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Relevance of the clothing curriculum to industry: A case study of a polytechnic in Zimbabwe

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Abstract

This study examined the relevance of the National Certificate in Industrial Clothing Design and Construction Curriculum to the Clothing Industry. A qualitative approach was used in the study utilising a case study of one Polytechnic in Zimbabwe. Convenience and purposive sampling were used to come up with a sample for the study. The participants were four second-year clothing students, four production managers and three clothing lecturers. Data were collected through interviews, observation and document analysis. The findings showed that the curriculum furnished students with basic skills and competences for the clothing industry. However, the skills and competences may not be relevant for employment in the clothing industry. The study established that stakeholder involvement in curriculum design and implementation was essential for development of relevant programmes. The study recommends a link between curriculum designers and implementers with industry for development of relevant programmes.

Keywords: curriculum, stakeholder involvement, skills and competences, employment, clothing industry.

INTRODUCTION

The National Certificate in Industrial Clothing Design and Construction is a two-year programme. The entry requirement is a minimum of five 'O' level passes including Fashion and Fabrics and English Language.

In 1997, the National Certificate in Industrial Clothing Construction Programme 374 was introduced at the Polytechnic. According to Higher Education Examination Council of Zimbabwe (1993b), the programme was designed to produce a clothing constructor who is highly skilled in the construction of garments to satisfy the needs of the clothing industry. The programme comprised Industrial Pattern Techniques, Industrial Sewing Techniques, Clothing Factory Management and Operations, Garment Design and Textile Studies. One of the programme's aims was to train versatile operators within the clothing industries. In 2005, the programme was revised and renamed code 374/04 National Certificate in Industrial Clothing Design and Construction. In addition to the subjects outlined, the revised programme also offers Computer appreciation and Entrepreneurial Skills Development.

The problem noted by clothing lecturers at the Polytechnic was that graduates were unable to secure jobs in the clothing industry. This posed the question of whether the clothing curriculum was relevant to industry or not. Information gathered from the Head of Department for Clothing at the Polytechnic provided statistics to support the problem noted. The statistics gathered just before the study was conducted showed that from an intake of 31 students, 18 (58%) were teaching Fashion and Fabrics in secondary schools, 12 (39%) were self-employed in the business of making clothes and 1 (3%) was in other areas not related to clothing. The same trend was noted for the other earlier intakes.

AIMS AND OBJECTIVES OF THE STUDY

The study aimed at examining the relevance of the National Certificate in Industrial Clothing Design and Construction to the clothing industry. Specifically, the research sought to examine whether the aims, objectives and content of the clothing curriculum equipped students with the relevant skills and competences for the clothing industry

CONCEPTUAL FRAMEWORK:

CURRICULUM

Curriculum refers to a structured plan of intended learning outcomes underpinning knowledge, skills, behaviour and associated learning experiences (Doll, 1992; Nkomo, 1995). Cronbleth (1992) defines curriculum as answering three questions: What knowledge, skills and values are most worthwhile? Why are they most worthwhile? How should the young acquire them? In this research, the clothing curriculum was defined as the content of the subjects offered in the National Certificate in Industrial Clothing Design and Construction Programme and all the learning experiences, which the students undergo.

Carl (1995) refers to subject curriculum as a description of systematically selected and classified aims, objectives, content, teaching and learning experience and evaluation, for a subject. A subject curriculum looks at a particular subject for the whole programme. The current Industrial Pattern Techniques subject covers the aims, objectives, content, teaching, learning experiences and evaluation for the National Certificate, Diploma and Higher National Diploma levels.

RELEVANCE OF A CURRICULUM

Relevance is important to all curriculum planners and implementers, including those in the clothing field. The industrial clothing curriculum should be of utility value to the Clothing industry (Shah, 2010). For relevance, the clothing curriculum should meet expectations of industry (Simons, 2014). There is need for contextualisation of the teaching and learning of the clothing curriculum for relevance to industry (Fletcher, Djajalaksana, & Eison, 2012). Dewey in the Central African Correspondence College (CACC) Study Module (2002), and Gunther, Estes and Schwab (1999) are of the view that for curriculum to be relevant, it should address the needs of the learner, societal purpose of schooling and subject matter. The curriculum should be relevant to the society into which the individual should fit, with vocational goals being prepared for an occupation (Boyd, 1979; Peresu & Nhundu, 1999; Shah, 2010). The National Certificate in Industrial Clothing Design and Construction curriculum should be relevant to the clothing industry. As module 13 (2000) states, curriculum should include knowledge which is applicable to the sector which uses it.

