries in 2010 to focus more effectively on result-driven outcomes in its Official Development Assistance (ODA) activities in the areas of education, public health, industry energy, agriculture, and public administration (ADB,2017b).

Korea has supported Cambodia with around US\$ 6.5 billion between 1991 and 2014. Cambodia is ranked 3rd among Official Development Assistance (ODA) strategic partner countries (Liang, 2016). The Korean government's country partnership strategy with Cambodia focuses on the Agriculture sector, Transportation and Green Growth Infrastructure, Human Resource Development and Public Health sector (CDRI, 2015). Currently, the Korean government considers three pillars - efficiency, sustainability, aid harmonization - in order to secure development effectiveness (CBHA, 2018).

Considering these global efforts like UN SDGs and TVET sector-specific needs to adopt a new transformative way of integrating ICT aspect into the TVET programs as well as the Korean government's strong support to Cambodia, this study conducted a needs assessment with the research questions below for the innovative ICT-based TVET diploma program to strengthen hair and beauty industry, one of the fastest-growing service industries in Cambodia.

- What is the perception of ICT-based hybrid online TVET program for hair and beauty in Cambodia?
- What is the status of the Cambodian hair and beauty curriculum and the needs of Cambodian female workers in the Hair and Beauty Industry?
- What are the needs of current hair shop owners and staff for a 2-year college level ICT-based TVET program for hair and beauty?

1.1 Technical Vocational Education Training (TVET) in Cambodia

Vocational education and training go by various names, such as career and technical education, technical education, vocational education/training, skill development, and technical and vocational education and training. Across advanced and developing economies, vocational education and/or training programs are offered at various types of institutions, including schools, colleges, public and private vocational institutions, on the job, and at informal settings like the home or community (Grubb & Sweet, 2004; Karmel, 2011; Chappell 2003). Moreover, they are offered at various levels within the education system. The United Nations Institute of Statistics (UN-UIS; 2006) has identified students at four different levels of the International Standard Classification of Education – from level 2, which corresponds to lower secondary education, up to level 5, which corresponds to the first cycle of higher education.

In its “Revised Recommendations for Technical and Vocational Education and Training”, UNESCO (2001) provides a definition for vocational education and training that reflects the shifts over time in thinking about what constitutes vocational activities. The shift has been from a view of vocational education quite narrowly in terms of preparing individuals for a particular job or occupation to a vision of it as a strategy for addressing various educational, economic, and social objectives. TVET is defined as “*a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life*” (UNESCO, 2001). As such, TVET includes all activities undertaken at various stages, from secondary to postsecondary and on-the-job training.

Cambodia's economy has grown an average of 7.6% over the last 20 years between 1994 and 2015. It ranked 6th in terms of economic growth, and this has resulted in Cambodia's status changing from Least Developed Country (LDC) to Lower-Middle Income Country (LMIC). Overall, the current Cambodian economy heavily depends on its growing exports based on the garment industry and the service industry, especially tourism-oriented services. (EDCF, 2018). According to Cambodia's National Strategic Development Plan of 2014-2018, the focus is on promoting the agriculture sector, development of physical infrastructure, capacity building and human resources development, and private sector development and employment (EDCF, 2018).

As of 2014, Cambodia's TVET sector has increased up to 93,220 students over the last 10 years. However, 93% of the enrolled students have registered in short-course programs which only last 4 to 6 months and most of the students took courses in the agriculture area, which is not related to the service and manufacturing industry where the government is currently emphasizing the TVET sector (Government of Korea, 2016; Joint Association of Related Ministries of Korea, 2019).

1.2 Cambodia Women and Hair and Beauty Industry

Royal Government of Cambodia believes that participation of female workers in the workforce in the capacity of wage salary-workers is a positive signal towards gender equality in the workforce. Data on this issue, reported in the Cambodian Socio- Economic Surveys of 2009, 2010, and 2011, suggest that this ratio has stood between 42-45%, lower than the 50% mark in recent years (Huh & Kim, 2016).

