

The Essence of Setting up Production Units in Ghanaian Polytechnics

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Abstract

Polytechnics are hi-tech institutions providing career-focused, proficiency based education, expected to work with industry to produce skilled manpower based on contemporary and future needs of industry. However, the cost of setting up fashion production unit and equipping it to the values of industry is a setback to most polytechnics. Bridging this gap between polytechnics and industries is the need to have constant supply of resources to help maintain the various units. Education and the need to achieve our goals as designers compel polytechnics to initiate measures to overcome this difficulty. This concept should help students acquire competences expected from them as professionals. Technical and Vocational Training has emerged as one of the most effectual Human Resource Development Strategies that African countries need to secure, train and update their technical labour force for rapid industrialization and national development. The study objective was to assess the impact of vocational and technical skills training in improving the socio-economic status of students in the Polytechnics. The study seeks to find out the essence of setting up production units in Polytechnics and to improve competences and skills, its achievement and purpose of increasing access of young person's to skills attainment and empowerment for productive employment.

A simple random technique was used to sample views, and a structured questionnaire and interview guide was used for data collection. The interpretation revealed that most polytechnics do not have production units. Specifically the study seeks to unveil the essence of setting up production units in Ghanaian Polytechnics and suggest best practices in the fashion industry that could be replicated in a production unit for effective fashion education in Ghanaian Polytechnics.

Key words: Production unit, Clothing, Fashion, Garment, Manufacturing, Industrial Sewing Machine, Production Management, Equipment, Essence.

1. Introduction

The Polytechnics are technological institutions providing career-focused, skill based education and so is expected to work with industry to produce skilled manpower based on current and future needs of industry (Obeng-Apori, 2005). However, the cost of setting up fashion production unit and equipping it to the standards of industry is a major problem most polytechnics face. To bridge this gap between polytechnics and industries there is the need to have constant supply of resources to help maintain the various production units. Education and the need to achieve our goals as good designers from industries compel polytechnics to initiate measures to overcome this difficulty. This concept should help students in acquiring competences the industry really expects from them as professionals after they graduate. It should also augment the role of industry for student's industrial attachment exposure similar to those practiced in the industries. Production units are mini industries, and with their activities they manufacture clothing and accessories on commercial basis. The fashion industry embraces both haute couture (clothes made by individual designers for a small and wealthy clientele), and mass produced garments on a wider commercial basis which are export and also sold in high-street shops, chain stores, and department stores, and by mail order among other means. With the bachelor of technology in textiles, students are supposed to undertake industrial attachment and taught as a course requirement for graduation. Due to the number of existing fashion industries, not all students get placement for industrial exposure. Over the years industrial practices are undertaken only in industry and our institutions lack industrial set-ups let alone observing the practices. Because of this there is a wide gap between what exist in our institutions and what the industries expect. This situation can be rectified by critically examining the need to set up production units in various polytechnics. The recent introduction of Competency-Based Teaching and Learning in Fashion education currently being piloted in Accra Polytechnic with the Fashion Design and Textiles Department makes the need for a fashion production unit even more imperative because the programme require that students are encouraged to be more practically oriented and acquire skills and competencies at their own pace. The main objective of this research is to strongly highlight on the essence of introducing production units in Polytechnics that study fashion (clothing and textiles). The Polytechnics in Ghana were first established as technical institutes that offered craft courses. Nsiah-Gyabaah, (2005) states that, in 1960, following the industrial development policy and rapid technological progress in a broad range of areas, technical education became a necessity for the country. He further argues that since the technical institutions (polytechnics) were offering second-cycle craft courses while

the universities were offering higher tertiary courses, there was a gap in the manpower supply needs of the country. In recognition of this, a number of the technical institutes were established to train lower and middle-level skilled manpower to fill the gap. The Oxford Advanced Learners Dictionary defines production as the process of rowing or making food, goods or materials especially in large quantities. The Cambridge International Dictionary also defines production as the process of making or growing goods to be sold and Carr and Latham (1998) recognizes that production cannot take place unless the resources are available. These resources and are things like factories, building, machines, railways, farmland, rivers, climate, mines, shops and human skills among others. According to him, these resources are used to produce goods and services to satisfy human wants. Cooklin (2006) asserts that most wholesale fashion companies, where manufactured clothes are sold to retailers, are divided into several departments, where teams of workers with specialist skills handle the design, fabrication and garment marketing. The Key role in a fashion company as those of design, cloth-buyer, pattern-cutter, sample machinist, quality control officer, factory manager, and sales, marketing, and promotion executive (Carr *et al*). The function of each department is related to that of the others, and the company's efficiency depends on effective planning and communication between departments. Therefore if the production units are set it would serve as a training ground for students in all the stages of garment production from design to merchandising.