Theorising on curriculum usually centres on the needs of society, the learner, learning content, teaching and learning activities and desired learning outcomes (Schubert, 1987). According to the CACC Study Module (2002), these considerations bring about the five essential components of curriculum design namely: 1) situation analysis, 2) aims and objectives, 3) guidelines on teaching and learning opportunities, 4) learning content and 5) evaluation. For relevance, the clothing curriculum should take into account the context, the total situation that incorporates the learner, industry, personnel, college facilities and subject matter.

CURRICULUM MODELS

Carl (1995) regards a curriculum design as the systematic and effective planning action, which brings together the essential components of the curriculum. According to Vermeulen (1998), different components of the curriculum are organised using models. There are different types of curriculum models, such as those propounded by Tyler, Wheeler, Taba, Nichole, Fraser and Killen, among others (CACC Study Module, 2002).

Two models selected to illustrate the organisation of curriculum components are Fraser's and Killen's. Fraser's model is considered as a traditional model (Fraser et al., 1993). The model places emphasis on situational analysis, aims and objectives, guidelines on teaching and learning opportunities, learning content and evaluation.

Situation analysis interrelates with other components and addresses the question of who is in the situation (Vermeulen, 1997). The situation constitutes the learners, society, learning content and institutions to which curriculum relates. The aims usually refer to the specific knowledge, skills and attitudes the curriculum aims at. Vermeulen (1997) points out that learning content should correlate with a specific society, its technology, the didactic environment, availability of funds and workshop support services for it to be relevant. Relevance of the clothing curriculum can only be realised through an appropriate didactic environment by the provision of adequate teaching and learning resources and appropriate personnel (Gwarinda, 2000; Puyate, 2004, 2008; Teaching Home Economics, 2013). In Nigeria, inadequate funding has been found to weaken technical education (Momoh, 2012). The relevance of the industrial Clothing curriculum may be affected by lack of funding since technical subjects are capital intensive (Gudyanga, 2014).

In Fraser's model, situation analysis interrelates with other components and addresses the question of who is in the situation (Vermeulen, 1997). The situation constitutes the learners, society, learning content and institutions to which curriculum relates. The aims provide direction of intent of the educational process (Ofei, 2011). The clothing curriculum should relate to the clothing industry. Vermeulen (1997) points out that learning content should correlate with a specific society, its technology, the didactic environment, availability of funds and workshop support services for it to be relevant. Teaching and learning experiences involve interaction between the learner and learning content.

The second model is that of Killen's outcomes based model of curriculum design.

In Killen's outcomes based model, the outcomes have prominence as they influence and affect selection of content, instruction method, assessment, placement and advancement. Outcomes based education focuses on desired results (Gouws, 2007).

When comparing the Killen and Fraser's models, there is some interdependence in the components of Fraser's model, no part is given prominence. In Killen's model, outcomes have prominence as they affect and influence the other parts.

