



**De La Salle University – Dasmariñas**  
**GRADUATE PROGRAM**

**Entry-Level Skills in the Electronics Assembly Industry: Basis  
for a Specialized Basic Operation's Occupational Skills  
Training (BOOST) Program for Unemployed High  
School Graduates in Cavite and Laguna**

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ABSTRACT

Name of Institution : De La Salle University – Dasmariñas

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Title : **Entry-Level Skills in the Electronics Assembly Industry: Basis for a Specialized Basic Operation's Occupational Skills Training (BOOST) Program for Unemployed High School Graduates in Cavite and Laguna**

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**STATEMENT OF THE PROBLEM:**

This study determined the entry-level skills in the electronics assembly industry as basis for a specialized Basic Operation's Occupational Skills Training (BOOST) Program for Unemployed High School Graduates in Cavite and Laguna.

Specifically, the study answered the following questions:

1. What is the profile of the three groups of respondents?

1.1 Representatives from Electronics Assembly Companies

1.1.1 Total number of employees

1.1.2 Number of employees who are high school graduates



1.1.3 Percentage of employees hired in the past three (3) years with only a high school diploma

1.1.4 Gender of employees hired in the past three (3) years with only a high school diploma

1.1.5 Positions of employees hired in the past three (3) years with only a high school diploma

**1.2 Graduating High School Students**

1.2.1 Age

1.2.2 Gender

1.2.3 Family Monthly Average Income

1.2.4 Marital Status

1.2.5 Reason for non-continuance of education

**1.3 Unemployed High School Graduates/Out-of-School Youth(OSY)**

1.3.1 Age

1.3.2 Gender

1.3.3 Family Monthly Average Income

1.3.4 Marital Status

1.3.5 Educational Attainment

1.3.6 Reason for non-continuance of education

2. What is the demand for employees with a high school diploma in the next three (3) years?



3. Are the graduating high school students and unemployed high school graduates/out-of-school youth interested to undergo proposed BOOST program?

3.1 What is the minimum fee they can afford to pay?

4. What are the entry-level skills required for job items suitable for high school graduates in the Electronics Assembly Companies?

4.1 What are the priority skills in the Electronics Assembly Companies based on the 9-point skills category?

5. What are the existing skills of the graduating high school students and unemployed high school graduates/out-of-school youth and based on the 9-point skills category of Electronics Assembly Company?

5.1 What is the extent of level of competence of the graduating high school students and unemployed high school graduates/out-of-school youth's existing skills?

6. Is there congruence between the entry-level skills required by Electronics Assembly Companies and the existing skills of the graduating high school students and unemployed high school graduates/out-of-school youth based on the 9-point skills category of Electronics Assembly Company?

6.1 Are there significant gaps between the entry-level skills required by the industry and the existing skills of the graduating



high school students and unemployed high school graduates/out-of-school youth based on the 9-point skills category of Electronics Assembly Company?

7. Based on the results of the study, what would be the design of the proposed Basic Operation's Occupational Skills Training (BOOST) Program for Unemployed High School Graduates/Out-of-School Youth?

**SCOPE AND DELIMITATION:**

Geographically this study was limited to the Province of Cavite and Laguna, for reasons that these two areas are highly industrialized, proven by the huge number of establishments/firms located in the said areas. The direct respondents of the study were representative sample respondents from the Electronics Assembly Companies, specifically the Human Resource Department (HRD) Officers or their equivalents in the respective companies, the graduating high school students from public secondary schools of school year 2003-2004 and lastly, those unemployed high school graduates/out-of-school youth from the aforementioned provinces.

The bases/criteria for the selection were: (a) the Electronics Assembly Companies are located within Cavite and Laguna; (b) only those companies which are engaged in board assembly of an electronic product; (c) the most populous municipalities in the province of Cavite and



1<sup>st</sup> District of Laguna, that is those with not less than 200,000 household population.