The labour participation ratio of Cambodian women is relatively high in the South-East Asia region, but a majority of the enterprises are in retail sales, managed by 1-2 self-employed women, and the scope of wage employment is quite low (KIEP, 2017). According to the Industry Development Plan (IDP) 2015-2025, 98.7% is Small and Micro Enterprise and most enterprises are not registered. IDP 2015-2025 described capacity development of Medium, Small and Micro Enterprise (MSME) as part of the country's industrialization strategy.

Most Cambodian women in Phnom Penh (capital city of Cambodia) worked in garment factories, the entertainment industry as well as the Hair and Beauty Industry. Based on the report of the Cambodia Beauty Hair Association (CBHA), there are about 4,000 hair shops in Phnom Penh and 98% of the shops are run by the family business model. This originated from the lack of specialized curriculum and educational facilities for hair and beauty since there is no national-level hair and beauty industry focused certificate system (KOICA, 2018). With this background, the study is looking into developing Cambodia's very first ICT-based TVET academic curriculum to support Cambodian Women in the hair and beauty Industry (MLVT, 2018; MWA, 2014).

1.3 Korean Cyber Universities' Curriculum in Hair and Beauty

According to the Cyber University General Information Service, as of August 2016, departments related to the beauty industry are established in 8 different universities described below.

Table 1 - Current beauty industry-related departments at cyber colleges and universities

Area	Departments	Universities
Culture, Arts	Total Beauty Arts	Digital Seoul Culture and Arts University
	Beauty Health Design	Open University Cyber Korea
	Global Beauty	Konyang University
	Skin and Beauty	World Cyber University
	Beauty and Art	Soongsil Cyber University
	Beauty Care	Youngjin Cyber University
Health Care	Oriental Beauty and Art	Wonkwang Digital University

Based on a baseline study on the awareness and satisfaction with the education provided by Cyber Universities men and women aged between 20s and 40s were found to recognize the educational content and course goals to be exam preparation oriented for certificates (40.3%), basic theory and practical education (30.3%), and practical education needed at industrial sites after graduation (16.8%). The results of this study showed that the hair and beauty related online contents of Korean Cyber University can be used for developing a pilot TVET diploma program for Cambodian women in the Hair and Beauty industry by adopting a transformative approach of hybrid blended format.

3. Research Methodology

3.1 Conceptual Framework and Approaches

With regards to the pilot model of ICT-based TVET program for Cambodia Women in Hair and Beauty Industry, the research team visited Cambodia to meet relevant stakeholders from the government, international and local Non-Governmental Organisations (NGOs) as well as hair shops and hair academies in Phnom Penh, Cambodia in order to conduct Focus Group Interviews (FGIs) and revise the piloted program to be more relevant and meet the needs from the Cambodians' perspective. After conducting FGIs with Cambodian hair and beauty TVET stakeholders, we have revised the academic curriculum and courses to prepare the survey on Cambodian Women in the Hair and Beauty Industry focusing on Hair shop owners and technical staff.

Table 2 - Research procedure with research methods and activities

Step	Method	Research Activities
[Step1] Status Analysis	Systematic Literature Review in Korean Cyber University Curriculum and Cambodia TVET sector	<ul style="list-style-type: none"> Reviewing of University Education and TVET program for hair and beauty in Korea focusing on Online University (Called Cyber University in Korea) and 2-year colleges. Analysing TVET program for hair and beauty in Cambodia as well as TVET system and any relevant training programs run by international organizations or NGOs.
[Step. 2] Focus group interview	Constructing Stakeholder Panel for the TVET Policy and programs.	<ul style="list-style-type: none"> Selecting a panel from Government agencies, International NGOs and Local NGOs, Hair and Beauty training academy, national TVET institution
[Step. 2] Focus group interview	Conducting in-depth interviews with the stakeholders	<ul style="list-style-type: none"> Developing a semi-structured and open-ended questionnaire for the in-depth interviews in Cambodia.