2. Methodology

This is the methodology used in the research. It provides information on how the research study was conducted as proposed. (Baumgartner *at el* 2002) Included in the methodology are the research design, research setting, population of study, sampling and sample size, data collection size, data collection instrumentation, questionnaires and interview guide, validation of instruments, reliability of instruments, administration of data collection schedule, processing for collecting data, facilities and institutions used.

2.1 Research Design

The study is about the essence of setting up production units in polytechnics in Ghana. A survey research design was used for this study. A survey is the most common type of descriptive research and it involves determines the views or practices of a group of people through interviews or questionnaire. (Baumgartner *at el* 2002, Best 1981)

2.2 Research Setting

There are ten polytechnics in Ghana, out of ten, four of the polytechnics have departments offering fashion design and textiles studies. The researcher covered two of the Polytechnics within the greater Accra and western regions; Accra and Takoradi Polytechnics.

2.3 Population of the Study

Two Polytechnics were chosen for the study, these are the Department of Fashion Design and Textiles Studies in Takoradi and Accra Polytechnics. The population of study constitutes lecturers, technicians and students in the department of fashion design and textiles studies.

It also include lecturers in the hotel catering and institutional management and furniture department in Accra polytechnic and lecturers in textiles at Takoradi polytechnic, these other departments are included in the study because they also offer practical oriented programs and production units will help improve their studies.

2.4 Sampling and Sample Size

A simple random sample was used in selecting respondents. Random sampling is obtained when every individual in the population has equal chances of being selected, and the selection of one person does not interfere with the selection chances of any other person. This process is considered to be bias free because no factor is present that can affect selection. The random process leaves subject selection entirely to chance (Nkpa, 1997).

From the fashion design and textiles studies department, the researcher selected four (4) lecturers, four (4) technicians, twenty-two (22) students from each of the two polytechnics. This makes it eighteen (18) lecturers, eight (8) technicians and forty-four (44) students respectively. From the hotel catering and management studies department and the furniture department three (3) lecturers each and four (4) from the textiles department were selected in Takoradi Polytechnic, making the sampling size seventy (70).

2.5 Instrumentation for Data Collection

A data collection instrument is any paper and pencil test to measure or physical performance test used to collect information on the variable under study (William, 2001). Data was collected for analysis and the questionnaire and interview guide were used for data collection.

2.6 Questionnaire and Interview Guide

Baumgartner *et al* (2002) described a questionnaire as a printed list of questions given to respondents to answer. The researcher made use of both the closed and open ended type of questionnaire. For the closed type, respondents had to choose from the responses given by ticking appropriate answers, and for the open type respondents write short responses where necessary. Seventy (70) questionnaires were prepared and administered to all technicians and lecturers were interviewed. Forty-four (44) students answered the questionnaire. Twenty-two (22) from each of the polytechnics (Accra and Takoradi) were part of the sample used.

This is face to face meeting between a researcher and a respondent. All the respondents interviewed were lecturers and technicians from the Accra and Takoradi Polytechnics, and the number of respondents interviewed was twenty six (26). The structured interview is one in which the interviewer asks the respondents an established set of questions. Each interview involves exactly the same questions asked the same way. This type of interview comes close to being the oral administration of questionnaires. The same items used for the students were used for the interview guide. The guide was designed for the respondents because they have little time to spare.

2.7 Validation of the Instruments

The initial draft of the instrument was subjected to face validity with some specialist from the field of study. The essence of validating the instrument was to ensure that it would elicit the information it was designed for (Ndagi). The relevance of the items to the purpose of the study were checked, clearly stated and confirmed to be capable of eliciting for the right responses from the respondents. Based on the agreement some of the items in the questionnaire were modified and others added.

2.8 Reliability of the Instruments

To determine the reliability of the instrument, they were tried and tested using few randomly picked students from the department of fashion design and textiles studies from the Accra Polytechnic.

