



Investigating the Challenges Confronting Vocational Education in Botswana and Potential Remedies: An Empirical Study

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Abstract: The importance of vocational education for improving national human capital cannot be underscored. Yet, its objective of improving the quality and quantity of human capital has yet to be fully achieved due to its shortcomings. The training system's significant challenges have yet to be determined and explored to develop appropriate interventions. This study examined the challenges bedevilling vocational education in Botswana, leading to its failure to execute its mandate fully. The paper followed a positivist paradigm whereby a survey design was adopted with the quantitative methodology used to collect data using a questionnaire administered to 61 respondents. Data was analysed using the Statistical Package for Social Sciences (SPSS), producing descriptive and inferential statistics. The study results revealed many challenges facing vocational education in Botswana, such as the lack of quality instructors and ineffective delivery, lack of finance leading to low-salaried teachers who are not motivated and lack of adequate infrastructure, among others. It is, therefore, imperative for policymakers to consider the findings of this study to develop more effective strategies for enhancing the delivery of vocational education in the country to avoid wastage of limited resources.

Key words: Vocational education, human capital, quality, employability, economic growth

1. Introduction

The concept of school-based vocational education in Botswana began in 1962 under the auspices of the Botswana Training Centre's national trade system, which operated under the Ministry of Labour (Mupimpila and Narayana, 2009). It originated as an alternative learning system for students, emphasising practical skills in craft and hands-on skills instead of the generally academic higher education pathway, which focuses more on obtaining numeracy and literacy skills (Dalby, 2015; Bob, 2018). The vocational education included bricklaying and plastering, agriculture, electrical, metal fabrication, machine shop, and hospitality. Thus, the alternative vocational education initiative resonates well with Charles Prosser's theories on vocational education that the public education system should offer training for modern occupational jobs (Eze and Onwusa, 2021). However, despite the deliberate efforts in several

countries, including Botswana, the intended aims of manpower training in vocational education have not been realised. Charles Prosser's theories for effective and efficient vocational education emphasised some key issues that include a conducive training environment, relevance of curricula and skills to the labour market, quality and qualifications of trainers/instructors, appropriate instructional methodologies and equipment, and the right student's attitude amongst others (Roberta, 1991). Therefore, this study analysed the challenges Botswana faced in offering an efficient and effective vocational education system to meet the needs of the local labour market and beyond.

In Botswana, vocational education has been formally offered at brigades, technical and other training institutions (UNESCO, 2016). This form of education has been to equip school leavers who could not proceed to university and other more formal colleges with practical skills in craftwork to enable them to pursue careers in trades such as engineering and construction (Roberta, 1991). Therefore, it was considered an alternative route for those who could not proceed to higher education. Heitmann (2017) argues that most vocational education graduates' jobs are found in the small, micro and medium enterprise (SMME) sectors where vocational graduates can get employment or be self-employed and use their skills to earn a living.

Highlighting the critical need for vocational education at independence, Fox (2016) argues that there was a need to enhance the value of human capital in the new republic of Botswana and provide skills to the unemployed youths who had been side-lined by the colonial system to enable them to secure jobs or work for themselves. Despite some significant investment in vocational education through the establishment and funding of brigades by the government of Botswana, youth unemployment remains a challenge to date as most of the young people are still found roaming the streets even after attaining vocational education qualifications (Fox, 2016; Hanna, 2014; Biavaschi, 2012).

Some stakeholders have raised concerns about the quality and relevance of vocational education that is provided by tertiary education institutions in Botswana. Major concerns have been raised about the challenges experienced by new graduates of these institutions in obtaining employment. Commenting on the difficulties experienced by vocational graduates in Botswana in securing jobs, Siphambe (2012) notes that competency levels have been the major employer concern. As such, vacant posts, in the end, are filled mostly by non-citizen personnel who come in with higher levels of job competencies and experience. Such a situation is caused by the conviction that local graduates still lack the required vocational skills and competence levels; hence, these graduates have failed to find employment many years after graduation (Motlaleng & Narayana, 2014).

The results of a tracer study conducted in 2007 by the Botswana Training Authority (2010) suggested that vocational education institutions (VEIs) training is irrelevant and that 50% of the vocational education graduates were unemployed or economically inactive. The reason for this level of unemployment was attributed to the graduate skills-labour market mismatch and between job supply and demand. Whilst, on the one hand, this graduate skills-labour market mismatch resulted in structural unemployment (Siphambe, 2012; Motlaleng & Narayana, 2014), on the other hand, Charles Prosser's theory lays the responsibility on having adequately trained instructors who possess up-to-date-specialised-technical-and-pedagogical-skills for effective skills transfer to learners (Eze & Onwusa, 2021).

