

Full Length Research Paper

Attitude as a factor in men's and women's participation in technical education in Botswana: Implications for counseling education

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Accepted 13 August, 2009

The purpose of this paper is to provide an overview of the importance of attitude as a factor that reinforces and disproportionately affects boys and girls on one hand, and men and women on the other. The main argument posed in the paper is that attitudes are an important factor in the way men and women are disproportionately participate and are affected by access to technical training and work based learning opportunities. The camp of transformation and critical feminist thinkers who view part of the overall mission of adult education as critical feminist pedagogy call for the need for an inclusive technical training for both men and women, as part of the global initiative to ensure gender equality in access to technical education. Gender research and literature that inform this paper, and the empirical study conducted under the auspices of Botswana training authority metaphorically conceive technical training as a male province while women have remained relatively invisible, partly due to unfavorable attitudes, in training and employment opportunities in the technical sector. The post independence Botswana as a nation has worked towards a reversal of this trend by creating the necessary housing infrastructure, and striving to gradually reshape the trend by mainstreaming gender on a pilot basis in some government ministries. As a nation, Botswana can take pride in mainstreaming gender as a step in the right direction towards redressing gender inequality in technical training. However, a lot can be achieved through addressing negative attitudes that men are the most suited for technical training and employment than women.

Key words: Technical education, attitudes, technical training, gender

INTRODUCTION

Africa has a multiplicity of challenges problems that include illiteracy, poverty, inadequate technology, graduate unemployment, lack of skilled personnel, autocratic governments, skewed budget allocations in favor of the military, and gender-based inequalities in access to technical training and employment. This paper argues that African countries have to face the challenge of attitudes and gender-based inequalities in access to technical training and employment. Since the early 1980s, Third World Sociologists including gender activists have formed interest groups to fight against gender-based discrimination in all fronts especially in Southern Africa. In Botswana, the Government of Botswana adopted a comprehensive multi-sectoral approach for all levels in the country to mainstream gender and curb inequalities because they disproportionately affect women and men. African gender scholarship involves, among other, pro-

ducing gender disaggregated data on pertinent issues such as access to universal and technical education. Despite these commendable efforts, gender-inequality in the technical sector is still prevalent as a common feature of societies in Southern Africa.

The author uses gendered attitudes as a lens for analyzing access to technical training and employment opportunities in the usually male dominated technical sector. A gendered view of attitudes is very crucial as it illuminates not only numbers but social issues on who is disproportionately affected to access to training and employment.

A gendered view of attitudes towards technical training and employment

This paper illuminates a gendered view of technical train-

ing and employment in Botswana as dominated by attitude as an important factor which has reinforced the notion that the sector is more suited for males than females. Gender is a socio-culturally constructed notion of the roles of men and women in any society. Because gender roles are socially constructed in both developing and developed countries, and not natural, they can be changed. Gender is an analytical tool, a lens and a set of social relationships defining people as masculine or feminine (Mbilinyi, 1996; Mannathoko, 1992). Gender is about the psychological, social, and cultural differences between men and women in access to technical training and access to work based learning institutions. It is a conversion from biological basis to behavioral differences. Sex is biological while gender is a social construct. Gender is a lens commonly used by different streams of feminist actors who would like to bridge gender gaps by launching a political struggle against women's and men's oppression and subordination by either improving the existing systems or structural changes. Gender- inequality in access to technical training and employment in the technical sector is the highest descriptor of how the technical sector is a male province. However, as more and more Third World feminist actors have emerged due to the impact of globalisation on the gender movement, technical training as a male province is subjected to a lot of scrutiny and criticism as feminist actors continue to question the relevance of negative attitudes in modern Botswana.

Why a focus on attitude?

Attitudes and perceptions as psycho-social aspects of how men and women gauge themselves and their mind-sets towards the technical sector are important considerations to gauge and redress for both men and women to gain equal opportunities in pursuing technical careers and employment opportunities based on acquisition of technical skills.

It is important to focus on attitudes and perceptions so that they do not serve as deterrents to bridging gender gaps in the VT sector.

Women have not been able to acquire technical skills to give them an opportunity to compete for jobs in the technical sector as compared to their male counterparts. Women have therefore remained invisible in the technical sector both as trainees and as trainers.

Part of the reason for the invisibility of women in the technical sector is negative attitudes making women think they can not make it in the technical sector, negative attitudes that affect career choice, aspirations towards reinforcing already existent stereotypes embedded in career choice, attitudes and preferences influenced by gender issues.

