Human Capital Requirements of the Electrical Businesses

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Abstract. Philippine Education in its response to Asian regionalism and globalization fully implemented the K-12 program in 2016 introducing 2 years of senior high school after the existing 4 years of junior high school. The Department of Education (DepEd) of the Philippines emphasizes that the Senior High School (SHS) Program offers a lot of benefits to Philippine education. One of which is that graduates of the Senior High School Program especially the Technical Vocational and Livelihood (TVL) track will be readily employable. This research study aimed to survey the human resource needs of the Electrical Industries in Region 1 and was compared to the curriculum guide used by the electrical courses of the Senior High School of the Department of Education. This is to examine if the electrical courses being offered by the Department of Education do match the human resource needs of the Electrical Industries in the Region. The problems brought about by the mismatch between skills and job hinders development. Students may end up jobless when they graduate because the skills they learned may not be the same skills needed by the industries. Industries may experience a shortage of skilled workers to perform different tasks in the workplace. Failure to determine this problem will affect not only the economy of the region but also the whole nation in general. The study is simple as it may be seen, could benefit the students and the electrical industries in Region 1 in particular. This study will provide relevant information intended to help school administrators to design a curriculum that will meet the needs of the industries. This will help students decide on what course to take to ensure future employment. The industries will have the opportunity to open up their human resources needs to make sure that their needed skills will be catered to by the schools. Most of the electrical companies in Region 1 are engaged in general construction and general engineering services. The human resource needs of the companies are skilled employees who possess the competence to the job demanded in the companies. Indeed, there are job vacancies in the electrical companies in Region 1. However, the companies are hesitant to hire newly graduated SHS applicants because of the impression that said applicants do not possess the competencies required by the jobs in the companies. Closed Circuit Television (CCTV) installation for example ranked second in the list of competencies needed by the companies is not included in the curriculum of the electrical course in the SHS. Few companies would accept newly graduates of the SHS however, they will not be treated the same as the regular employees. They will be treated as an apprentice and will receive a lower salary. They will not be assigned to do delicate works. There are several competencies needed by the companies that are not offered in the electrical courses of the SHS based on the curriculum guide of DepEd. This study serves as a guide in formulating a curriculum that will cater to the human resource needs of the electrical industries in Region 1. It is expected that this research study will bring closer coordination between the Schools and the Industries to avoid skill-job mismatch.

Keywords: competence, skill-job mismatch, curriculum, SHS, DepEd

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INTRODUCTION

In the Philippines, electrical skill is one of the highest demands in the construction industry. People may not be aware that electricity greatly affects their daily life. From the time they wake up in the morning to the time they sleep at night and even during their sleeping time, electricity is there making their life comfortable. Most of the things around them are operated with the use of electricity. The gadgets like cellphone, laptops, wi-fi, computers, the lighting at home, in the streets and offices, etc. are all operated by electricity. Even the vehicles on every road and streets were all made possible with electricity in the factories where they were made. The demand for electrical practitioners is high in the country. The problem however is the supply of human resources for the said demand. Trade Undersecretary Ruth Castelo, 2017 said "There are many jobs available in the country. The real problem is the training and educations of the youths do not match the needs of employers [1]. The success of the labor sector relies greatly on the correct training for the demand of the industry." She added that With the Duterte administration's promise for the Golden Age of Infrastructure through its Build program, the construction industry will need an additional 2.5 million skilled construction workers. This includes the need for more electricians.

Determining the needs of the industries would be a significant aspect in identifying what skills are significant to develop in the training Schools [2]. This will give a greater chance for students to be employed according to their specialization when they graduate and guarantee the supply of human resources needed in the industry to promote development in the country [3]. Region 1 is venturing into an era of industrialization to promote development outside Metro Manila. Among other industries, Electrical Industry is the most in-demand both in supplies and services in the industrial arena in the Region. This is because almost all the other industries require electrical supplies and services in their operation.

The study was focused on the human resource needs of the electrical industries in region 1. This was compared to the skills being developed in the electrical courses in the SHS of the Department of Education. The Republic Act 10533 known as the Enhanced Basic Education Act, extending basic education from 10 years to 12 years aimed to prepare Filipino youth to be globally competitive. The additional two years in Senior High School will enhance the students in their chosen careers. Graduates of the Senior High School may proceed to college, establish their own business, or may seek employment depending on the Track they choose. But will this law be able to address the present and future needs of the electrical industries? The graduates of K-12 however do not have the guarantee to be employed immediately if they do not possess the necessary skills needed by the industries. With these circumstances that the need for an electrician is great and the supply of human resources for the job is limited, it is expected that there will be a problem in the industry that will hinder the advancement of technology and development in the country. This inspired the researcher to conduct this study to address the problems brought about by the mismatch by giving updates on the human resource needs of the electrical industries in Region 1.