Employers were also concerned about the poor quality of graduates from tertiary education institutions (TEIs) and the immediate usefulness of their qualifications (Siphambe, 2012). The employers emphasised the need for these graduates to be provided with further on-the-job training to prepare them for work (Botswana Training Authority, 2010). For instance, some of the identified skills lacking in the graduate were soft skills such as creativity, problem-solving, interpersonal, and time management skills, amongst others. Gaps were also identified in the graduates' specific trade and vocational areas that needed upskilling. To this effect, the Tertiary Education Council (2013) suggested that there was a need for a national human resource (HR) development strategy as well as a comprehensive system-level review to realign the current programme offerings with the needs of the nation. Effective curriculum advisory boards that include industry stakeholders are a cornerstone in Charles Prosser's theory to mitigate graduate-labour market skills mismatch (Roberta, 1991).

Despite the training efforts in vocational institutions, 27.4% of youths in Botswana are unemployed (Statistics Botswana, 2023). Botswana's labour market is disequilibrium due to the mismatch between labour demand and skills supply (Siphambe, 2012; Tertiary Education Council, 2013; Motlaleng & Narayana, 2014). This situation is stifling the country's competitiveness and productivity of its human capital in terms of economic growth and development. This study, therefore, sought to explore the following objectives:

1.1 Research Objectives

This study sought to establish the challenges facing the delivery of vocational education in Botswana that may have resulted in it failing to address the human capital issues facing the country's young people. Potential remedies to the challenges were also determined and explored to improve the quality, efficiency, effectiveness and relevance of vocational education to enhance the employability of the graduates.

2. Theoretical Foundations

Developed nations have gone through several stages of development in both theory and practice and have kept extensive records of their vocational programmes and their impact. This wealth of information has made it possible to

extensively research many aspects and prospects of vocational education (Mupimpila and Narayana, 2009). The lack of extensive records on the workings and dynamics of vocational education disadvantages developing countries. Botswana is not an exception to this problem, as evidenced by the country's lack of detailed vocational education research. Furthermore, Botswana has not undergone such a fundamental transformation to warrant high outcomes in the theory and practice of vocational education.

Vocational education in Botswana has been successful as an unemployment eradication measure. However, an assessment of the period from 1980 to date reveals the complete opposite. For instance, in 2017, unemployment was estimated at 17.5% and poverty at 30% (Botswana Statistics, 2017), mainly due to the country's heavy reliance on capital-intensive mining and quarrying (Republic of Botswana, 2017). 2023 youth unemployment is estimated at 24.7% (Botswana Statistics, 2017). Vocational education has been overtaken by generally academic education. Due to technical and financial constraints, it has been unable to effectively fulfil its original mandate of unemployment eradication through skills development.

Several research on the challenges facing vocational education in Botswana has revealed that technical and vocational education cannot contribute significantly to the reduction of abject poverty, hunger and unemployment because it is handicapped by numerous challenges (Akoojee, 2005; Kerton, 2007; Eze, 2013; Okoye & Arimonu, 2016). Kerton (2007), for instance, highlights ten key weaknesses of the Botswana vocational education system. These weaknesses included poor manpower planning, poor coordination of training and development at all levels, and poor quality of training of vocational education and training (VET) graduates. Other weaknesses Kerton (2007) identified included dissatisfaction with the quality of VET graduates by employers, inadequate VET funding, poor monitoring of policy outcomes, poor coordination of policies and guidelines, ineffective industrial placement, and poor quality of lecturers.

A tracer study conducted by the Botswana Training Authority (BOTA) in 2006 discovered that vocational education was perceived as an inferior pathway for blue-collar workers who earn low wages and perform menial tasks (Botswana Training Authority, 2006). This view is reinforced by Ojimba (2012) and Nworlu-Elechi (2013), who concur that vocational education graduates are subjected to embarrassment due to the stigma associated with inferior education.