Instructors' male centric attitudes and preferences towards men rather than women as trainees, technical career choice, and subjects taught and patterns of access

and attrition also indicate skewed balance of power making it difficult for women to survive the odds of the male dominated technical sector.

Based on the reasons above, the need to change negative attitudes into positive ones can not be overemphasized, if women are expected to penetrate the male dominated technical sector.

METHODOLOGY

Based on the Botswana Training Authority (BOTA) mixed methodology (qualitative and quantitative) study of 2005/2006 on Gender Analysis of Perceptions and Attitudes of Learners and Personnel of Vocational Training and Work-Based Learning in Botswana, this paper is based on a micro and micro level analysis of attitudes a factor in men's and women's participation, which result in skewed employment opportunities in the technical sector.

Two broad research questions for staff and learners in vocational institutions guided the study:-

- a) What is your perception of technical training regarding inclusion of male and females?
- b) What is your attitude towards achieving gender equality in technical training?

This section of the proposal describes the procedures used at the different phases and stages of the study. The two major strategies of data gathering were:

- a) Unstructured and open-ended interviews of stakeholders to assess present attitudes of stakeholders on issues pertaining to gender and vocational training/work-based learning, and
- b) Structured interviews and/or use of questionnaires to obtain data on enrolment, retention, achievement and attrition in work-based learning and use the information available on vocational training to emphasize gender disparities.

The study used a combination of quantitative and qualitative research methodologies to collect and analyze data.

Qualitative design

The focus group discussion and key informants interviews were the main techniques used for gathering qualitative data. The description of each technique as applied in this study is given below.

Focus group interviews

Some of the research questions needing answers on issues pertaining to gender and vocational training and work-based learning are quite broad focusing on answers to questions about what is happening in the training environment with regard to gender equality; what the happenings mean to the people involved in VT and work-based learning; what people have to know about gender in order to be able to do what should be done in the vocational training and work-based settings; how does what is happening in the vocational training and work-based learning environment relate to what is happening in the wider social context of society; and how does what is happening in the vocational training and work-based learning environment differ from that found in other places and times. Erickson, Florio and Buschman (1980) suggest that qualitative methods are best at seeking answers to these kinds of questions. The consultants therefore adopted the focus group interviews to gather data that will answer these questions.

The focus group discussions were held with staff of work-based learning organisations, including administrators, supervisors, instructors of work-based learners and work-based learners. The focus group discussions helped in giving a broader review of work-based learning in Botswana. It was initially the intention of the consultants to invite members of focus groups to attend a day consultative workshop. However, the workshop option could not materialize because of the tight schedules of most stakeholders who could not avail themselves during the short time this was expected to be achieved. Instead stakeholders were interviewed in smaller groups of 2 - 5 depending on their availability in their work places. The goal of focus group discussion was to look at the broader context of gender issues in relation to vocational training and work-based learning programmes.

Key informants interviews

The key informant interviews focused on heads of institutions and administrators. Where these key informants were available, they were also included in the focus group discussions. The two techniques in effect complement each other by confirming or disconfirming information obtained in either situation.

Quantitative design

Based on the information need identified from focus group discussions, the quantitative survey focused on a limited set of well-measurable variables. In this phase of the assignment, the consultants would have had a hunch probably based on theory, prior research, and/or personal observation.

Unlike the focus group discussions, the short-answer interviews adopted the quantitative technique to obtaining concrete and quantifiable evidence relating to the enrolment, retention, achievement, attrition in work-based learning, attitudes of stakeholders about issues pertaining to gender and vocational training and work-based learning, gender programmes in the work-based learning, the receptivity of work-based learning programmes, type and level of support needed to implement programmes and the readiness of stakeholders for effective implementation and utilization of work-based gender programmes. This was achieved through the use of structured interview guides.

Research setting and population

The research setting for this study was Gaborone. Gaborone was chosen because most of the institutions that provide work-based learning are in Gaborone. Given the limited timeframe to complete the study, it was agreed with the sponsors of the study to concentrate on the institutions in Gaborone. Three categories of respondents were identified within each institution providing work based learning. One category consisted of members of the administration from whom information about policies in use in the institution was sought. The second category of respondents was institutional staff from the different departments or trades regarded as relevant to the study. The third category comprised of students enrolled in the departments or trades selected for the study. With regard to the administrative group the head of the institution or his/her representative was selected. In the category of instructional staff no more than two members were selected from each relevant department or trade. Where a female member of staff was available she was automatically included in the sample.