Although the conceptual framework of the study covered three phases, this study was delimited only to Assessment Phase and Design/Development Phase. Since the output of the study would be a proposal, the operational/implementation stage (i.e. from the development of learning tasks up to the try-out of the program) and the evaluation phase of the proposed BOOST program was not covered in the study.

**METHODOLOGY:**

The study utilized the descriptive developmental method of research, specifically utilizing normative survey. The respondents were 20 Electronics Assembly Companies, 1,508 unemployed high school graduates/OSY and 782 graduating students from the public high schools in Cavite and Laguna.

The research instrument used was adapted from the questionnaire developed by Volk and Peel. There were three sets of questionnaires corresponding to the three groups of respondents. Descriptive statistical treatments such as frequency count and percentages, mean, standard deviation, scatter diagram (bubbles), and a self-formulated gap equation were utilized in the study.



**MAJOR FINDINGS:**

1. The number of employees in electronics assembly companies ranged from 100 to as high as 6,000.
2. The number of employees in electronics assembly companies who were only high school graduates ranged from 30 to as high as 2900.
3. At least sixteen percent of the employees hired by 16 of the electronics assembly companies from 2001 to 2003 were high school graduates.
4. While all of the 20 electronics assembly companies hired female Production Assembly Operators, only 14 or 70% of them hired male Production Assembly Operators.
5. Eleven or 85 per cent of the 13 electronics assembly companies hired male Material Handlers and 10 or 77 percent of them hired female Material Handlers.
6. Ten or 90 per cent of the 11 electronics assembly companies hired female inspectors and 8 or 73 per cent of them hired male inspectors.
7. Two or 33 percent of the 6 electronics assembly companies hired female utility workers and 5 or 83 per cent of them hired male utility workers.



8. Ninety per cent of the graduating high school students were in the age group of 16 to 19 yrs. old. All of the graduating high school students were single. Fifty-five per cent of the graduating high school students were female. Sixty-three per cent of the graduating high school students belonged to families with an average monthly income of below P5,000. Eighty-four per cent of the graduating students from public high schools might no longer be able to pursue college or vocational formal education due to financial reasons.

9. Sixty per cent of the unemployed high school graduates/OSY were 20 yrs. old and above. Seventy-one percent of the unemployed high school graduates/OSY were single. Fifty-four per cent of them were female. The average family monthly income of unemployed high school graduates/OSY was P5,000 and above. Only 33% of them reached vocational and college level while 67% were only high school graduates. The primary reason for non-continuance of their education is financial insufficiency.

10. The demand for employees with only a high school diploma would remain the same in the next three years based on the responses of almost fifty per cent of the electronics assembly companies.

11. Ninety one per cent of the graduating high school students and unemployed high school graduates/OSY were interested to undergo





the BOOST Program. The amount of fee they could afford to pay on a monthly basis was P200 and below.

12. The 57 entry-level skills based on means ranging from 1.70 to 2.95 and were verbally interpreted as strongly support (skills is absolutely required) were the following:

- (1) A1- Understand common job related words;
- (2) A2- Read instruments such as gauges and meters;
- (3) A8- Perform simple mathematical functions;
- (4) B1- Speak in clear sentences;
- (5) B2- Give clear directions;
- (6) B3- Follow procedural directions;
- (7) B4- Listen to formal presentations;
- (8) D3- Work as a member of a team;
- (9) D4- Be willing to ask questions;
- (10) D5- Work well with supervisors;
- (11) D6- Work well with colleagues;
- (12) D7- Respect others' opinion;
- (13) D8- Participate in group discussions;
- (14) E1- Exhibit self-esteem;
- (15) E2- Desire further education or training;
- (16) E4- Work toward advancement;
- (17) E5- Establish personal goals;
- (18) G1- Assemble equipment following written directions;
- (19) G3- Select the proper tools or equipment for a task;
- (20) G5- Familiarity with industry-specific hand tools, power tools, machines, and equipment;
- (21) G6- Position and align parts in specified relationship to each other in jig; fixture, or other holding device.;
- (22) G7- Crimp, stake, screw, bolt, rivet, weld, solder, cement, press fit, or similar operations to join or secure parts in place;
- (23) G8- Mount assembled