SUGGESTED MODEL FOR THE CLOTHING CURRICULUM

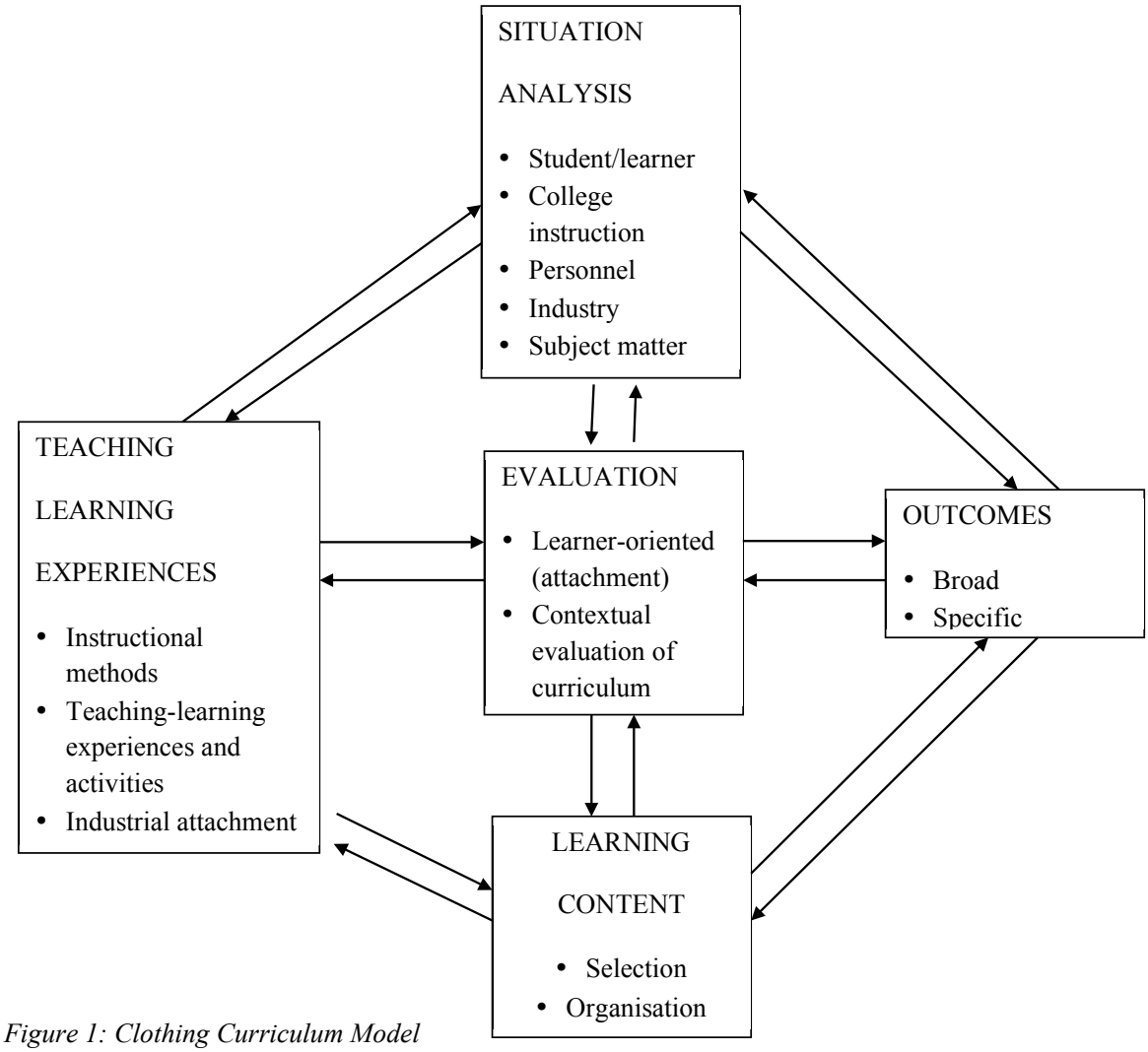


Figure 1: Clothing Curriculum Model
Source: Author 2018

The model above, which is the researchers' own work, has five parts, which are interactive. The total situation is analysed to establish the needs of students, the clothing industry and subject matter. Outcomes are formulated to encompass the whole programme (broad outcomes) and the specific outcomes relate to the different subject areas for example Industrial Sewing Techniques. The other components influence the selection and organisation of content, teaching and learning situation.