Sampling and sample selection

The sample included 10 work-based institutions in Botswana. Since

the number was relatively small, all the work-based institutions were included in the study sample.

Development of research instrument

Three interview guides were developed for the three categories of respondents. The interview guide for administrative staff solicited information on patterns of enrolment (that is numbers enrolled by gender, enrolment by trade or department), applications patterns, application processing criteria, number of admissions offered by department, number of students accepting admission, patterns of attrition, reasons for withdrawal, accommodation and feeding arrangements, policies on sexual harassment and pregnancy. The interview guide for institutional staff sought demographic information about the instructors, their participation in professional organizations, and their attitudes towards issues of gender equality in VT and WBL. The student interview guide sought information on the perceptions of students about their performance, previous training, level of education before entering present work-based institution, the assessment procedures, how they found out about the institution, reasons for enrolling in a particular trade or department, where they live, their attitudes toward work and aspirations after leaving work-based learning institution.

Reliability of research instrument

The degree to which the findings from a survey of VT/work-based learning can be generalized to the entire Botswana will depend partly on how representative its sample is. One way of testing for representation is to compare the distributions of variable characteristics of the sample with those of previous national census data. Detailed data on work-based learning from previous censuses in Botswana were, however, not available at the time of this study, and therefore it was not possible to make explicit comparison of survey outcome to most recent census data to determine how closely the two data match each other on variables. Consequently, an alternative testing of reliability of data based on re-interview of the sample was used for the quantitative survey. This involved interviewing a selected number of respondents in each sample category (that is usually between 5 - 15 respondents) and re-interviewing the same people after two or three weeks. The responses of the first and second interviews were then compared to determine disparities between the two. In this study, the responses from the two sets of interviews were fairly consistent and therefore provided cause to consider the instrument as reliable.

Validity of research instrument

To the extent that the measuring instruments designed for this study will actually measure what they are purported to measure, they would be considered valid. Both face and content validity will be used to determine the validity of the questions and measures in each of the instruments. A critical evaluation of the research instruments by experienced professionals representing Educational Development Network (Pty) Limited, BOTA, and BOCCIM, was made to objectively compare question items with Terms of Reference for the study, and irrelevant items replaced with new ones or modified as the case may be. Such evaluations were done in group forums involving all relevant stakeholders.

Data collection

All the data for this study were collected during face-to-face interviews with respondents. Data collection started on 24th January

and ended on 14th February, 2005. All interviews were held in the offices of the selected respondents. Office interviews also made it possible for the researchers to make close estimates of variables such as personnel needs, which respondents are likely to overstate. All respondents revisited if they were not found in their offices on the first visit. Follow-up interviews were also made to obtain missing and incomplete information.

Data analysis

Both quantitative and qualitative analysis procedures were used in making sense of the data collected. The SPSS statistical programme was used for quantitative data analysis to determine frequency counts, proportions and means. All analysis of quantitative variables was done by cross tabulated variables by gender of the respondents. The presentation of the data was only descriptive. With regard to qualitative analysis, common themes and concerns described by respondents were identified by going through all interview guides.

Data management and quality assurance

The head of the research team was responsible for the daily management of the survey. Apart from his close supervision of other consultants, the Research Team Leader met regularly with other members of the research team to discuss problems and progress. On a daily basis, data collection forms were checked for completeness of data, obvious errors and inconsistencies. Research assistants were constantly reminded to avoid such mistakes in their interviews. Data were coded and entered into the Statistical Package for the Social Sciences (SPSS) programme by a trained and skilled person. Quality control procedures were followed each time new batches of interview guides were received from the field. Routine checking were done to correct problems with regard to type of subgroup or category of respondents providing the information, responses that were not required, and information about respondents' institution and designation, if these were missing.

A pre-testing of the data collection instruments preceded all data collection exercises. The process entailed testing the internal stability of the interview guides and the feasibility of undertaking the full study with it by conducting a trial run. This was achieved by administering the interview guides to a selected group of respondents with characteristics similar to those of the ultimate respondents to be interviewed and involved interviewing between 10 and 15 respondents in a couple of work-based learning institutions. Once an individual was interviewed in the pre-test phase, he or she exempted in the implementation phase of the study. The pre-testing was designed to help the consultants identify weaknesses (e.g. interview guide too long, questions not very clear) in the interview guides so that necessary modifications could be made before their final administration.