	<ul style="list-style-type: none"> • Conducting in-depth interviews at each institutes at Ministry of Labour and Vocational Training, Ministry of Women’s Affairs, UN Agencies (UNESCO, UNFPA) in Cambodia, French NGOs and Korean NGOs, Local Hair Salon (Soheat Hair Salon) and Hair Academy (Christina Hair Academy)
Based on the Stakeholder’s FGI and In-depth interviews, Designing a pilot program model	<ul style="list-style-type: none"> • Pilot ICT-based blended learning TVET program of hair and beauty for Cambodia Women in Hair and Beauty Industry.
[Step. 3] Survey research Conducting a survey on hair shop owners and staff in Cambodia	<ul style="list-style-type: none"> • Conducting a prepared guided questionnaire for participant’s demographic information and current status of their training experience of hair and beauty program and other related needs to design a TVET program.

3.2 Participants for the Focus Group Interview (FGI)

First, the field research team (International Development Expert & Hair and Beauty Contents Expert) from Korea has created five categories to conduct focus group interview: Government, International Organizations, International Non-Government Organizations, Public TVET institution and Local Hair and Beauty training academy, to understand the current status of hair and beauty training programs in Cambodia and needs from the stakeholders with the prepared questionnaire and analysis report of online contents for hair and beauty training from the Korean Cyber Universities' curriculum.

Table 3 - FGI interviewee profiles

Type of Organization	Org. Name	Expert Job Title	Area of Expertise
Government	Ministry of Labour and Vocational Training (MLVT)	• Gender Specialist	Gender
		• Natl. Master Teacher Trainer	Curriculum and Pedagogy
		• Deputy Director General of DGTVET	Technical & Vocational Training TVET system of Cambodia
		• Director of General of TVET training	
	Ministry of Women’s Affairs	• Director of Economic Development	Women Economic Development
International NGOs	Plan International	• Education and Training Program Manager	TVET Curriculum
	PSE (Pour Un Sourire D’Enfant)	• Hair Beauty Training Manager	Curriculum and Teaching
International Organization	UNFPA	• Education program manager	Gender Area
	UNESCO	• Education Section Chief	ICT-based online
Local Hair Academy	Soheat Hair	• Owner	Education Business Operation
	Christina Hair	• Owner	
Public TVET Institution	National Institute Entrepreneurship and Innovation (NIEI)	• Director	TVET Institution Operation
		• Deputy Director	
		• Dean Academic Affairs	Curriculum and Program
		• Dean, ICT Education	ICT program

3.3 Research Instruments for FGI and Survey

The main goal of FGI, in-depth interview with the five different groups was to map out the status of the TVET system for the hair and beauty industry in Cambodia as well as the current situation of local hair shops in Cambodia. The table presents the questions that the team asked the FGI groups.

Table 4 - FGI questionnaire

Category	Questions
Field workers in beauty schools, institutions, NGOs	✓ Personal experiences of beauty training
	✓ Career or work experiences as a beauty professional
	✓ Types of educations or training received for a personal development (Cambodia/Abroad)
	✓ Current investment for retraining
	✓ Certification possession status
	✓ Skills required for a successful and continuous operation of hair and beauty salon
Beauty institutions and NGO	✓ Level of interest in K-Beauty
	✓ Goals, objectives, purpose of beauty training
	✓ Characteristics and methods of the currently provided training curriculum
	✓ Ratio of theory and practice classes
	✓ Levels (beginner to advanced) of the provided curriculum
	✓ Difficulties running a beauty school in Cambodia
Policy levels	✓ Scholarships provision status
	✓ Education (training) level, wage level in the beauty industry
	✓ Prospects of improving Cambodian women's socioeconomic status through innovation beauty industry and empower current beauty industry workers
	✓ Lists of Cambodian women's main occupations
Industrial-Technology University	✓ Lists of main occupations preferred by Cambodian women in 10s or 20s
	✓ Overall goals, objectives, purpose of training course of the university and training program
	✓ Characteristics of the current institutions training course (education contents, methods of theory and practice classes)
	✓ Ratio of theory and practice classes
	✓ Number of established courses, requirements for graduation or course completion
	✓ Steps (levels) training program provided compared to the international standard
✓ Specialization of the training program offered by the institution	