Other writers, such as Polelo (2007) and Van Rensburg (2007), evaluate the strengths and weaknesses of the vocational educational system. The slow pace that the government has taken to revolutionise the sector is the main reason why this sector has stagnated. There has been a concerted effort by the Botswana government to increase the size of human capital in the country, as evidenced by the growth of the education sector in the last twenty years (Nkomo, 2018). The government, against a backdrop of limited resources and international backing (Mohammed, 2001; Momoh, 2012; Okoye & Arimonu, 2016), was instrumental in the development of the Brigades Development Centre in 1977 and the Madirelo Training and Testing Centre in 1986, both housed under the Department of Vocational Education and Training since 1994. Indeed, the Botswana government has developed several policy frameworks and invested tremendously in vocational education to strengthen citizen skills training to produce market-ready personnel and quality skills tailored to industry needs (Polelo, 2007; Van Rensburg, 2007; Adams, 2007).

Highlighting further the challenges bedeviling vocational education in Botswana, Adams (2007) posits that there is no doubt that the technical capabilities of employees can enhance the competitiveness and productivity of a country. Currently, the country's stakeholders are not in agreement as to the employment needs of the workforce. This means vocational institutions train potential employees without proper manpower planning and assessment tools to correctly determine current and future skills requirements (Bob, 2018). The Botswana government, therefore, continues to sponsor students whom the job market may not absorb. The effects of this mismatch may be catastrophic as unemployment may increase due to job seekers not having the appropriate skills required by employers (Siphambe, 2007; Statistics Botswana, 2014; Bob, 2018). It has been accepted that it is not only vocational education graduates who face high levels of unemployment. Even university graduates face similar challenges. However, it is the vocational education graduates who face more unemployment and underemployment problems.

Many concerns about the quality and quantity of vocational education in Botswana (Kerton, 2007; Motlaleng & Narayana, 2014). A serious problem at the heart of the vocational education system is the lack of adequate facilities such as laboratories, workshops and equipment, which hamper the delivery of effective and quality vocational education and it needs a counterbalancing solution to address unemployment and underemployment which continues to affect graduates (Agbionu, 2003). Low salaries have resulted in qualified and experienced vocational education teachers migrating to Western countries (Bassi, 2004; Okoye & Arimonu, 2016).

1.2 Possible Remedies to the Challenges Confronting Vocational Education in Botswana

It is believed that vocational education in Botswana is not as effective as it should be and is plagued by many challenges that require immediate attention. There is a need to modernise vocational education in the country (Heyneman, 2003). Martin, Villeneuve-Smith, Marshall and McKenzie (2008) advocate for the proper employability of vocational education graduates as this will improve an individual's ability to earn a living. Employers also have a responsibility to support vocational education initiatives financially and otherwise. They need to be proactive in talent

management (Hogg, 2014). The purpose is to ensure that employees are competent in work life and maximise productivity (Juhdi, Pa'Wan, Othman & Moksini, 2010).

McGrath (2009) believes that another possible solution to the challenges bedevilling vocational education is for the VEIs and employers to establish a curriculum development and reform committee so that they can collaborate to develop the best curricula that speak to employers' needs in industry, commerce and government by enabling students to undergo a new type of training geared towards industry such as competency-based training (Rieckmann, 2012). There needs to be a sectoral-wide reform incorporating vocational education into the modern economy by paying market-based wages. Other issues identified by researchers that require reform are improving funding access, developing multiple pathways for secondary education and ensuring that low-performance students are supported until higher marks are obtained (McGrath, 2009; Rieckmann, 2012). Training staff in industry or commerce could be attached or seconded to institutions regularly or part-time to cover shortages and bring work ethics into training.

3. Research Design and Methodology

This study adopted the positivist paradigm whereby a survey design was implemented with the quantitative methodology used to collect data using a questionnaire to determine the challenges faced by vocational education in Botswana.

3.1 Sampling and Population

The study population of 61 respondents included 15 administrators working in the Ministry of Education, 26 instructors from vocational colleges, 10 self-employed graduates and 10 employers of vocational education graduates.

The convenience sampling technique was used to identify the respondents. This is a technique whereby information-rich informants who are easily accessible and are conversant with the phenomena under investigation are selected to participate in the study. These participants were familiar with the country's vocational and technical education issues, and data could be collected cost-effectively (Golzar, Noor & Tajik, 2022).

3.2 Instrumentation and Data Collection

To ensure the reliability of the study, pilot testing was done on the questionnaire, followed by pre-testing before administering it to the selected participants. Sixty-one questionnaires were distributed, and all were returned, meaning a 100% response rate, which was very encouraging. The drop-and-pick method, where questionnaires were physically handed to the respondents and were collected later, was utilised, which ensured such a high response rate.