During the study, the research posed specific quantitative questions to generate both qualitative and quantitative data. This paper is based on an analysis of quantitative data collected from learners and instructors in the technical institutions within and outside Gaborone. Questions posed focused on factors influencing career choice by gender, aspirations by gender, factors affecting the choice of technical training, preferences of trainee instructor's instructors' attitude towards gender equality, instructors' perceptions of male and female trainees, distribution of teachers and students by subjects taught, and patterns of access and attrition. Specific quantitative data sets used for informing this paper were as follows:-

(a) Percent distribution of respondents according to other factors influencing career choice by gender.

- (b) Percent distribution of respondents according to their aspirations by gender
- (c) Instructors' attitudes towards gender
- (d) Instructors perceptions of male and female trainees
- (e) Patterns of access and attrition.

The conceptual framework and the overview of gender issues address the first major research question on a situation analysis of perceptions regarding gender issues in relation to the vocational sector.

Conceptual framework

The paper is informed by the use of gender as a lens for articulating inadequate access to technical training, negative attitudes towards inclusive technical training, and the "We Can" approach as a model selected as best practice for articulating support and maintenance of positive attitudes towards including women, where they are invisible, in technical training and subsequently followed by employment in the technical field. Applied to the technical sector, "We can" is often identified with the following:-

- (a) Raising awareness on the issue of gender inequality and gender bias against women through a host of conventional and unconventional methods.
- (b) Making covert and overt discrimination against women training in the technical sector a visible issue in the public domain.
- (c) Spreading two messages consistently so that women and girls are not less capable than men and boys; and that to downplay the capacity of women as trainees in the technical sector is unacceptable.
- (d) Using change makers to challenge dominant stereotypes, male behavior patterns and gender hierarchies and inequalities and also to provide 11 alternative views of masculinity and demonstrate more equal role models, behaviors and values.
- (e) Engaging the community through mass mobilization programmes to change norms and practices that discriminate and perpetrate the invisibility of women in the technical sector.
- (f) Preparing and facilitating people to speak out, take a stand and build a momentum for the campaign.
- (g) Encourage girls and women interested in the technical sector to defend their interests and rights to access the male dominated sector.
- (h) Gathering support amongst various groups within the government of Botswana ministries, the civil society groups, the private sector and parastatal organizations.
- (i) Strengthening synergy and cooperation between the technical sector and various organizations that are key actors in attitudinal change.
- (j) Bringing together diverse local, national, regional and international efforts working towards attitudinal change in technical training and employment.

The "We can" approach is very relevant for raising awareness on the abilities of women as valuable group that should not be left out in technical training. Experiences from Asian and other countries suggest that adopting a "We can" approach to attitudinal change in attitudes towards a gender balance technical education is characterised by the following principles:-

- (a) A strong belief that a change in societal attitudes and socio-cultural practices is needed and is possible.
- (b) A huge national intervention that should reach a large number of people through a mass campaign through all forms of available media.
- (c) That there is a need for a nation-wide public mobilization for gender awareness and sensitivity to both men and women as po-

tential and able trainees in technical training.

(d) There must be networks comprising individuals, community leaders for sharing experiences, the need to change, social cohesion and collective action to bring about attitudinal change.

(e) There is a need to make use of change makers who actively encourage positive attitudes and behavior towards women's interest and their abilities with a special focus on technical training.

(f) Local and national efforts are essential to bring about attitudinal change to capacitate both men and women to be key players in the technical training.

(g) At a national level, the Government of Botswana and the NGOs could work together as partners in gender sensitization and avail funding for campaigns to influence both men and women in technical training.

(h) At a local level, men and women with experiences can be mobilized to act as catalysts for attitudinal change.

RESULTS AND DISCUSSION

The interface of attitudes and perceptions on gender and technical training

- Gender norms and unequal power in sexual relations (norms of masculinity and femininity): Women are not able to fully access technical colleges because of what they think of themselves, what other people think about them and unequal power relationships at family household level that trickle down to community and national levels.

- "Women's work" and unequal care-taking responsibilities adversely affect their vulnerability to illiteracy and access to the scarce technical skills. Women are usually caregivers for all sick family members; provide emotional security due to their traditional role of nursing. This is reflected not only at family level but generate larger social, economic, and political inequalities between men and women. There are special vulnerabilities of adolescents and youth by gender. For instance, gender is taken into account and greatly influences decisions on who to educate, and what field of study the adolescent boys and girls are to pursue. Gender plays a role in sexuality and determining vulnerability and the impact of employment opportunities and workplace practices including the technical fields.