After the Focus Group Interviews, the team visited local hair and beauty professionals' workshop venues to survey to understand the status of education and training and work environment of Cambodia Women in the hair and beauty industry. The total number of participants was 176 (116 Hair shop owner and 60 staff). The questionnaire was developed by the Korean research team and the technical advisory team consisted of local TVET institute teachers and international organizations in Cambodia. The questionnaire was composed of six parts, supported by sub-questions prepared with technical input from the above team. The pre-test was conducted on a small scale by 10 interviewers, then revised by the leading team of the local technical advisory team.

Table 5 - Survey questionnaire

Category	Questions
General Demographic Information	✓ Age
	✓ Final Education
	✓ Job Status
	✓ Work experience
Beauty Shop Operation Status	✓ Monthly Income
	✓ Location
	✓ Specific Location within the district
	✓ Number of staff at the shop
	✓ Number of daily average customer
	✓ Main service and beauty treatment
Technical Education	✓ Operational challenges
	✓ Needs to improve profits
	✓ Personal will to attend the training session
Digital Literacy related competency	✓ Personal will to invest in retraining (Tuition and Duration)
	✓ Preferred days for the class
	✓ Types of smart phone
Interest in Korea Beauty	✓ Internet usage
	✓ Types of Email
Intention to enrol in the program	✓ Usefulness of K-Beauty
	✓ Preference in online training
Intention to enrol in the program	✓ Willing to enroll in the program
	✓ Willing to share the knowledge after the program

Due to the time constraints on this survey, the data has not been gathered nationwide. It was conducted within the vicinity of Phnom Penh only. The data collection between the two different types of respondents are also not of equal quantity. Thus, it is not expected that the analysis of data is fully consistent with the reality of the daily business of Cambodian women in the hair and beauty industry. Therefore, this survey data cannot be used to generalize the whole beauty and salon types in the country, but generic information with limited access to information.

4. Research Findings

4.1 Findings from FGI from Government, Industry, TVET Institutes and NGOs

As a result of the analysis of the in-depth interview with the stakeholder groups, the team organized each sector's perspective on the TVET program for hair and beauty at the government policy level, international organization's recommendation, international and local NGO's current activities, perspectives of local hair shops and local hair academies, and public TVET institutions to assess the current status and needs in designing a program.

4.1.1 Government Policy Level's Recommendation on National Qualification Framework (NQF)

The research team found that the Cambodian MLVT asserts that the TVET system must be strengthened for the socio-economic development of the nation. The ministry has focused in the areas of hardware such as car mechanics, plumbing, electricity, and electronics rather than the service industry such as hotel management, tourism, food and beverage, and hair and beauty.

"The Ministry has work closely with its development partners such as Asia Development Bank (ADB) to strengthen TVET system and academic programs for training and producing skilled labour over the last 20 years. However, the Ministry could not focus in the areas of soft skills such as fostering a customer service mind, manners and etiquette in the service industry."

It is worth noting the size of the service industry in the Cambodian economy. Agriculture is still the largest industry of the country, but the service industry has grown dramatically over the last 10-15 years. Currently the service industry ranks as the 4th largest industry of the nation.

"... we, the MLVT has developed the National Qualification Framework in order to meet international standards after the ASEAN Economic Community was introduced in 2015. However, only 4 job categories have been identified and described in the perspective of the national competency standard (NCS). It would be a great help if Korea could share the current NQF and NCS standard for hair and beauty professionals and the TVET program"

In conclusion, the government officials would like to work with Korea to design a national level Qualification system and an NCS-based TVET curriculum for the hair and beauty professions. Furthermore, the Ministry of Women's Affairs shared that the TVET program should include gender-mainstreaming perspectives in all education programs including the TVET program.