components on chassis panel; (24) G16- Appropriately perform on-line go or no go testing and inspection, using magnifying devices, measuring instruments, and electronic test equipment.; (25) G18- Appropriately clean parts, using cleaning solution, air hose, and cloth; (26) G19- Understand and maintain all shop safety procedures and requirements; (27) I1- Demonstrate punctuality; (28) I2- Maintain regular work habits; (29) I3- Maintain quality standards; (30) I4- Take pride in one's work; (31) I5- Practice a healthy lifestyle; and (32) I6- Have knowledge of the company. (33) A4- Read technical manuals; (34) A5- Read diagrams, plans and charts; (35) A9- Estimate time, weight and speed measurements; (36) B5- Understand and/or speak another language; (37) C2- Troubleshoot Problems; (38) C3- Make decisions independently; (39) C4- Understand problem solving processes; (40) D1- Recognize cultural and ethnic diversity; (41) D2- Recognize equality of the sexes; (42) E3 - Recognize career options; (43) F2- Operate a computer keyboard; (44) G4- Know how technological systems operate (e.g. communications; mfg.); (45) G9- Connect component lead wires to printed circuit; (46) G10- Appropriately route and connect wires between; (47) G11- Install finished assemblies or subassemblies in cases or cabinets; (48) G12- Assemble and attach hardware, such as knobs, switches, and clamps, to assemblies; (49) G13- Perform intermediate assembly tasks; such as



sanding, epoxy bonding, etching, encapsulating, and color coding parts and assemblies; (50) G14- Understand and appropriately tend machines that press, shape, or wind component parts (51) G15- Adjust or trim materials from components to achieve specified electrical or dimensional characteristics; (52) G17- Perform assembly operations under microscope or other magnifying device; (53) H1- Demonstrate leadership qualities; (54) H2 - Motivate others; (55) H3 - Negotiate and resolve conflicts; (56) H4 - Improve organizational effectiveness; (57) I7 - Participate in community/civic activities.

13. The 32 priority skills identified from among the entry-level skills based on the range of 2.34 to 3.00 were as follows:

(1) A1- Understand common job related words; (2) A2- Read instruments such as gauges and meters; (3) A8- Perform simple mathematical functions; (4) B1- Speak in clear sentences; (5) B2- Give clear directions; (6) B3- Follow procedural directions; (7) B4- Listen to formal presentations; (8) D3- Work as a member of a team; (9) D4- Be willing to ask questions; (10) D5- Work well with supervisors; (11) D6- Work well with colleagues; (12) D7- Respect others' opinion; (13) D8- Participate in group discussions; (14) E1- Exhibit self-esteem; (15) E2- Desire further education or training; (16) E4- Work toward advancement; (17) E5- Establish personal goals; (18) G1- Assemble equipment following



written directions; (19) G3- Select the proper tools or equipment for a task; (20) G5- Familiarity with industry-specific hand tools, power tools, machines, and equipment; (21) G6- Position and align parts in specified relationship to each other in jig, fixture, or other holding device.; (22) G7- Crimp, stake, screw, bolt, rivet, weld, solder, cement, press fit, or similar operations to join or secure parts in place; (23) G8- Mount assembled components on chassis panel; (24) G16- Appropriately perform on-line go or no go testing and inspection, using magnifying devices, measuring instruments, and electronic test equipment.; (25) G18- Appropriately clean parts, using cleaning solution, air hose, and cloth; (26) G19- Understand and maintain all shop safety procedures and requirements; (27) I1- Demonstrate punctuality; (28) I2- Maintain regular work habits; (29) I3- Maintain quality standards; (30) I4- Take pride in one's work; (31) I5- Practice a healthy lifestyle; and (32) I6- Have knowledge of the company.