- Economic factors such as poverty and dependency are gendered problems that impact on inadequate access to technical training. Women are attracted to the already saturated administrative pool in the quest for their personal and family survival. Men on the other hand are attracted to science, technology and the technical field in general, which make them better placed to have gainful employment. The media depicts men as CEOs and women as ordinary workers or caregivers.

Gender Issues in the technical sector

Male and female participation in VT: In the past females were under represented on vocational programmes. This was often due to the fact that apprentices were

employed and then sent to colleges and so little could be done to rectify the situation. Fortunately with the introduction of the Botswana Technology Education Programme (BTEP), female participation has been increasing every year since 2000. Male domination is gradually changing.

As described in the table above, females now account for 37% of full time students and this will continue to rise as BTEP certificate levels become more widely available. The increases come as a result of applying equal opportunity and admission policies and due to a wider range of vocational programme areas now available.

As of 1989 - 2009, teachers in vocational training institutions are mainly men. Government schools and brigades in particular are mainly dominated by male as teachers. However, in hospitals the trend is such that most of the teachers are women. This depicts women's tendencies to pursue careers along the expected roles of care giving and nursing.

Gender disaggregated data report compiled by the Women's Affairs Department/UNDP (2002) on science and technology training indicates a greater number of men than women at RIPC Serowe Brigade Development Trust and across ministries where there are technical and vocational jobs. A report compiled by the National Commission on Education (1993), reaffirmed the brigades as an element of vocational training system. As of 1993, there were 26 brigades with a total enrolment of 2,128. The commission further estimated that by 1997, there would be 2,583 trainees in over 30 centers.

Gender issues are based on skewed balance of power and inequality that predispose boys, men, girls and women disproportionately in pursuing technical education and training. Gender mainstreaming is about practically and psycho-socially moving gender inequality to the centre of the agenda for programme planning and design, implementation, monitoring and evaluation. Gender equality has to be pursued through a process of main-streaming gender in the technical sector to ensure that both men and women participate in the sector to bridge gender gaps.

Engendering technical education and training depends to large extent on whether the technical sector produces the numbers of trained men and women that are not too disparate, types and qualities of graduates that can equally compete for employment. Career choice by gender determines who eventually dominates in employment figures in industry. If for instance more males than females enroll for courses in technical colleges, employment will remain a male province. Table 1 indicates that career choice by gender results in more and more men dominating the top positions in industries as they already graduate from the technical colleges in large numbers.

The tables contain data that address the second major research question which sought to establish attitudes towards gender.

Another variable is aspirations by gender inequality in terms of numbers of people pursuing vocational careers. Figure 1 suggests a large number of men than women

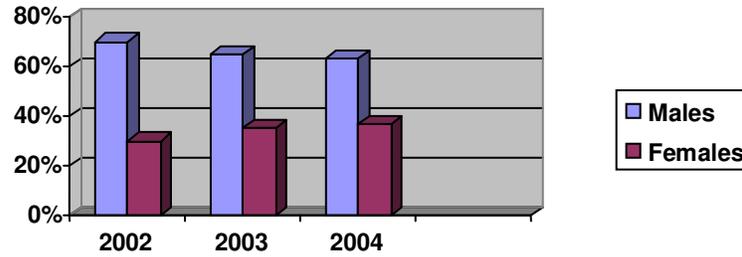


Figure 1. Male and female full time student percentages.

Table 1. Percent distribution of respondents according to other factors influencing career choice by gender.

Schools	Technical Institutions		WBL Organizations		Secondary	
	(n = 304)	(n = 286)	(n = 86)	(n = 72)	(n = 96)	(n = 86)
Other factors influencing career choice	Male	Female	Male	Female	Male	Female
Student discussed choice of career with parents	64.5	69.2	56.9	68.1	51.0	56.7
Parents supported career choice of student	63.2	36.4	87.2	45.6	64.0	31.4
Male relative persuaded student to choose career	27.6	17.8	11.6	12.5	11.1	9.2
Female relative persuaded student to choose career	3.6	19.2	12.8	9.7	2.3	3.2
Career guidance counselor persuaded student	8.2	5.9	11.6	5.6	62.9	78.2
Teacher persuaded student to choose career	9.2	4.2	5.8	8.3	5.3	7.1
Male friend persuaded student to choose career	15.8	18.9	6.9	9.7	1.1	-
Female friend persuaded student to choose career	4.9	10.1	-	1.4	-	-
Interviewer persuaded student to choose career	4.9	3.8	-	-	-	-
Others	12.8	10.1	3.5	12.5	2.3	2.1