4.1.2 International Organization's Perspective on Gender to Develop a TVET Program

UNFPA has supported capacity development for Cambodian Women ever since the establishment of the Cambodia office in 1993. UNFPA shared that the hair and beauty TVET program should be developed to improve and better the quality of life for Cambodian women and promote their socio-economic participation as members of society.

"Ever since we opened the Cambodia office, we have work very closely with the Ministry of Women's Affairs and MLVT under the name of the Cambodia Women Capacity Development Project. In the beginning, the office focused on population census and other demographic statistical reviews of the country but the UNFPA has gradually expanded its function to include the elderly and women in Cambodia for the sustainable development of the country."

UNESCO-Cambodia mainly works with the Ministry of Education, Youth and Sports (MoEYS) with a focus on the early childhood education and primary education in Cambodia. UNESCO-Cambodia had plans to introduce Basic Education Equivalent Programs based on mobile phones in 2019. However, recently the UNESCO Headquarters (HQ) and the UNESCO Vocational Education Center released a publication on the best cases of adopting ICTs into TVET programs both in developing and developed countries around the globe.

"We mainly work with the MoEYS to improve current educational issues that the Cambodian youth are facing, such as out-of-school children's informal education and improving primary and secondary

educational issues related to the teacher training programs. While we are focusing more in the area of general education, recently we have published a publication titled 'ICTs in TVET program' to share best practices."

The team has confirmed that the ICT-based TVET program can be beneficial to address the accessibility issues of the TVET sector in Cambodia for the sustainable development of Cambodia. UNESCO-Cambodia was going to introduced Basic Education Equivalent Programs based on mobile phones in 2019.

4.1.3 International and Local NGOs Recommendation based on their Current Activities

PSE a French NGO provides a that have hair and beauty programs at the certificate level. PSE hair and beauty programs have been held for over 10 years and the program produces around 20-25 students per 2-years. They have stated that Cambodia needs to have an advanced degree training program for hair and beauty.

"We started this program with a French instructor and a French hair designer. Now, French volunteer hair designers and instructors come to Cambodia regularly to teach Cambodian students. Personally, we would like to develop an upper-level program such as a 2-year college degree program but we will focus on the high school level program for now. It would be very helpful if the Korean government can design and develop an advanced level program for hair and beauty."

The team also found out that most graduates from PSE hair school are hired by local hair shops and spas offering decent monthly salaries. However, currently, there is not an in-service training program for those who are currently working in the hair and beauty industry. After the FGI with the PSE, the team confirmed that the advanced level program should also focus on re-training participants as current hair designers of the local hair shops. The results of the in-depth focus-group interview show that currently, there is not a public level TVET program for the hair and beauty industry, and the government ministries have stated (MLVT and MoW) that Korea could introduce a decent TVET program for hair and beauty with its advanced academic program as well as a license system for Cambodian hair and beauty professional.

There are a few NGO-run TVET programs and local hair shops' original programs for the hair and beauty industry, such as the program which was operated by a French NGO with the French hair professional teachers. However, the curriculum is not designed and developed to meet international standards. The current training model follows an apprenticeship without an instructional academic program and degree.

Table 6 - FGI result summary

Type	Org. Name	FGI Result Transcription
Government	Ministry of Labor and Vocational Training (MLVT)	✓ Cambodia needs to develop a national level license system for the hair profession with the decent TVET program
		✓ MLVT plans to develop a eco-system among the TVET institution, MLVT and hair and beauty association of Cambodia
		✓ There isn't any public level TVET program for the hair and beauty yet.
		✓ "Most hair shop is running as a micro and small business for the family income generation purpose.
		✓ Large scale hair shop is running by foreigners from Europe and Japan.
Government	Ministry of Women's Affairs	✓ Japan has supported short-term training program of hair and beauty for Cambodia women by building 13 Women Development Centers in major provinces.
International NGOs	Plan International	✓ Plan International only runs a short-term training program for hair and beauty without awarding a diploma
	PSE (Pour Un Sourire D'Enfant)	✓ PSE is French NGO where they run a high school level TVET program for Cambodians with awarding a certificate.
International Organization	UNFPA	✓ UNFPA recommended that the curriculum should include soft-skill training components such as customer services, marketing and business operation management for the hair professionals.