14. All Graduating high school students and unemployed high school graduates/OSY had the 72 skills under the 9-point skills category.

15. The extent to which such skills exists the graduating high school students and unemployed high school graduates/OSY was indicated by means which ranged from 2.03 verbally interpreted as an average extent to 2.63 verbally interpreted as a high extent.



16. The entry-level skills more importantly the priority skills that had the least congruence were: A8- Perform simple mathematical functions; G18- Appropriately clean parts, using cleaning solution, air hose, and cloth; G7 - Crimp, stake, screw, bolt, rivet, weld, solder, cement, press fit, or similar operations to join or secure parts in place; G16- Appropriately perform on-line go or no go testing and inspection, using magnifying devices, measuring instruments, and electronic test equipment; G6- Position and align parts in specified relationship to each other in jig, fixture, or other holding device; and G8- Mount assembled components on chassis panel.

17. A substantial magnitude of gaps existed from among the priority skills and the existing skills of the student respondents, those that needed the most attention or more efforts to be exerted on were: A8- Perform simple mathematical functions; B2- Give clear directions; B4- Listen to formal presentations; D8- Participate in group discussions; E5- Establish personal goals; G18- Appropriately clean parts, using cleaning solution, air hose, and cloth; G19- Understand and maintain all shop safety procedures and requirements; G16- Appropriately perform on-line go or no go testing and inspection; and, G8- Mount assembled components on chassis panel.



**CONCLUSIONS:**

1. There was a high hiring rate for employees with only a high school diploma in the electronics assembly companies.
2. The jobs available in electronics assembly companies for an individual, who had a high school diploma only, were Production Assembly Operator, Material Handler, Inspector and Utility Worker.
3. Graduating high school students were generally 16 to 19 yrs. old, female, single, and belonged to families with low income.
4. Unemployed High School Graduates/OSY who were unable to pursue education because of financial insufficiency were more than 20 yrs. old, female, single, and belonged to families with an average monthly income of more than P5,000.
5. Graduating high school students and unemployed high school graduates/out-of-school youth were eager to undergo the BOOST program and were willing to pay a minimal fee.
6. The finding that the demand for hiring high school graduates would remain constant was similar to studies of Borchner and De Leon and to the ENCCARE Project.
7. There were skills in the 9-point skills category that were not required by the electronics assembly companies.



8. All skills in the 9-point skills category existed in the unemployed high school graduates/out-of-school youth but with less congruence especially among the priority skills.

9. There were gaps in the competencies of graduating high school students and unemployed high school graduates/out-of-school youth, that need enhancement and further development to meet the minimum requirement in electronics assembly companies.

**RECOMMENDATIONS:**

1. A customized training program such as BOOST should be conceptualized and implemented to address the concern of improving the competencies of the graduating high school students and unemployed high school graduates/out-of-school youth.

2. It should focus on developing areas of skills, which were identified as priority skills.

3. A creative plan should be drawn to address financial concerns related to schooling such as “study-first, and be-a-benefactor-later scheme” that could be self sustaining.

4. A partnership should be established with industry to intensify efforts related to on-the-job training (OJT) and placement of graduates.



5. Private Voc-Tech Institutions (PVTI's) should be encouraged to adopt customized training programs as part of their community extension services.

6. A copy of this study should be furnished to the Bureau of Secondary Education - Department of Education (DepEd) for possible consideration in enriching the High School Curriculum.

7. Local government (i.e. municipality and barangay level) should be encouraged to initiate programs that cater to the educational and employment needs of their constituents in cooperation with appropriate government organizations (GO's) and non-government organization (NGO's).

8. Other similar studies may be conducted with the other industries especially those, that are labor-intensive in order to identify their specific needs relevant to employing high school graduates.





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