Primary data was only collected after the attainment of ethical clearance. No respondents were coerced to participate in the study, and the respondents were assured of confidentiality. They were informed that their participation was voluntary and that they were free to withdraw any time they chose to do so during the study.

3.3 Data Analysis

Data analysis was done using the Statistical Package for Social Sciences (SPSS) v20 software as well as descriptive statistics and frequency distribution tables to summarise the data from the respondents for ease of understanding and interpretation. A linear regression model was used to establish whether an approximate inter-relationship existed between the challenges faced by vocational education in Botswana and its contribution to the country's economy.

4. Research Results

4.1 Challenges Facing Vocational Education in Botswana

The study sought to explicate the challenges confronting vocational education in Botswana. The findings are shown in Table 1 below.

Table 1 shows the strength of the 19 challenges faced by vocational education in Botswana. The table shows that about 61% of the respondents agreed that vocational education institutions were under-subscribed, while about 39% disagreed. This means the respondents believed there was underutilisation of vocational education institutions, with few students enrolling in these institutions compared to the available capacity. This is because university education was preferable to vocational education, and there was a perception that the latter was inferior and was associated more with negative outcomes than positive ones by parents and students. This is also due to the second-choice tag attached to vocational college enrolment. This is confirmed by Mumpimpila and Narayana (2009) and Kerton (2007), who identified the changing perceptions of students, parents and employers concerning vocational education and university education.

Table 1 shows that 49.2% of the respondents agreed that at vocational education institutions, there were poor-quality teachers, while 50.8% disagreed. This indicates that although slightly more respondents gave thumbs up to the quality of teachers in vocational institutions, the numbers are almost equal, which implies that, indeed, the quality of teachers was a cause for concern to a reasonable number of respondents. This explains why there is the perception that

vocational education is inferior because the quality of the educators is perceived to be of poor quality. Hence, the education received cannot, therefore, be of a higher standard than university education. It is critical to recognise the centrality of the work of the classroom practitioner (the teacher) in the entire system of the education process. What happens in the classroom constitutes the moments of truth that determine the outcome of the education system one way or the other. It is difficult to see many measures that can be instituted in the education process to improve the quality of education which do not involve the teacher as well as classroom practice. It is therefore important to recognise that, based on the central role the teacher plays in ensuring the quality of education, there is no tertiary education quality that can supersede the quality of its lecturers. Thus, it was difficult for VEIs in Botswana to produce well-trained, quality graduates who would be useful to the labour market when the instructors were inadequate in both quality and quantity, as indicated by the results of this study.

The concern of poor-quality instructors in VEIs in Botswana indicated in Table 1 is reinforced by the finding that 49.2% of the respondents agreed that at VEIs, there was poor quality of training of VET graduates while 50.8% disagreed. This indicates the problem of vocational education, which was seen to be inferior, ineffective, defective, incomplete, and inadequate in giving graduates a fair chance to excel and get employed in high paying jobs. This means that employers would prefer something other than vocational education graduates thus reducing their chances of getting employment.

Table 1 - The challenges of vocational education in Botswana

	Code	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree	Mean	SD
The vocational education institutions are under-subscribed	VIUS	16.4%	44.3%	23.0%	11.5%	4.9%	3.6	1.1
Vocational education institutions have poor-quality teachers	PQTC	19.7%	29.5%	14.8%	27.9%	8.1%	3.3	1.3
At vocational education institutions there is poor quality of training of VET graduates	PQTV	16.4%	32.8%	16.4%	31.1%	3.3%	3.3	1.2
There are poor-quality curriculum outcomes	PQCO	24.6%	41.0%	16.4%	14.8%	3.3%	4.5	0.9
There is a lack of prioritisation of vocational needs	LPVN	21.3%	54.1%	13.1%	9.8%	1.6%	3.8	0.9
The quality of vocational education is poor	QVEP	24.6%	32.8%	14.8%	24.6%	3.3%	3.5	1.2
At vocational education institutions, there is a lack of adequate infrastructure	LAIF	31.1%	50.8%	13.1%	4.9%	0%	4.1	0.8
There is inadequate funding of vocational education in Botswana	IFVE	32.8%	42.6%	21.3%	3.3%	0%	4.1	0.8
There is a slow vocational education policy reform in Botswana	SVEP	27.9%	55.7%	9.8%	6.6%	0%	4.1	0.8
In Botswana employers are unsatisfied with vocational education graduates	EUVT	23.0%	27.9%	26.2%	23.0%	0%	3.5	1.1
There are several policy coordination and implementation challenges	SPCI	23.0%	49.2%	19.7%	8.2%	0%	3.9	0.9
In Botswana vocational education is currently irrelevant	VECI	19.7%	18.0%	14.8%	37.7%	9.8%	3.0	1.3
There is poor systematic professional training and development of instructors and poor manpower planning	PSPT	29.5%	27.9%	21.3%	18.0%	3.3%	3.6	1.2
Vocational education is still perceived as inferior	VEPI	27.9%	42.6%	14.8%	13.1%	1.6%	3.8	1.0
There is poor monitoring policy of vocational education	PMPV	26.2%	39.3%	19.7%	14.8%	0%	3.8	1.0
There is ineffective industrial placement by employers.	IIPO	29.5%	41.0%	19.7%	9.8%	0%	3.9	0.9
There are inadequate previous general educational outcomes	IPGE	23.0%	39.3%	23.0%	13.1%	1.6%	3.7	1.0
There is a low uptake of VET graduates by VEIs	LUVG	24.6%	44.3%	16.4%	14.8%	0%	3.8	1.0
There is a lack of industry and economic diversification in Botswana's economy	LIED	29.5%	44.3%	13.1%	11.5%	1.6%	3.9	1.0