INVOLVEMENT OF STAKEHOLDERS IN CURRICULUM DESIGN AND IMPLEMENTATION

As a measure of providing relevant curriculum, there is need for stakeholder involvement when curriculum is designed and implemented. Interest groups like industry influence curriculum and for this reason, it is important to develop a partnership with them for provision of relevant curriculum (Burkhill & Eaton, 2011). A link between polytechnics and industry is important as the stakeholders may assist in provision of material support and relevant content, which may be included in the programmes (Rose, 2003; Ngwenya, 2010; Bull, 2011). Calloids and Hallocks (1980), Dale (1989), UNESCO (1993; 1999) all are of the view that curriculum needs to be relevant to the interested groups like commerce and industry. Education should have a close relationship with the world of work (Boyd, 1979; Lauglo, 1983; Chowdry & Sudha Rao, 1992; Matseke, 1997). Frantz (1997) points out that education plays an important role in the preparation of a workforce with the right qualification. This applies to the Polytechnic's Clothing Curriculum, (the focus of the present study), which also has to relate to the needs of the clothing industry.

Barlow (1974) suggests use of the advisory committee, which provides a structure through which representatives of business and industry are involved and keep vocational education attuned to labour force needs. Roger (1985) also suggests that good contacts in industry help the educator place graduates in industry and structure programme to suit industry. The Polytechnic's Clothing Department used to have an advisory committee. This committee assisted in the procurement of industrial machinery, attachment of students, curriculum review, among other responsibilities. However, this was phased out due to financial constraints. The Polytechnic could not afford to pay the sitting allowances.

Involving stakeholders, helps provide a relevant curriculum (Tan & Venables, 2010; Vollmers, Rattiff & Hoge: http://sbaer.uca.ed/research /acme/2001/46.pdf). This would avoid what Roger (1988) refers to as a mismatch between student capacities and requirements of the employers. Stakeholder involvement would also avoid a situation put forward by Mandebvu (1996) where his study established that employers preferred to train their own employees because skills learnt in school were incompatible with requirements of industry. Burt (1987) says the number of graduates who find jobs in the field they have been trained for measures the success of a technical programme. The Polytechnic under the study falls far short in this area because only a small percentage of graduates join the clothing industry.

METHODOLOGY:

Design

The qualitative approach was used in the study. Qualitative research is said to involve an interpretive, naturalistic approach to subject matter (McMillan & Schumacher, 2010; Marshall, 1995). A case study design was used (Cohen, Manion & Morrison, 2011).

A case study is a type of qualitative research in which a researcher explores a single entity or phenomenon bounded by time and activity and collects detailed data using a variety of data collection instruments (Leedy & Ormrod, 2005; Hancock & Algozzine, 2006; DeVos, Strydom, Fouche & Deport, 2012).

A case study of one Polytechnic was conducted. Borg Gall and Gall (1997), Leedy and Ormrod (2005) and McMillan and Schumacher (2010) support the study of a particular case. They say qualitative research is based on the assumption that each individual in each setting is unique. A case study was the best research design for studying the relevance of the Industrial Clothing Design and construction curriculum as it helped to provide a detailed description of the phenomenon.

SAMPLE

The population comprised students, lecturers and production managers. The clothing lecturers were selected, as they were responsible for the interpretation and implementation of the curriculum. The National Certificate students were selected as they already had the contact session at college and were on attachment in industry. These were second year students and were better placed to judge whether skills gained at college were relevant to industry. The production managers in the clothing industry were chosen as they were considered to be in a better position to assess if students were adequately prepared for industry.

A sample of 11 participants was drawn using purposive and convenience sampling (Cohen, et. al., 2011; Johnson, & Christensen, 2012). Peshkin in Leedy and Ormrod (2005) and Cohen and Manion (1994) say qualitative researchers select participants purposively to gain understanding of the complex phenomenon in question. Three (3) lecturers who participated in the study were purposively selected basing on those lecturing in subjects essential in the production line. The convenience sampling was used to select 4 second year students and 4 production managers. The criterion used was closeness of factories to minimise on time and financial costs. Marshall and Rossman (2011) say this form of sampling is planned around practical issues such as costs and researcher's comfort.

INSTRUMENTS

The data were collected through interviews, observation, document analysis and informal conversation. Making use of several methods of data collection is a good example of triangulation (Borg, Gall & Gall, 1993; Neuman, 2000; Chisaka & Vakalisa, 2003; Leedy & Ormrod 2005).