2.9 Administration of Data Collection Instruments

The researchers handled every aspect of the administration of data collection. The researcher distributed the questionnaires for the students from the Accra and Takoradi polytechnics and conducted interviews for the lecturers and technicians from the two polytechnics. The questionnaires were collected from the respondents after thirty minutes of administration.

2.10 Procedures for Processing and Analyzing Data

Data was coded and entered into the computer, and Statistical Package for Social Sciences (SPSS) was used to analyze the data. Data was presented in tables, pie charts and bar charts.

2.11 Facilities and Institutions used

The researchers visited the following libraries to gather information from relevant books, dictionaries and articles. Information was photo copied and later used as related literature.

University of Cape Coast Library.

Accra Polytechnic Library.

Takoradi Polytechnic Library.

University of Ghana, Legon Library.

University of Education Winneba- Kumasi Library.

2.12 Discussions and Analysis

Table 1 indicates the results of the findings on gender. It can clearly be seen that in the fashion design and textiles studies department, the number of student respondents were eighteen (18) males representing approximately 26% and twenty-six (26) females representing 37% making the total number of students forty-four (44) representing approximately 63%, twenty-two (22) from Takoradi and Accra polytechnics respectively. The table again indicates the lecturer and technician respondents used were nine (9) males representing approximately 13% and seventeen (17) females representing 24%, making the total number of workers to be twenty-six (26) representing 37%. The findings in table 1 indicate that the number of female respondents is more than the number of males used in the study. The number of female respondents was forty-three (43) representing 61% while the number of male respondents was twenty-seven (27) representing approximately 39% and this constitutes respondents from the department of fashion, catering, textiles and furniture craft in Accra and Takoradi Polytechnics.

Table 2 shows that sixty-eight (68) people responded to the items, two (2) did not respond to the item. Out of the sixty-eight (68), twenty-three (23) respondents forming 33.8% of the total response said that production unit is set up to improve skills of students. Twenty-one (21) of the respondents representing 30.9% said it is to bridge the gap in the industries, twelve (12) of the respondents representing 17.6% said it was to improve education, while twelve (12) representing 17.6% were of the view that production unit could be set up to generate income.

The findings in table 3 indicate that approximately 99% of the respondents indicated that the establishment of a production unit in the Polytechnics would improve Fashion and Textiles education. Out of this, thirty-eight (38) respondents representing 56% said the establishment of a production unit would improve industrial practices whilst twenty-nine (29) respondents approximately 43% indicated that the setting up of production units would improve skills of the students. Only one person (1%) indicated that the establishment of production unit would play no role in Fashion, Catering, Textiles and Furniture education.

The findings in table 4 shows that sixty-four (64) of the respondents representing 94% assert that it is necessary to set up production units in Polytechnics in Ghana where as four (4) of the respondents representing 6% said it was not necessary. The majority therefore hold the view that setting up production units will improve on fashion, catering, textiles, and furniture craft education in the polytechnics.

In table 5, there is an indication that thirty-nine (39) respondents representing 55% said they have production units existing in their institution whilst thirty-one (31) of the respondents representing 45% of them indicated that production units does not exist in their department. Those who said they have said the production unit creates better opportunities for skills and competence improvement for those who have as they have comparatively better chances in accessing jobs.

The findings in table 6 indicate that thirty-eight (38) respondents represented 54% said that the best practices that could be replicated in the production unit for effective fashion education is judicious use of fabric in terms of cutting. Nineteen (19) people representing 27% said accurate pattern making is what could be replicated in the production unit for effective fashion education. Six (6) of the respondents representing approximately 9% said quality control is what could be replicated for effective fashion education, four (4) of the respondents representing approximately 6% said mastering the art of stitching is what could be replicated whilst three (3) of the respondents representing 4% said packaging was the best practices though with a low percentage as being a best practice because it is the final stage in garment manufacture.

Table 7 depicts that thirty-seven (37) respondents representing approximately 57% of the respondents said the establishment of production units will have an effect on their education whilst twenty-eight (28) of the respondents representing 43% said it will have no effect on their education. Out of the seventy (70) respondents five (5) did not respond to the item.

In table 6 sixty (60) of the respondents representing 88% were of the view that the setting up of production unit would benefit Lecturers, Technicians and Students. Five (5) of the respondents representing approximately 7% said it will benefit lecturers and students. Two (2) of the respondents representing approximately 3% were of the view that the production unit will benefit technicians and students whilst one (1) of the respondents representing 2% said that the setting up of a production unit would benefit no one. Two (2) of the respondents did not respond to the item.