	UNESCO	✓	UNESCO shared that online blended learning model for the TVET program. UNESCO published best cases where the country adopted ICTs for TVET programs.
Local Hair Academy	Socheat Hair	✓	Socheat Hair shop runs a 1-year training program for Cambodian focusing on hair, skin, make-up and nail art. The academy trains the students and the shop hires them as a staff. It does not offer any certificate or diploma
	Christina Hair	✓	Christina Hair shop runs less than 1-year training program for Cambodians. The shop recommends that Cambodian Hair professionals need to have a in-service training program for the hair designers
Public TVET Institution	National Institute	✓	NIEI used to run a 4-month basic level TVET program for hair and beauty.
	Entrepreneurship and Innovation	✓	NIEI is the TVET institution where the MLVT focusing on entrepreneurship and business skills.

4.2 Needs Analysis of Target Learners for TVET Programs in Hair & Beauty

The survey was conducted to find the level of interest among shop owners and staff working in the beauty industry in improving their skills in hair and make-up of the Korean style. The key findings from the survey helped the team to design the course to suit their preferences. As the course will not only contribute to the advancement of skills but also empower the economic independence of vulnerable women in Cambodia which is critical that various respondents are included in the survey. The data collected from the survey were analysed using SPSS (Statistical Package for the Social Science) Win 19.0 version. percentage, mean, standard deviation, frequency analysis, and Chi-square test were conducted to understand the overall trend of each variable.

4.2.1 Course Schedule

The weekend were the busiest days for the respondents (84). Friday was the second busiest day (33), followed by Thursday (13 persons). The respondents proposed to have classes on weekdays (60 persons) and 26 persons mentioned that some days may not work for those who mentioned Friday and Thursday as their busy days. Meanwhile, 4 persons mentioned night-time as their preferred time. Similarly, the busiest time for staff was the weekend. There was only one difference between Sunday and Saturday, with 46 staff respondents mentioning Sunday and 45 persons stating Saturday as their busiest days. Friday and public holidays were also mentioned as busy. 12 staff expressed that Friday was busy, and public holidays were mentioned by 11 staff. Most of both groups were busy over the weekend and holidays, which include 51% of shop owners, and 45% of shop makers. In addition, in both groups, most people preferred "morning" to "afternoon" sessions.

4.2.2 Course Fee

Seventy-one respondents mentioned 100-300 USD and requested the course to be conducted as a short course (53 persons). Seventeen persons mentioned that morning was their preferred time (66). It is worth noting that 20 respondents did not give an answer to the cost of training and 14 people could not decide by the time of interviews. Around 80% of staff respondents proposed that the fee should be less than 300 USD. Among 60 respondents, 40 mentioned between 100 USD and 300 USD, whereas 5 respondents mentioned between 300 USD and 500 USD, and 8 respondents did not have an answer. Thirty-seven respondents said that the course should be held for less than one year while 10 staff did not answer, and 6 respondents mentioned the course should be conducted over a long time. The majority of respondents from both groups preferred the course fee to be less than 300 USD, which includes 61% of shop owners, and 65% of shop makers. Most of these groups preferred the class take place for less than or within one year (a smaller number preferred over one year).