STATEMENT OF THE PROBLEM

This study examined the human resource needs of the Electrical industries in Region 1 would tie up with the skills specified in the curriculum guide set for the electrical course in the Senior High School of DepEd. Specifically, it sought to answer the following questions.

1. What is the profile of the respondents in terms of:
    a. What is the Electrical Companies' line of services
    b. Job Vacancy in their company.
2. Are the Electrical Industries receptive to the new graduates of the Senior High School applicants?
3. What competencies do electrical industries in Region 1 need?
4. What degree of seriousness are the problems being encountered by the electrical industries in Region in terms of manpower and skill-job mismatch?
5. What are the competencies needed by the electrical industries in Region 1 that are not included in the curriculum guide for Electrical Course in the Senior High School of the Department of Education?
6. What curriculum guide for the electrical course can be proposed to address the problem of skill-job mismatch in the electrical industries in Region 1?

METHODOLOGY

The research is in the form of a descriptive survey [4] [7] [8]. A descriptive survey attempts to establish the range and distribution of some social characteristics, such as education or training, occupation, and location, and to discover how these characteristics may be related to certain behavior patterns or attitudes. It is a method of collecting information by interviewing or administering a questionnaire to the respondents [5].

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Respondent of the study

The population for this research is the Managers of the electrical industries of Region 1 who are engaged in construction and maintenance services and duly registered in PCAB. The said respondents are selected because they are most knowledgeable about the human resource needs of their companies. There are 316 electrical industries in the region based on the PCAB List of Licensed Contractors for CFY 2018-2019 as of 08 October 2019.

However, due to the problems encountered by the researcher, only 50% or a total of 158 electrical companies were involved in the study. The problems encountered by the
the researcher is as follows;

1. The company could not be located at the given address.
2. The establishments are just satellite offices and the owners/managers are in the main offices usually in Metro Manila and Visaya.
3. Time element and financial constraint of the researcher.

The result is as follow; 21 in Ilocos Norte, 20 in Ilocos Sur, 12 in La Union and 103 in Pangasinan. The 50% of the electrical companies in every cluster province were selected using the "WHEEL DECIDE" a software application that randomly select items in a group entered in a list of items in the application.

Research Instruments

The researcher used a questionnaire [6] as the primary source of data to determine the human resource needs of the electrical industries in Region 1 and the curriculum guide for the electrical course of the Senior High School as the secondary source of data to determine the competencies being developed in the SHS.

The questionnaire has two major parts, 1. The profile of the respondents in terms of the kind of services they are engaged in and the job vacancies in their companies and 2. The human resources of the companies which include the following; the acceptance of newly graduate SHS applicant, the competency needs of the companies and the degree of problems encountered by the companies.

Data Gathering Procedures

The method of data collection for this research was from primary and secondary sources of data. Primary sources are the original evidence of certain events, objects, persons, or work. They enable researchers to get as close as possible to the actual event. The information in primary sources has not yet been analyzed, summarized, or interpreted, which allows you to do so yourself. Here, the researcher used the questionnaire and direct interview to gather information from the respondents.

Secondary data implies second-hand information which is already collected and recorded by any person other than the user for a purpose, not relating to the current research problem. It is the readily available form of data collected from various sources like censuses, government publications, and internal records of the organization, reports, books, journal articles, and websites, and so on.

Here, the researcher used the curriculum guide for Electrical Installation and Maintenance and Electric Power Distribution Line Construction as a basis in identifying the skills being developed in the DepEd Senior High Electrical courses in TVL.

Statistical Treatment

To derive valid and reliable results and interpretation of data, the following statistical methods were employed.

Frequency counts and percentages were used to describe the profile of the respondents in terms of specialization the companies are engaged in and the Job Vacancy in the company.

The second problem "Do the Electrical Industries receptive to the new graduates of the Senior High School applicants?" was analyzed using a frequency percentage.

The competencies need of the electrical industries in Region 1 were analyzed using a frequency percentage.

The problems being encountered by the electrical industries in Region in terms of manpower and skill-job mismatch?" was analyzed using Mode and Mean and frequency percentage.

The actual observation was used to analyze the competencies needed by the electrical industries in Region 1 that are not included in the curriculum guide for Electrical Course in the SHS.

RESULTS AND DISCUSSIONS

This study presents the data gathered and gives in-depth analysis and interpretation of the data. The results are presented following the stated problems.

Profile of the companies

There are one hundred fifty-six respondents who participated in this study. Some companies are engaged in more than one line of services. The result of the survey was tallied according to the number of responses in every variable in the questionnaire.