In table 8 sixty (60) of the respondents representing 88% were of the view that the setting up of production unit would benefit Lecturers, Technicians and Students. Five (5) of the respondents representing approximately 7% said it will benefit lecturers and students. Two (2) of the respondents representing approximately 3% were of the view that the production unit will benefit technicians and students whilst one (1) of the respondents representing 2% said that the setting up of a production unit would benefit no one. Two (2) of the respondents did not respond to the item.

In table 9 thirty-two (32) of the respondents representing approximately 49% were of the view that the production unit when set up will improve skills of lecturers, technicians, and students. Twenty-two (22) of the respondents representing approximately 34% were of the view that it will help lecturers, technicians and students in the acquisition of competencies, whilst eleven (11) of the respondents representing approximately 17% were of the view that the production unit would promote idea sharing.

The figures in table 10 indicate that forty-six (46) of the respondents representing approximately 68% indicated that the factor that will influence their choice of machine which will be used in the production unit was its efficiency. Whilst twelve (12) of the respondents representing approximately 18% said they will consider both the brand and efficiency when choosing machines for the production units. seven (7) of the respondents representing 10% said the brand of the machine is what they would consider most when choosing machines for the production unit, whilst two (2) of the respondents representing approximately 3% were however of the view that the style of the machine was what would influence their choice of a machine used in the production units meanwhile one (1) of the respondents representing 1.5% was of the view that efficiency and style of the machine was what would affect the choice of machine. Two (2) of the respondents did not respond to the item. From the table it can be seen that efficiency of machines is what most respondents consider as important when choosing machines for the production unit.

From table 11, thirty-six (36) of the respondents representing approximately 55% reported that the machines used in the production units were industrial sewing machines and twenty (20) of the respondents representing 30% said that they had both the industrial and domestic sewing machines whilst five (5) of the respondents representing 8% said that there were machines available in the production unit. Five (5) of the respondents representing approximately 8% reported that the machines were domestic sewing machines meanwhile four (4) of the respondents did not answer the item.

3 Discussion

Demographic Data

Takoradi and Accra Polytechnics were used for the research. This section seeks personal data of respondents. From the results of the findings it can clearly be seen that in the fashion design and textiles studies department, with regards to the gender of students used in the study the number of students used were forty-four (44) representing approximately 63% out of which twenty-six (26) were females eighteen (18) males, making it twenty-two (22) students from each of the polytechnics. From the number of students used in the study, fourteen

(14) of them were Bachelor of Technology Students in Takoradi polytechnic, twenty (20) of them were H.N.D III students, seven (7) of them were H.N.D II students and three (3) H.N.D I students. With the technicians and lecturers twenty-six (26) representing 37% respondents were used for the study out of this seventeen (17) of them representing were females and nine (9) males. They were from the Fashion, Catering, Textiles and Furniture departments in the Takoradi and Accra Polytechnics. Ten (10) of them had Masters, nine (9) of them had First Degree and seven (7) had Higher National Diploma (HND) making their positions as lecturers, instructors, and technicians respectively.

Research Question One

What is the Essence of Setting up Production Units in Polytechnics in Ghana?

This section seeks to unveil the importance of setting up production units in Polytechnics in Ghana and its usefulness to industrial exposure, and also find out if production units exist in the Ghanaian Polytechnics. Seventy questionnaires were administered, out of which thirty-eight (38) representing 55.1% production units exist in their departments, while thirty-one (31) representing approximately 44.9% said they did not have a production unit in their department. The study findings indicated that thirty-two (32) of them representing 49.2% stated that the production unit was for improving skills while twenty-two (22) representing 33.8% said it was for acquiring competences, eleven (11) of the respondents representing 16.9% said it was for idea shearing. Five (5) of the respondents did not answer that particular item. Out of the seventy (70) respondents, thirty-seven (37) representing 56.9% said that the activities of the production units affect them, while twenty-eight (28) representing 43.1% stated that the activities of the polytechnics does not affect them, five (5) of the respondents did not answer the item.