INTERVIEW

The researchers used the interview as the primary method of data collection. It was used because it is a direct method of gathering data on a person's experience, attitudes and interests (Smith, 1995). The interview also accommodated all types of questions and extensive probes to get more information and clarification on issues (McMillan & Schumacher, 1989).

The non-scheduled structured interview was also used to gather data. This type of interview was chosen as it allows participants to express their views broadly on certain issues by commenting widely on defined issues (Smith, 1995; Cohen, et. al., 2011). In this case, participants expressed their views on the relevance of the clothing curriculum to industry. The interview contained precise questions. It made provision for alternative or sub-questions depending on answers given. Industry personnel, lecturers and second year students were interviewed. The interview was to find out the views and attitudes of the participants towards the relevance of the clothing curriculum to industry. This was in relation to the skills and competences developed in students as they relate to industry.

DOCUMENT ANALYSIS

Analysing documents is a way of generating qualitative data from a written, printed or recorded source to answer research questions (Lincoln & Guba, 1985; Punch, 2009; Creswell, 2010). Documents studied were the Regulations and Syllabi. The documents provided information on the documented intended Curriculum for National Certificate Industrial Clothing Design and construction. The researchers, production managers and the lecturers studied the syllabi documents to assess relevance of contents to the needs of the industry. In addition, the researchers looked at industrial attachment logbooks to assess the performance of students in the various departments.

OBSERVATION

The other procedure used was observation. Marshall and Rossman (2011) say observation entails the systematic description of events, behaviours and artefacts in the social setting selected for study as seen by the researcher. Non-participant observation was used. The researchers observed the activities and procedures occurring in the various departments in the clothing industries. These were compared with those suggested in the syllabus to determine whether the syllabus furnished students with relevant skills.

PROCEDURE

The study was conducted at a Polytechnic's clothing department and clothing industry factories in Harare where the Polytechnic students were attached. This was meant to provide a setting for determining the relevance of the clothing curriculum to the clothing industry.

A visitation schedule was prepared for the visits to the clothing industries. The visitation schedule was made up of specific arrangements to see the production managers, students, factory facilities, equipment and the industrial attachment logbooks. The industrial attachment visits covered a period of five months. The researchers spent approximately four hours at each factory, making four visits per factory.

The first visit was a familiarisation visit. The second visit involved an analysis of the contents of the industrial attachment logbook and student interviews. The production managers were given the syllabuses to study in preparation for the interview for the next visit. The third and fourth visits focused on further examination of the logbook, students and production managers' interviews.

In order to collect data from lecturers, it was necessary to schedule interviews. One interview was conducted per lecturer covering one hour to one and half hours. The syllabuses for Garment Design, Sewing Techniques and Pattern Techniques were analysed during the interview.

DATA ANALYSIS

The data collected from interviews, observation and logbook analysis were presented in descriptive form. Recurring themes were identified from data and were used as basis for data presentation, analysis and discussion.

FINDINGS AND DISCUSSION

The findings and discussion focused on the themes, which emerged from the research. The recurring themes were:

- Relevance of syllabus aims, objectives and content.
- Stakeholders' involvement in curriculum design.
- Employment in Clothing Industry.

RELEVANCE OF THE SYLLABUS AIMS, OBJECTIVES AND CONTENT

From syllabus analysis and interviews conducted, the evidence produced was that the aims, objectives and content of the programme support acquisition of relevant basic skills for clothing construction. This ensures that the national certificate industrial clothing curriculum is of utility value (Shah, 2010). This situation reflects Chowdry and Sudha Rao's (1992) view that the main objective of vocational education is to provide requisite skills to contribute to the economic development of the country. The main aim of the programme is to develop artisans with knowledge, skills and attitudes required in the clothing industry (Higher Education Examinations Council Programme Regulations, 2005). This shows that the programme was designed to meet the requirements of industry. Cronbleth (1992) is of the view that curriculum should answer the question on what knowledge, skills and values are most worthwhile and why. The findings from the production managers' interview indicated that the programme furnished students with relevant skills and competences for the production of clothes. This was echoed by one Production Manager who said, *"The programme is relevant for National Certificate, it gives students basic skills for the Production of clothes".*

Lecturers from the various subject areas constituting the whole programme revealed that the programme was relevant for the acquisition of basic skills in industry. This is reflected in the following statement: ***"****The programme itself is relevant as it exposes students to relevant skills and competences for production of clothes".* Acquisition of basic skills and competences helps the graduate to be able to make clothing in the industry. This is in line with Boyd (1979), Peresu and Nhundu (1999) and Module 13 (2000) that the individual should fit into the occupation being prepared for.