Company Services Engage In

There are one hundred forty-eight (148) companies who are engaged in general construction

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representing 94.87%, one hundred thirty (130) or 83.33% are engaged in general engineering services and thirty-five (35) or 22.44% are engaged in maintenance services.

Job Vacancy in the Companies

The respondents may have multiple answers in this section. Thus the results were tabulated according to the frequency of responses from the respondents. There are one hundred seventeen (117) or 75% of companies have a vacant position for industrial electricians, eighty-seven (87) or 55.77% have a vacant position for license electrical engineer, eighty-four (84) or 53.85% have a vacant position for a master electrician, twenty (20) or 12.82% have a vacant position for helper electrician, eighteen (18) or 11.54% have no vacant position in their company and five (5) or 3.21 need automation electrician.

Acceptance of Newly Graduate SHS Applicants

As to the acceptance of newly graduate SHS applicants, one hundred twenty-four (124) or 79.50% of the respondents would not accept newly graduate SHS applicants and only thirty-two (32) or 20.50% would accept newly graduate SHS applicants.

Reasons Why Companies Do Not Hire Newly Graduate SHS Applicants

The one hundred twenty-four (124) respondents who answered "no" can give more than one reason why they do not hire newly graduated SHS applicants. The responses were tabulated according to the frequency.

There are one hundred sixteen (116) or 93.55% of the respondents said that newly graduates Do not have the competence for the job, one hundred four (104) or 83.87% said the lack of work experience as their reason, one hundred one (101) or 81.45% preferred college graduates rather than newly graduate SHS applicant, eleven (11) or 8.87% have no job vacancy in their company.

Reasons Why Companies Hire Newly Graduate SHS Applicants

The thirty-two (32) respondents who answered "yes" can give more than one reason why they do not hire newly graduated SHS applicants. The responses were tabulated according to the frequency.

Twenty (20) or 62% of the respondent who answered yes said that the new graduate SHS applicant will be hired as an assistant electrician, sixteen or 50% said that they will be an apprentice in status, fifteen (15) or 46.88 said that the new graduate SHS applicant will receive a lower salary as compared to the regular employee, three (3) or 9.40% said that they will not be assigned to delicate works and one (1) or 3.13 said that will hire newly graduate SHS applicant to give them a chance to be employed.

Competency Needs of the Companies

Here, the respondents were allowed to have multiple answers. The data were recorded according to the frequency of responses in every variable.

One hundred forty-seven (147) or 94.23% of the respondents need employees who are competent in building wiring installation, one hundred forty-four (144) or 92.31% need a competent in CCTV installation, one hundred (139) or 89.10% need competent in telephone installation, sixty-one (61) or 39.10% need competence in solar device installation, fifty-one (51) or 32.69% need competence in generator operator/maintenance, twenty (20) or 14.10% need competent in being a ground man assistant electrician, six (6) or 3.84% need competent in motor control installation/operation, five (5) or 3.21 need competent in sensor automation installation and one (1) or .64 needs a competent in motor rewinding.

Special Skill Requirement of the Companies

Here, the respondents were allowed to have multiple answers. The data were recorded according to the frequency of responses in every variable.

There are one hundred fifty-four (154) or 98.71% of the respondents require communication skill to their employees, one hundred fifty-three (155) or 98.08% require time management skill, one hundred forty (140) or 89.74 require active listening skill, one hundred thirty-six (136) or 87.18% require Equipment maintenance skill, one hundred twelve (112) or 71.80% require repairing skill, one hundred nine (109) or 69.87% require troubleshooting skill, one hundred two (102) or 65.38% require coordination/cooperation skill, eighty (80) or 51.28% require equipment selection skill, seventy-six (76) or 48.72% require reading comprehension skill, fifty-one (51) or 32.69% require mathematical skill, twenty-three (23) 0r 14.74% require learning strategies skill and twelve (12) or 7.69% require decision-making skill.

Degree of Seriousness of the Problems Encountered by Companies

The moving out of experienced workers is very serious and is ranked first with 721 points, with a modal value of 124 or 79.48% of the respondents very far from the mean which is 31.2. The "new employees lack the skills required by the job" ranked

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2nd and is a very serious problem with 707 points with a modal value of 121 or 96.03%. The rampant absenteeism is a serious problem with a modal value of 128 or 82.05% and it was ranked 3rd with 462 points. The under-qualification of an employee is considered a moderately serious problem with a modal value of 78 or 50% and it was ranked 4th with 446 points. The educational attainment of employees that do not match their actual job is a serious problem with a modal value of 79 or 50.64% and it was ranked 5th with 404 points. The lack of competence of employees for the job is considered less serious with a modal value of 85 or 54.50% with 371 points and ranked 6th. The performing employees who do not have a certificate or license for the job are a less serious problem with a modal value of 94 or 60.25% and were ranked 7th with 348 points. The problem in low-performance out-put of an employee is not a problem according to the respondents with a modal value of 89% and was ranked 8th with 276 points. The over-qualification of the employee for their position is not a problem by the respondent with a modal value of 139 or 89.10% and was ranked 9th with 181 points.