attracted to technical colleges than at secondary school levels. With regard to final decision-making in choosing a technical career, data in Table 1 indicate that the decision to choose a technical career is also influenced by relatives, friends and school community. However, these other influences are less significant as depicted by the proportion of students reporting each it. Vocational careers over the last twenty years have attracted many people especially those who wish to join or create Industries. Some of the factors that affect the choice of a technical career among learners of vocational training, work-based learners, and students of secondary schools indicate early childhood socialization by parents. Responses to statements like 'parents have an important influence over career choice of boys and girls', 'roles played at home by boys and girls affect their career choice', and 'parent expect girls to be office workers and nurses', show that parental influence is an important factor in persuading boys and girls to choose a career.

Other factors influencing the career choice of boys and girls and even that of adult trainees in technical colleges, suggest that the majority of the respondents in all three categories of institutions said they discussed career choices with parents and a good proportion of the parents approved or supported the career choices of their children. However, there was evidence of low parental

approval or support in the case of female students as shown by 36.4, 45.6 and 31.4% of learners of technical colleges and work-based learning institutions, and secondary school students respectively. This may also be traced to the gender stereotype held by parents and beliefs that technical careers are more appropriate for boys than girls (Table 2).

Aspirations by gender are part of an important description of potential learners' attitudes towards pursuing technical careers. More males than females have greater aspirations to start their own businesses than females.

Instructors' attitudes towards gender

The same attitudinal statements given to students were responded to by instructors of work based learning institutions. The percent distribution of instructors' response to attitudinal statements indicates that instructors do not strongly believe that roles played at home by boys and girls affect their career choices. Majority of both men (56%) and women (66.6%) either disagreed or strongly disagreed with the statement suggesting such a belief. However, instructors believe that parents have influence over the career choices of boys and girls with more female instructors (75%) than male instructors (56%) either

Table 2. Percent distribution of respondents according to their aspirations by gender.

Schools	Technical Institutions		WBL Organizations		Secondary	
	(n = 304) Male	(n = 286) Female	(n = 86) Male	(n = 72) Female	(n = 96) Male	(n = 86) Female
Eventually student wants to setup own business	51.6	39.5	63.9	59.7	34.9	50.0
Eventually student want to become an instructor	9.2	13.9	6.9	9.7	3.5	1.4
Eventually students wants to be a professional	31.9	35.9	33.7	23.6	50.0	40.3
Other	5.6	6.3	5.8	4.2	15.1	22.2
Eventually student does not know what he/she wants to become	3.6	3.5	2.3	-	2.3	2.8

either agreeing or disagreeing with the statement. Though these views differ from those of learners, they possibly reflect the real experiences of performance.

Instructors did not strongly subscribe to negative attitudinal statements like 'girls are laughed at when they choose male dominated careers', and 'males feel uncomfortable working with women technicians'. However, majority of male instructors (88%) and female instructors (83.3%) feel that boys do better than girls in technical subjects. Similarly, both male (76%) and female instructors (83.3%) feel that women lack confidence to do well in technical subjects. Instructors do not believe that girls and boys have equal opportunities for access to technical training.

Instructors' perceptions of male and female trainees

A number of questions seeking to determine how the instructors perceive male and female trainees in relation to vocational education and training were responded to by instructors of work based learning. A percent distribution of instructors by their perception of trainees indicate that many of the instructors 16(43.2%) believed that the performance of male and female trainees was comparable and equal with relatively higher proportion of women instructors 6(58.3%) than men instructors 10(40.0%) saying that male and female trainees performed equally. Many male instructors 8 (32.0%) reported that men do better than women in both theory and practical. A possible explanation for this scenario is that practical work is heavy for women.

Instructors also believe that women trainees encounter a number of social and economic problems that could possibly explain their relative low performance in education and training institutions. One of these problems that featured out very prominently is the physical nature of technical trades, which 68% of male instructors and 66.6% of female instructors said was a problem for female trainees. Other problems reported by majority of male and female instructors were "trainees' preoccupation with family and social problems", "gainful employment which is a distraction for effective learning", and "attendance of evening classes" by many of the women

due to their engagement in employment or family responsibilities.