It was revealed that the programme furnishes the students with skills and competences in using industrial machines in the construction of men's wear, children's wear and casual wear. The programme also exposed students to relevant techniques in industrial pattern making, sewing and design. Gunther, et al. (1999) indicate that the curriculum should also adequately cover the content of the subject. From the student interview, it was apparent that the programme furnished the students with relevant skills and competences in the construction of skirts, blouses/shirts, dresses and trousers. Students did not have problems in the production line. One of the students said, ***"****The programme is adequate, it covers all that is done at industry in different departments e.g. pattern making, cutting room, assembly line".* The findings show that the subject matter was adequately addressed as the programme exposes students to processes used in clothing production.

The findings showed that the programme aims, objectives and content furnished students with relevant skills and competences for the clothing industry. This is in line with Lauglo's (1993) view that if education is properly organised, it should be centred on the workplace. Students should be furnished with knowledge and skills applicable at the workplace (Simons, 2014). By being able to operate and maintain machines, college graduates would successfully operate in industry. The acquisition of different techniques in designing, pattern making and factory management helped students to effectively operate in the production of a variety of clothing for different uses.

The findings further established that some of the intended aims and objectives of the programme were not met due to inadequate equipment. This was the case in acquisition of skills in computer aided design and pattern making. For effective learning, Matseke (1997) says Polytechnics should be equipped like industry. The lecturers' interview showed that lack of some equipment was a limiting factor in the implementation of the curriculum as shown by the following statement, *"Lack of resources like computers for computer aided design makes implementation of the curriculum difficult. At college students are only exposed to manual designing, pattern making and grading."*

Students also expressed that skill acquisition in some cases was negatively affected by lack of certain equipment at college. One of the students interviewed said, *"We are not prepared to use computers at college as all grading and marker making is done by hand. We come across computer aided pattern making for the first time in industry"*. The absence of Computer Aided Design (CAD)/Computer Aided Manufacture (CAM) at the polytechnic has a negative impact on acquisition of computer skills in designing and pattern making. CACC Study Guide (2002) says the situation where curriculum is implemented should be analysed for relevance. Lack of a relevant didactic environment can affect the relevance of curriculum (Puyate, 2004; 2008; Gwarinda, 2001). Technology, availability of funds and workshop support services should be considered for relevance (Vermaulen, 1997). Lack of relevant support services affects acquisition of skills and competences.

EMPLOYMENT IN THE CLOTHING INDUSTRY

The findings showed that although students gained basic skills and competences for the production processes in the clothing industry, the majority of graduates did not find employment in the clothing industry. This is quite worrying. The number of graduates who join the field they are being prepared for (Burts, 1997; Mandebvu, 1996; Roger, 1988) reflects the success of a programme.

The lecturers and production managers expressed that most of the jobs in industry were not challenging enough for college graduates. The views of lecturers and production managers were demonstrated by a production manager who stated that, *"Most of the jobs available are too low for students. Students cannot work as machinists."* In these jobs, one is expected to carry out the same operation throughout the day and every day, for example, sewing on buttons. As one production manager pointed out, *"We employ people with dress making qualifications for machinists. A machinist job does not require someone with a college diploma."*

The general sentiments expressed by both the lecturers and production managers were that the college graduates were overqualified for machinist jobs. Although the clothing

graduates acquired basic skills, these skills did not make them employable in the clothing industry. They were over qualified for machinist jobs (Vermeulen, 1997, 1998). The curriculum does not adequately address or focus on the result (Gouws, 2007). For relevance, clothing graduates should be absorbed in the clothing industry.