When asked what were the reasons for setting up production units in the polytechnics sixty-eight (68) out of the seventy (70) responded and two (2) did not. Out of those that responded twenty-three (23) representing 33.8% said to improve skills of students, twenty-one (21) which represents 30.9% said it will bridge the gap in the industries and the polytechnics and twelve (12) of them representing 17.6% said it will generate income and it will improve education respectively. Which ever way one looks at it the study find reiterate the essence of setting up production unit to enhance fashion education. Teams of workers required in industry are those with specialist skills who can handle the product design, manufacturing and marketing (Crocker, 2005).

Research Question Two

What Role does Production Units Play in Fashion Education?

This section seeks to reveal the role fashion production units play in Polytechnic education. Thirty-eight (38) of the seventy (70) respondents representing 55.9% stated that the role of production unit play in fashion education is to improve industrial practice, twenty-nine (29) of them representing 42.6% said the role of production units was to improve skills. Only one (1) of the respondents representing 1.5% stated that production unit will play no role in fashion education meanwhile two (2) of the respondents did not answer that item. Clearly the majority of them, thus sixty-seven (67) respondents representing approximately 99% stated the role production units would play in fashion education is to improve skills and industrial practice. This opinion is supported by many educationists on practice and skill improvement for students offering practical courses as in fashion education (Carr and Latham, 1994).

When asked whether it was necessary to set up production units, sixty-four (64) respondents representing 94.1% said yes, four (4) of the respondents representing 5.9% said it was not necessary meanwhile two (2) of the respondents did not answer the item. Almost all who said yes said the production unit when established will let them be more skilful and more competences will be acquired.

When asked who respondents think the production unit will help most, sixty (60) representing 88.2% said the unit if established will help students, technicians and lecturers. Five (5) of the respondents representing 7.4% said it will help lecturers and students, two (2) of the respondents representing 2.9% said technicians and students and one (1) representing 1.5% said it will benefit no one, while two (2) of the respondents did not answer the item.

When asked if respondents ever worked in an industry, sixty (60) of the respondents said yes but explained it was for industrial attachment which lasted for only ten weeks. Five (5) of the respondents said they have never gone for industrial attachment and five (5) of the respondents who also said yes, said it was a permanent job.

When asked what machines in terms of capacity exist in the production unit in their departments, thirty-six (36) of the respondents representing 54.5% said they have industrial sewing machines. Twenty (20) of the respondents representing 30.3% said they had both the domestic and industrial sewing machines, five (5) of the respondents said there were none and four (4) respondents did not answer the item. The Polytechnics are technological institutions providing career-focused, skill based education and so it is expected to work with industry to produce skilled manpower based on current and future needs of industry.

Research Question Three

What Best Practices in the Fashion Industry could be Replicated in the Production Unit for Effective Fashion Education?

This section seeks to reveal the best practices in fashion/ catering/ textiles/ furniture industry that could be replicated in the production units for effective Polytechnic education.

When asked what influence their choice of machines used in the production unit, forty-six (46) of the respondents representing approximately 68% said the efficiency of machines in production and twelve (12) of the respondents representing 17.6% said their choice of machines depends on both the brand and efficiency of the machine whilst seven (7) of the respondents representing 10.3% said the brand of machines and meanwhile one (1) of the respondents however said the choice of machine depends on the efficiency and style of machines and two (2) of the respondents did not answer the item (Carr and Latham, 1994)

When asked what challenges could be encountered in the production units, twelve (12) of the respondents representing 40% said it will disturb studies, eight (8) of the respondents representing approximately 27% had diverse reasons. Five (5) of the respondents representing approximately 17% said maintaining and repairs of the machines will be a challenge three (3) of the respondents representing 10% said there may be insufficient machines for all the students in the department. Two (2) of the respondents indicating 6.7% said it will be difficult to maintain discipline in the production units. More than half of the respondents forty (40) of the respondents representing 57% did not answer this item.

When asked what are the best practices in the fashion industry that could be replicated in the production units for effective fashion education, thirty-eight (38) of the seventy (70) respondents representing 54.3% said judicious use of fabric in terms of cutting could be imbibed in students and nineteen (19) of the respondents representing 27% said students will acquire skills in accurate pattern making. six (6) of the respondents representing 8.6% said it will improve quality control of the work that will be produced in the unit, while four (4) of the respondents representing 5.7% said it will help in the mastering the arts of stitching and three (3) of the respondents representing 4.29% said students would improve skills in packaging of products produced in the unit.