Patterns of access and attrition

Access and attrition are factors in creating opportunities for partnerships with industries. Unlike public institutions like the Brigades, Technical Colleges and schools, information about access was difficult to obtain from commercial and work based learning institutions. The data that was obtained was very scanty and could not be broken down by trades (Table 3). It also became clear during the interviews that the data provided on access were only estimates. The data estimates provided suggest that on the whole comparatively more men 6603 (58.3%) than women 4722(41.7%) applied to technical training and work-based learning institutions.

With regard to attrition and retention, the interviews with programme coordinators and heads of institutions did not reveal any significant numbers of dropouts from technical training and work-based learning institutions. Earlier on in this section, a number of problems affecting female trainees have been identified by instructors. Some of these problems such as pregnancy, financial problems, and physical nature of practical work were echoed by heads of institutions and programme coordinators as being partly responsible for non-return of trainees as well as absconding during the course of the year.

Attrition was, however, not found to be a serious problem in work-based institutions. For the small proportion of attrition that was reported, a number of possible reasons were identified as perceived by programme administrators. First some trainees discontinued with work-based learning to participate in better job offerings, to take care of family responsibilities, for low remunerations offered to work based trainees, lack of job opportunities in the area of training, and sometimes because they could not cope with work and learning at the same time.

Conclusion

A comprehensive analysis of technical training and employment suggests that women are still invisible compared

Table 3. Applicants by type of institution and by gender over a period of four years.

Institution	2001		2002		2003		2000	
	M	F	M	F	M	F	M	F
GIPS	558	942	740	1078	783	667	445	745
SPAR	-	-	-	-	20	34	28	42
BPC	500	100	500	100	500	100	500	100
BDVC	-	-	-	-	-	-	-	-
NIIT	-	-	-	-	110	65	180	98
President Hotel	-	-	-	-	27	8	12	5
KOKETSO	-	-	65	120	86	133	74	142
RIIC	-	-	-	-	15	18	22	48
RTC	-	-	-	-	-	-	48	16
CITF	-	-	-	-	525	67	675	26
MTTC	-	-	-	-	-	-	-	-
BTC	-	-	-	-	58	22	62	36
WUC	-	-	-	-	-	-	-	-
MITC	18	2	16	4	17	3	19	1
Total	1076	1044	1321	1302	2141	1117	2065	1259

to their male counterparts. Safe and non-toxic partnerships to change negative attitudes to positives ones in the technical sector are healthy for the process of gender mainstreaming to achieve gender parity in the male dominated technical sector.

Creating positive attitudes towards gender equality, whatever its form, is very important for joint generation and cross fertilization of diverse ideas on areas of gender equality. There is a need for overall mentorship, good quality conception of the tradeoffs regarding the programme planning of short-term and long term objectives, and realistic action plans. Positive attitudes would also bring about exchange of ideas and personnel, implementation, evaluation by corrective review of losses and gains, and restarting the more realistic programmes to change attitudes towards technical training.

Recommendations

Based on an analysis of the data sets and discussions above the author argues that there is a need for changing attitudes and perceptions towards technical education and training. The "We can" model can be applied to Botswana to empower men women, all stakeholders who are change agents, including instructors in the technical field to develop positive attitudes towards both men and women. A special application of the "We can" model must be applied nationally to develop positive attitudes towards including women to redress their invisibility in the technical sector.

Matching technical skills to the requirements of industries and a gender dimension to would ensure that trainees receive training in unsaturated skills where there are prospects of employment. Creating jobs to balance figures and deal with psycho-social issues behind the figures would be a step in the right direction toward changing attitudes and perceptions of technical training in

Botswana more than ever before.

Implications for psychology and counseling adult education

The study illuminated that there are gender gaps in access to VT and work-based learning which are mainly attributed to how eligible trainees perceive themselves and how they think others perceive them. Changing attitudes and perceptions is very important to attract females who may be reluctant because of the historical perceptions that vocational training is a male province.

Gender-based perceptions have implications for intensified counseling, dialogue, and provision of conducive training environments, both physical and psychological, where both men and women can benefit.

Attitudes and perceptions of technical jobs as a male province are socio-culturally constructed and can be changed through counseling and education to bridge gender gaps.

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