The general view by production managers and lecturers was that polytechnic graduates were better off in management, designing, pattern making, marketing and merchandising. However, these jobs are few and usually go to people trained within the company. With reference to managerial jobs, the views expressed by production managers were that polytechnic graduates lacked specialisation and experience in management as reflected in the following statements, *"For management, management qualification is required. Experience is also considered---To work in management, students need practical training at college and in industry itself on managerial duties and responsibilities---They need to learn to handle people."* These sentiments indicate that education plays a crucial role in preparing a workforce with the right qualification (Frantz, 1997).

The production managers recommended that students should specialise in management at National Diploma level since they will gain the basic skills on how the production processes in the clothing industry are carried out at National Certificate level. This view was also supported by lecturers who said, *"At National Diploma level students should specialise in management, marketing and merchandising, design and pattern making. These areas are quite challenging and well paying in industry."* If these observations were implemented, this would facilitate absorption of clothing graduates into challenging well paying jobs.

Most of the students did not find working in the clothing industry attractive. They cited poor working conditions and remuneration as factors, which made industry unattractive. One participant pointed out, *"When I have completed training I would like to work as a teacher. Teachers are better paid and rest during holidays. At industry people work long hours, for little pay."* If furnished with the relevant skills and competences, students would be employed in management upon completion.

The findings indicate that most jobs in the clothing industry are routine machinist jobs not requiring college graduates.

STAKEHOLDER INVOLVEMENT IN CURRICULUM DESIGN

Findings from the production managers revealed that, out of the four companies in the study, only one had been involved in the designing of the clothing curriculum as one production manager indicated, *"We have not been involved in the designing of the programmes. This is the first time we have been asked to say anything about the programme."* Another participant indicated that, *"It is important for us to be involved simply because we know what we want students to learn so that they can fit well in industry."* The general sentiments expressed by the participants indicate that it is important for interested groups to be involved in curriculum design as they know the skills and competences required by students for them to fit in the relevant industry (Rose, 2003; Zengeya, 2009; Tan & Venables, 2010; Ngwenya, 2010; Bull, 2011).

Lecturers also supported the involvement of stakeholders in curriculum design. This is reflected in the following statement from one participant: *"Industrialists are better placed to know the skills and competences required at the*

workplace. They are the ones on the ground so they need to be involved in the designing of the curriculum. This would produce relevant programmes."

Involvement of stakeholders in curriculum design is important to make curriculum compatible with industry, bringing about relevance. As Matseke (1997) and Ngwenya (2010) point out, curriculum reflects the content of the workplace the students are being prepared for. This shows that, it is logical for training to respond to the needs of commerce and industry (Dale, 1989). Since students are prepared to fit in industry, the results of this study indicate that there is need to involve the clothing industry when developing the curriculum. This would ensure that skills learnt at college are compatible with industry (Mandebvu, 1996). Advisory committees or good contacts in industry (Roger, 1985) could involve stakeholders. In the model for curriculum development suggested in this research, the clothing industry is part of the total situation under situational analysis.

RECOMMENDATIONS

The study recommends that:

- For effective implementation of the curriculum, relevant facilities should be provided at the Polytechnics. There is need for the Ministry of Higher and Tertiary Education to provide adequate funding to Polytechnics.

- Industry as a stakeholder should be involved in curriculum development so that appropriate programmes are designed for all levels in the Polytechnic.

- At National Diploma level, Clothing students should specialise in management, merchandising and marketing, pattern making and design to be employable in the clothing industry.

Further studies should be conducted to establish whether specialisation in management, merchandising and marketing, design and pattern making at Diploma level would make the clothing curriculum relevant to industry.

CONCLUSION

Findings from this study, suggest that it may be concluded that the National Certificate in Industrial Clothing Design and Construction furnishes students with basic skills and competences for the clothing construction. Although they acquired basic skills, it was observed that the competences were not relevant for placement in the clothing industry. This is so because from the findings, most of the polytechnic clothing graduates did not join the clothing industry. The study has shown that most jobs in the clothing industry are not challenging for college graduates. Since the polytechnic graduate is expected to be absorbed in the clothing industry, stakeholder involvement is critical to ensure that relevant curriculum is designed.

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