The key roles in fashion producing companies are those of design, pattern-cutter, sample machinist, quality control officer, factory manager, cloth-buyer and sales, marketing, and promotion executives. The function of each department is related to that of the others, and the company's efficiency depends on effective planning and communication between departments (Crocker, 2005). These are all skills and competences students can acquire through constant and sustainable practice in the fashion production unit.

4. Conclusion

Moreover, the figures and vivid information have provided an overall summary of the impact of production units in fashion and textiles students offering polytechnic education. While the information specified here did not provide statistical accuracy in relationship to the sample of respondents. All of the information gathered has relevance to the subject herein which is how students, technicians and lecturers feel about the success and effectiveness of the production units, and the changes it has brought in their skills respectively.

The study findings established challenges in fashion education in the Polytechnic with regards to industrial exposure and training students to maintain standards using industrial approaches and sustaining best industrial practices. The study draws responses as to how to address these challenges reaffirming the importance of fashion production units in the Polytechnic. The study would be very useful in further research work in improving fashion education in the Ghanaian Polytechnic.

Recommendations

Production units should be setup in all departments in the polytechnics offering practical oriented programs, like fashion, textiles, catering and furniture.

Students should be educated on the need to be skilful and also the need to acquire competences in their area of specialization.

Students should be educated on how to use the industrial sewing machines, so that they get used to what pertains in industry.

Students should be made aware of the importance of specification, standards, and quality control of products from the production units.

In the absence of such production units there is the need to organize field trips to industries so that students have a feel of what awaits them.

Student must be educated about the different industrial machines and their uses.

Tab 1: Gender, Department and Position of Respondents

Qualification of respondent	Department						Total
			Fashion	Catering	Textiles	Furniture	
Student	Gender	Male	14		4		18
		Female	24		2		26
	Total		39		6		44
Worker	Gender	Male	5	0	2	2	9
		Female	10	4	2	1	17
	Total		15	4	4	3	26

Tab 2: Reasons for Setting up Production Units in the Polytechnic

Reasons for setting up Production Units	Frequency	Percent
To generate income	12	17.1
To improve education	12	17.1
To bridge the gab in the industries	21	30.0
To improve skills of students	23	32.9
No response	2	2.9
Total	70	100.0

Tab. 3: Role of production unit in Fashion/ Textiles education

Role of Production Units	Frequency	Percent
Improving skills	29	41.4
Improving industrial practice	38	54.3
No role	1	1.4
No response	2	2.9
Total	70	100.0

Tab 4: Necessity of Production units to improving Fashion/Catering/Textiles/Furniture education

	Frequency	Percent
Yes	64	91.4
No	4	5.7
Total	68	97.1
No response	2	2.9
Total	70	100.0

Table 5: The existence of production unit in Polytechnics

Existence of Production units	Frequency	Percent
Yes	39	55
No	31	45
Total	70	100.0

Tab 6: Best practices in fashion industry that could be replicated in production unit for effective fashion education in Polytechnics

Best practices	Frequency	Percent
Accurate pattern making	19	27.1
Judicious use of fabric in terms of cutting	38	54.3
Mastering the arts of stitching	4	5.7
Quality control	6	8.6
Packaging	3	4.29
Total	70	100.00

Tab 7: Effect of activities of production unit on education of respondents

	Frequency	Percent
Yes	37	52.9
No	28	40.0
No response	5	7.1
Total	70	100.0

Tab. 8: Beneficiary of the setting up of production unit

Beneficiary of Production Units	Frequency	Percent
Students, Technicians and Lecturers	60	85.7
Technicians and Students	2	2.9
Lecturers and Students	5	7.1
No one	1	1.4
No response	2	2.9
Total	70	100.0

Table 9: Benefits from production units

	Frequency	Percent
Idea sharing	11	15.7
Improving skills	32	45.7
Acquire competence	22	31.4
Total	65	92.9
No response	5	7.1
Total	70	100.0

Table 10: Factors influencing choice of machines used in the production unit

	Frequency	Percent
Efficiency of machines	46	65.7
Style of machines	2	2.9
Brand of machines	7	10.0
Efficiency/Style of machines	1	1.4
Brand/Efficiency of machines	12	17.1
Total	68	97.1
No response	2	2.9
Total	70	100.0

Table 11: Machines available at the various Polytechnics production units

Machines available	Frequency	Percent
Domestic sewing machines	5	7.1
Industrial sewing machines	36	51.4
Both	20	28.6
None	5	7.1
No response	4	5.7
Total	70	100.0

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