Key: VIUS-The vocational education institutions are under subscribed; PQTC- vocational education institutions have poor-quality teachers; PQTV- At vocational education institutions, there is poor quality of training of VET graduates; PQCO-There are poor quality curriculum outcomes; PVN-There is a lack of prioritisation of vocational education needs;

QVEP-The quality of vocational education is poor, LAIF-Lack of adequate infrastructure facilities; IFVE-Inadequate funding of Vocational Education; SVEP-Slow vocational education policy reform; EUVT-Employers are dissatisfied with vocational education graduates; SPCI-There are several policy coordination and implementation challenges; VECl-Vocational education is currently irrelevant; PSPT-There is poor systematic professional training and development of instructors and poor manpower planning; VEPI-Vocational education is still perceived as inferior; PMPV-There is poor monitoring of vocational education; IIPO- There is ineffective industrial placement by employers; IPGE- There are inadequate previous general educational outcomes; LUVG-There is a low uptake of VET graduates by VET institutions; LIED-There is a lack of industry and economic diversification in Botswana's economy.

Table 1 shows that 65.6% of the respondents agreed that in vocational education institutions, there were poor quality curriculum outcomes while 34.4% disagreed. This indicates that the quality of vocational education was unacceptable, thereby reducing the capacity of vocational education to contribute meaningfully to the economic development of the country. Poor quality curriculum outcomes may have meant that there was little change between what graduates of vocational education could do before training and what they could do post-training; hence there was no change in graduates after going through a learning experience. This goes against the dictates of a learning process which should result in a relatively permanent change in behaviour. It should be noted that effective education and training should be concerned with realising transformation in individual learners. This change is recognised through the assessment of curriculum outcomes, which must be positive.

The table also indicates that about 75% of the respondents agreed that there was a lack of prioritisation of the needs of vocational education institutions compared to universities and other colleges, while about 25% disagreed. This may have led to unacceptable quality levels of education offered by these institutions compared to universities, which, in turn, may have contributed to a policy shift to university education to the detriment of vocational education. The government's lack of prioritisation of vocational education has led to poor funding, which is discussed elsewhere in this study.

Table 1 indicates that 57.4% of the respondents agreed that the quality of vocational education was poor, while 42.6% disagreed. This is yet another challenge that requires urgent attention as the assurance that skilled vocational graduates will be able to perform their jobs to the satisfaction of their employers is negated by poor quality education, which can affect the outcome. It would not be possible for an educational system with poor quality to produce high-quality human capital that would contribute effectively to Botswana's economic diversification and growth.

Table 1 shows that almost 82% of the respondents believed there was a lack of adequate infrastructure at vocational education institutions, while about 18% saw otherwise. Lack of adequate infrastructure in vocational education institutions may have resulted in these institutions failing to effectively execute their mandate of offering quality education to the youths to produce competent professionals. Such infrastructure included classroom space, computers, equipment, transport, etc. It should be noted that the lack of modern infrastructure, especially that of information communication technology (ICT), has far-reaching effects on the effectiveness of vocational education pedagogical strategies. The availability of ICT enables the utilisation of e-learning methodologies, which can contribute to quality improvement, technological innovation and increased outreach and access to learning opportunities, resulting in well-equipped and employment-ready graduates. That kind of learning is only effective when adequate ICT infrastructure includes access to electricity, computers, and internet connectivity.