4.2.3 Challenges while Running the Store

Forty-nine respondents mentioned customer service as the most challenging for them and competition with other salons was mentioned 38 times. Thirty-five respondents mentioned a lack of the latest technical information and 33 respondents discussed employee management. Customer service was listed as the most challenging skill for 27 staff, employee management as second by 14 staff and competition with other establishments listed as the third most challenging skill by 13 staff respondents. When asked about what to improve, 24 staff mentioned that hair and beauty skills are the most wanted. The next answer was customer service, which was raised by 21 staff.

When asked about challenges while running the store, the majority of shop owners (42%) responded "customer service", with 32% choosing "salon competition with other shops", and another 28% mentioning "improving technical

information", and "employee/staff management". Similarly, the majority of shops (45%) also mentioned "customer service", 23% noted "employee/staff management", and 21% responded with "customer service".

4.2.4 Skills to be Improved

Forty-five mentioned hair and beauty skills as the most needed to be followed by customer service skills (44). Lack of the latest technical information was mentioned 26 times whereas competition with other establishments was claimed by 24 respondents. In terms of skills to be improved, both target groups have different opinions. The majority of shop owners (38%) prefer to update "hair salon skill", whereas around 36% want to learn "customer service", while another 22% mentioned "technical information".

5. Discussion and Conclusion

The purpose of this study was to analyse the working conditions of Cambodian hair & beauty workers, to assess the status of TVET programs, to identify the demand for ICT-based TVET programs, and to seek ways to activate education based on the results. Based on the main results of this study, the study discussed several ways to activate the ICT-based hair & beauty TVET diploma program.

First, as a result of analysing the working status of Cambodian hair & beauty workers, they were unable to participate in the TVET due to lack of programs, lack of time, and lack of information. To expand the opportunities for adult learners to access a variety of TVET programs, learners asked for information on the TVET program, where it is held, and how to participate in it. In particular, in the case of ICT-based programs, it is necessary to collect information on all related programs and build a loaded system. Since many hair & beauty workers have shops located in local markets, institutional support should be provided to deploy accessible ICT/TVET professionals within the markets. Based on the results of this study, beauty practitioners should strive to strengthen their individual competency to build efficient and customer-oriented beauty businesses by using beauty technology and promoting a business management mindset. Developing key educational content addressed in the study as an online education program and paralleling it with offline education will complement the shortcomings of collective education, which can be burdensome in terms of time and cost.

Second, quality education should be selected in consideration of both the owners' and shop makers' learning needs. Different desires and needs for educational programs by career require more research and development of various education programs (Esa et al., 2017). Therefore, in order to adapt and diversify the TVET program in the future, it is necessary to grasp the needs for career stages, retainers, and training programs, and to research and develop programs of various types and contents. In particular, specialized and differentiated educational contents and teaching methods by job type, age, and program area should be designed. Furthermore, there must be active support at the national and local levels.

Third, in order to improve the work performance of beauty workers, training has been set as the primary content, on-the-job training and off-the-job training for new and experienced employees. It is necessary to systematically design and implement various educational programs for each method.

Third, the study also addressed understanding the current status of Cambodian female workers' digital literacy to understand whether the online content can be useful and feasible for their learning of the skills and knowledge in the hair and beauty area. While most of the participants (78% of shop owners and 61% of staff) had high-speed internet access via their mobile phone and an unlimited data plan in their daily lives, they mainly used social media platforms such as Facebook and Facebook Messenger to obtain information rather than through email or Massive Online Open Courses (MOOCs). The result suggests that an online-based TVET curriculum designer has to develop short-time online contents within 3-5 minutes for prospective students to serve as micro-learning content, which should be reviewed after the regular online content lasting 70 - 90 minutes. Furthermore, as suggested by Mazin, Norman, Nordin, and Ibrahim (2020), student self-recording can be used to assess TVET student competencies and collaborate with other students in MOOCs environment.

This research has been limited to the context of Cambodia and its beauty industry among the developing countries, so it cannot be generalized for other occupations or other countries. Therefore, in the future, it will be meaningful to identify differences in job demands and training demands by type. Further design and research will be necessary to enable comparative analysis according to the types of online and offline education programs.

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