Competency needs of the companies but not included in the curriculum of the SHS

The following are the competencies needed by the companies but are not included in the curriculum of the electrical course of the SHS.

1. CCTV installation
2. Fire Alarm installation
3. Solar Device installation
4. Generator operator/maintenance
5. Ground man assistant electrician
6. Motor control installation/operation
7. Sensor automation installation
8. Motor rewinding

CONCLUSIONS

Based on the findings presented, the following conclusions were drawn:

1. Most of the electrical companies in Region 1 are engaged in general construction and general engineering services. The human resource needs of the companies are skilled employees who possess the competence to the construction and engineering job demanded in the companies. Indeed, there are job vacancies in the electrical companies in Region 1. However, the companies are hesitant to hire newly graduated SHS applicants because of the impression that said applicants do not possess the competencies required by the jobs in the companies.
2. The majority of the companies are hesitant to hire newly graduated SHS applicants because they do not possess the competence required by the job. There are few companies, however, who would accept new graduates of the SHS provided they will not be treated the same as the regular employees. They will be treated as an apprentice and will receive a lower salary. They will not be assigned to do delicate works.
3. Since the companies are engaged in general construction, the most in-demand skills are electrical installations, like building wirings, CCTV, Telephone, fire alarm, solar device, etc. There are also other skills the companies require their employees to have, like communication skills and time management which are highly demanded by the companies.
4. The very serious problems encountered by the companies were experienced employees are moving out of the company and new employees who would replace them lack the skills required by the job. The over qualification of employees is considered not a problem by most companies.
5. There are several competencies needed by the companies that are not offered in the electrical courses of the SHS based on the curriculum guide of DepEd. This study serves as a guide in formulating a curriculum that will cater to the human resource needs of the electrical industries in Region 1. The study showed that there is indeed a mismatch between the human resource needs of the electrical industries and the electrical course in the Senior High School of the DepEd in Region 1. Hence, there is a need to be aware of the human resource needs of the industries to guide the schools determine what skills to teach their students to avoid the mismatch of skills and jobs. The problems brought about by the mismatch between competencies and job hinders development. Students may end up jobless when they graduate because the competencies they learned are not the same competencies needed by the industries. Industries may experience a shortage of competent workers to perform different tasks in the workplace. Failure to determine this problem would affect not only the

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economy of the region but also the whole nation in general.

RECOMMENDATION

The following recommendations are hereby suggested to address the problems that were realized in this study:

1. Companies are hesitant to hire newly graduated SHS applicants.
   A. To the School;
      They should increase the number of hours of the On-the-Job for students to develop their skills in the real work environment to prepare them for the real work. It is also recommended that experimental learning through student engagement in extra-curricular activities, and internship programs should be encouraged and facilitated, regular updates of the curriculum used in the universities, and student enrollment should be regulated according to the labor market needs of various disciplines.
   B. To the company;
      They should give chance to the new graduate SHS to be employed and give them in-service training directly to the job that would enable them to be competent for the said job. This might win their loyalty to the company and serve with dedication.
2. The problem on the Mismatch between the competencies needed by the companies and competence being developed in the SHS. It is highly recommended that there must be closer coordination between the Schools, under the supervision of the Department of Education and the Industries to tackle the problem of skill-job mismatch. Companies must inform the schools about their needs so that school could redesign their curriculum to meet the human resource needs of the companies. This can be done at least yearly.
3. Problems encountered by companies on experienced employees are moving out of the company. Regular communication and team-building activities with their employees would foster closeness and a friendly environment in the company. Sometimes, it is not always about money. Friendship does contribute to too many factors for employees to stay. Giving them incentives is also a factor for them to stay with the company. The giving of employee incentives would promote job satisfaction that might prevent them from leaving the company.
4. There are competencies needed by the companies but not included in the curriculum of the electrical course in the SHS.
   A. A proposes curriculum guide was prepared by the researcher that integrates the competencies needed by the companies that are not included in the curriculum of the electrical course in the SHS. The number of hours for the competencies repeatedly included in the curriculum, like the Personal Entrepreneurial Competencies and Skills (PECS) and Environment and Market (EM) were reduced in place for the new competencies that were added.
   B. The researcher hopes that this study will shed light to address the problem of skill-job mismatch to cater to the human resource needs of the electrical industries in Region 1.

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