Findings in Table 1 also reveal that about 75% of the respondents agreed that there was inadequate funding of vocational education in Botswana, while about 25% saw the contrary. There was a general belief that the government was not allocating enough funds to vocational education institutions, so they could not provide quality education to learners. Therefore, the lack of finance made it difficult for institutions to improve the quality of vocational educational programmes. It is quite apparent that the funding crunch has a detrimental effect on the quality of teaching and learning. It manifests itself through poorly trained academic staff, inadequate library resources and overcrowded learning rooms, which all produce low-quality graduates.

Table 1 shows that about 84% of the respondents believed that there was slow vocational education policy reform in Botswana while about 16% did not think so. The pace of reform in government policy was seen as a stumbling block to the modernisation and reform of the vocational education sector. Table 1 indicates that about 72% of the respondents felt that there were several policy coordination and implementation challenges in Botswana, while about 28% did not feel this. The results point towards a slow process towards policy reform, which was exacerbated by poor implementation of vocational education reforms, which further limited the effectiveness of vocational education. Lack of effective policy reform on vocational education has meant that job opportunities for graduates remain limited as the training has not been an effective tool for supporting skills for jobs and has also trapped the graduates into dead-end jobs without progression into higher levels of education or professionalised trades (Biavaschi et al, 2012; Oketch, 2015).

In the case of Botswana, policy reform should look at opening avenues for the acquisition of higher vocational education qualifications beyond certificates and diplomas such as the Bachelor of Technology (BTech), Master of Technology (MTech) and Doctor of Technology (DTech), similar to the South African scenario. Such a policy could be useful in repositioning vocational education to address its marginalised position within the country's education system at the time of the study.

The table reveals that about 57% of the respondents agreed that there was a lack of systematic professional training and development of instructors and poor manpower planning at vocational education institutions, while about 43% disagreed. Given that the calibre of the vocational instructors is strongly believed to be a crucial determinant of the quality of graduates in any vocational education and training programme, a systematic training and development programme for instructors is therefore paramount. The main reason in support of this argument is that the production of highly skilled and competent graduates, hence productive workers, is a product of the development of high-quality instructors through effective systematic training and development. It should be noted that critical aspects of the instructors' critical competencies include technical knowledge and skills, pedagogical skills, and current and relevant industry experience (Bob, 2018).

Table 1 shows that about 66% of the respondents agreed that there was poor monitoring of vocational education, while about 34% disagreed. In addition, Table 1 shows that 71% of the respondents agreed that there was ineffective industrial placement of both instructors and learners in vocational education institutions, while about 29% disagreed. The discovery confirms this finding that about 61% of the respondents believed there was generally a poor learning-doing culture in VEIs as opposed to about 39% who did not think so. It should be realised that evidence suggests that providing workplace exposure for instructional staff at VEIs assists the training function by bringing the classroom curriculum closer to the skills required by the industry and motivating the instructors to improve their teaching. Furthermore, the interaction between lecturers and industry generally promotes long-term cooperation between the VEI and the company (Eze, 2013; Heitmann, 2017). Given that there are essential differences between the world of the VEI and the real world of work for which graduates are being prepared, the actual workplace experience (internship/attachment/work-related learning) is critical for both learners and instructors (Atchoarena & Delluc, 2002; Biavaschi et al., 2012).

Two groups of challenges faced by vocational education in Botswana can be identified in Table 1: major and minor. The major challenges are those which lie between a mean of between 3.8 to 4.5 with a standard deviation ranging with variability about the norm by between 0.8 to 1.0, and these include the following sub-constructs: PQCO, LPVN, LAIF, IFVE, SVEP, SPCI, VEPI, PMPV, IIPO, IPGE, LUUG and LIED. These findings are consistent with the works of Heyneman (2003), McGrath (2009), Rieckmann (2012) and Polelo (2007) that those problems of the past plague vocational education in Botswana and, until those are eradicated, it will not be as effective as it should be.

In contrast, there were also minor challenges with means lying between 3.0 to 3.7 and a standard deviation ranging, small variability about the norm between 1.1 and 1.2, and these include the following sub-constructs: VIUS, PQTC, PQTV, QVEP, EUVT, VECI, and PSPT. The minor challenges were those in which there was a low number of dissenters who agreed with the indicated variable. The findings corroborate with several studies that assessed the challenges faced by the Botswana vocational education system, such as those of Okoye and Arimonu (2016), Eze (2013), Nworlu- Elechi (2013), and Ojimba (2012). It can be seen from the results that many deep-rooted challenges have plagued vocational education in Botswana, thus affecting its potential to provide young Botswana with quality education and skills and, hence, employment, with negative connotations for the country's economy in general.

4.2 Potential Remedies to the Challenges Confronting Vocational Education in Botswana

The respondents were requested to indicate the extent to which they agreed or disagreed with presented pronouncements suggesting ways vocational education in Botswana could be improved to enable it to achieve the desired goal of enhancing the quantity and quality of human capital in the country. The respondents' views on the matter are indicated in Table 2 below.

Table 2 - Potential means of improving vocational education in Botswana

Statement	Code	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree	Mean	SD
There is a need to improve the link between the vocational curriculum and the local labour market	ILVC	59.0%	31.1%	6.6%	1.6%	1.6%	4.5	0.8
Vocational and academic education should be merged	VAAE	42.6%	34.4%	18.0%	3.3%	1.6%	4.1	0.9
The government and private sector must make new investments in infrastructure	GPSM	47.5%	44.3%	6.6%	1.6%	0%	4.4	0.7
There is a need to create experience pathways for lecturers and students to improve	CEPL	47.5%	47.5%	3.3%	1.6%	0%	4.4	0.7
Enough theoretical knowledge must be provided	TLMP	39.3%	42.6%	9.8%	8.2%	0%	4.1	0.9
There is a need to improve funding and financial support	IFFS	52.5%	41.0%	6.6%	0%	0%	4.5	0.6
There is a need to improve employment for vocational education.	IEVE	50.8%	39.3%	9.8%	0%	0%	4.4	0.7
There is a need to improve vocational education courses	IVEP	60.7%	32.8%	6.6%	0%	0%	4.5	0.6
There is a need to improve vocational education teaching methodologies	IVET	54.1%	39.3%	6.6%	0%	0%	4.5	0.6
There is a need to improve organisational commitment and trainee engagement	IOCT	55.7%	39.7%	3.3%	3.3%	0%	4.5	0.7
There is a need to organise more training courses for teachers	OMTP	63.9%	29.5%	6.6%	0%	0%	4.6	0.6

Table 2 shows that about 90% of the respondents agreed that there was a need to improve the link between vocational curriculum and local labour market demands. This shows that the respondents doubted the ability of vocational education to address the needs of the labour market in Botswana. Furthermore, the table reveals that 77% of the respondents agreed that vocational and academic education should be merged with 23% disagreeing. This could mean that the respondents had no confidence in vocational education standing alone.

The table also shows that about 92% of the respondents were of the view that both the government and the private sector must make new investments in infrastructure to replace the worn-out and inadequate infrastructure characterising VEIs in Botswana. This view is reinforced by the discovery that 90% of the respondents were of the view that there was need to improve funding and financial support for vocational education in the country to enhance the quantity and quality of infrastructure as well as fund other operating costs. These two results are a clear indication that vocational education in Botswana was under-funded.

Table 2 also shows that 95% of the respondents agreed that there was need to create experience pathways for lecturers and students of VEIs, while there was also a need to enhance the theoretical knowledge offered by these institutions as indicated by about 82% of the respondents. These two results may mean that the respondents did not have confidence in both the practical and theoretical knowledge derived from vocational education.

The findings in Table 2 further reveal that about 94% of the respondents believed there was a need to enhance the quality of the vocational education curriculum. In comparison, only about 6% did not see anything out of order with the existing vocational education curriculum at the time of the study. This finding is reinforced by the view held by about 93% of the respondents who believed there was a need to improve vocational education instructional pedagogies, with only about 7% not concurring. Further confirmation of the validity of this finding is provided by the fact that about 93% of the respondents indicated a need to organise more training courses for vocational education teachers, with only about 7% not believing so. These findings indicate little confidence in vocational education among key stakeholders in Botswana.

Virtually all the respondents were generally, in agreement that the following measures could improve the effectiveness of vocational education in Botswana:

- Improving the link between vocational curriculum and local labour market needs
- Merging vocational and academic education
- Increasing public investment in infrastructure
- Establishment of experience pathways for lecturers and students
- Improving funding and financial support
- Improving vocational education instructional methodologies

The findings in Table 2 reveal that the extent of the respondents' agreement with the suggested solutions to the challenges confronting vocational education in Botswana is well-pronounced, as exemplified by high means values above 4 and low SD below 1. For instance, variables ILVC, GPSM, CEPL, IFFS, IEVE, IVEP, IVET, IOCT and OMTP exhibit high mean values between 4.4 and 4.6 and low SD between 0.6 and 0.7. This indicates that the respondents strongly believed that the suggested variables would play a major role in providing solutions to the challenges bedevilling vocational education in Botswana, thus stimulating its effectiveness in facilitating youth employment and economic development.

The study's findings established that an approximate inter-relationship existed between the challenges faced by vocational education in Botswana and its role in the economy and employment of young Batswana, as explicated by the linear regression model in Table 3 below.

Table 3 - Linear regression model

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1: Role on economy	.626	.391	-.006	1.80926
2: Role on employment	.982	.964	.549	1.21208
3: VET challenges	.998	.996	.846	.70711

Table 3 above demonstrates significant approximate relationships between the effects of vocational education on employment creation, its role in the economy, and the challenges it faced, which inhibited its mandate. The r value for the effects of vocational education is .626, which is reflective of a moderate correlation with the two deterministic variables of challenges of vocational education ($r = .982$), which reflects a near-perfect relationship with the role played by vocational education and its effects on employment creation. This means that if the challenges bedevilling vocational education in Botswana were effectively dealt with, its impact on the generation of employment and economic growth and development would be more positive.

5. Conclusion

The study findings showed that university education was preferable by young Batswana compared to vocational education (Table 1), ostensibly due to the inferiority tag associated with vocational education in the country. The inferiority of vocational education might have been due to the quality concerns raised against vocational education, as evidenced by the findings of this study. The poor quality of vocational education graduates may have led to employers preferring university education graduates, resulting in high unemployment levels among vocational education graduates.

Quality concerns with vocational education (Table 1) have led to tertiary education financiers prioritising university education ahead of vocational education, leading to the former experiencing financial challenges observed in this study. The study findings pointed to further difficulties experienced by vocational education in the country, such as poor curriculum design, development and implementation, and poor-quality teachers since well-qualified ones could have left VEIs for better-equipped and higher-paying colleges and universities.

Other negative effects of inadequate funding for vocational education that were observed in this study included outdated and insufficient infrastructure, lack of systematic professional training, development and retention of qualified instructors and lack of effective placement of vocational education trainees on industrial attachment since this activity must be financed (Table 2).

From the findings of this study, it was also observed that there was poor planning, implementation, and monitoring of vocational education in Botswana. Although there was a general agreement among key stakeholders on the need to reform vocational education policy, attempts to do so were found to be rather sluggish, as evidenced by the country's slow process of vocational education policy reform. The government's vocational education reform programme was moving at a snail's pace. The government was taking its time in transforming the vocational education curriculum, pedagogical and assessment strategies, infrastructure and instructor training and development to enable vocational education to meet the current needs of Botswana's economy. Such challenges were responsible for the bad shape that vocational education was found to be in and, hence, its limited success in the fulfilment of the mandate for which it was established.

It has been observed that vocational education can potentially develop the stock of alternative human capital for Botswana's economy's various activities. Vocational education can also enhance vocational graduates' employability, productivity, and performance if adequately developed and administered. The study was significant in as far as it exposed the challenges bedevilling vocational education, which has been part and parcel of Botswana's skills development strategy for a long time and which can improve the proficiency and effectiveness of the country's human capital, hence stimulating employment creation and economic growth if those challenges are effectively addressed. The study elucidated potential remedies to the difficulties confronting vocational education in Botswana, including the need for the government to give this system of teaching the attention it deserves to enhance economic development, thereby

improving the social contract by strengthening the standard of living of the recipients of vocational education and citizens in general.

The findings of the study establish a foundation for further research. The study was premised exclusively on the respondents selected from institutions in Gaborone, the capital city of Botswana, which constituted a small sample size, a crucial limitation of the study. Again, adopting an exclusively quantitative methodology symbolises a significant methodological shortcoming. Future researchers may want to embark on a more comprehensive study focusing on a larger sample extracted from different parts of Botswana, including rural areas where the challenges of vocational education can be more devastating or otherwise. Such a comprehensive study would render the generalisation of findings more valid. Future researchers could also consider adopting alternative methodological approaches, such as mixed methods, thus facilitating methodological triangulation and enhancing the study's validity. Future researchers may also consider embracing other statistical methods such as correlation analysis, exploratory factor analysis, and Analysis of Variance (ANOVA) to conduct data analysis.

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