Quality Assurance Practices and Students' Academic Performance in Technical, Vocational Education and Training Institutions, A Case of Integrated Polytechnic Regional College Kigali in Kicukiro District – Rwanda

SERUHUNGO KAMANZI Jean Bosco, Dr. HARERIMANA Jean Paul and Dr. ANDALA Hesbon Opiyo

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[1*]SERUHUNGO KAMANZI Jean Bosco [2]Dr. HARERIMANA Jean Paul &[3]Dr. ANDALA Hesbon Opiyo
[1]Postgraduate Student, Mount Kenya University
[2,3]Senior Lecturers, Mount Kenya University
*Corresponding author's Email address: seruhungo@gmail.com

Abstract

The main aim of the study was to assess the relationship between quality assurance practices and students' academic performance in the Integrated Polytechnic Regional College (IPRC) – Kigali in Kicukiro District – Rwanda. The study was guided by three specific objectives which are to examine the quality assurance practices in IPRC Kigali in Kicukiro District – Rwanda, to determine the level of students' academic performance in IPRC Kigali in Kicukiro District, to establish the relationship between quality assurance practices and students' academic performance in IPRC Kigali in Kicukiro District. The target population was 3438 respondents from which 358 respondents was sampled: 21 trainers, 5 administrators and 332 students. The study findings revealed that the use of appropriate facilitation techniques that create a conducive learning environment, training curricula that respond to the labour market needs, availability of training resources and qualified academic staff, effective assessment of students' achievement and evaluation of training program, existence of institutional policies, models, methods and procedures are quality assurance practices that IPRC Kigali have put in place to assure the quality of its academic offerings. The findings also revealed that program completion and competence acquisition at IPRC Kigali are at good level whereby students at IPRC Kigali are satisfied with competences acquired in terms of hands-on and practical skills, critical thinking and reasoning skills, problem-solving skills, oral and written communication skills and are happy to attend their courses and their lectures frequently. Inferential statistics revealed that a significant relationship exists between quality assurance practices (facilitation techniques, curricula, training resources, assessment and evaluation) and academic performance (Pearson Correlation Coefficient between Dependent and Independent variables are respectively 0.79, 0.865, 0.604, 0.644 and the Regression R Square = 0.5312) as indicated in model. The study recommended that for the purpose of achieving the goals and objectives of academic offerings at IPRC Kigali and TVET in Rwanda, the quality of the programme needs to be improved, sustained and match with needs at the labour market. The government's effort `should be considerably increased especially by financing training resources(consumables) and ensure engagement of private sector in TVET education system in order to improve access, quality and enhancing the relevance of TVET Education system in Rwanda.
Keywords: *Quality assurance practice, academic performance, Technical and Vocational Education and Training, Integrated Polytechnic Regional College (IPRC)*

1.0 Introduction

The quality and outcomes of TVET Education have been globally highlighted as a considerable concern (Harvey, 2008 & Okolocha, 2012). In both developed and developing countries, TVET enrollment has been increased but one of the many new pressures remaining is the quality issues (El-Khawas, 2007). Research studies suggests that the government should slow down the pace of expansion and pay more attention to the quality of education and value for money to uphold accountability and improvement, cost-effectiveness and efficiency (Oweh, 2010, Omede, 2012 & Oni, 2009).

Quality is the base line standard in education which can be measured on a scale of reference. Quality is concerned with how good or bad a product is. It is about the standard of something when compared with other things. It therefore presupposes that there is a standard set against which the outcome is compared. The quality is synonymous with standard, efficiency, excellence, relevance and worthiness according to Jaiyeoba and Atanda (2007). When applied to education, it is the success with which an institution provides educational environment which enables students to effectively achieve worthwhile learning goals including appropriate academic standard. Still linking quality to education, according to Aigboje (2007), quality is to excel or more of societal values embodied in the school curricula.

In Bangladesh according to Islam and Mia (2007), their study revealed that that both formal and non-formal TVET lacked an effective linkage between training and the world of work. It further noted that because of its lack of coherent mode, practical skills training which does not produce the requisite skills for the job market. Additionally, the trainees also lacked training experience, initiative and motivation to discharge their duties effectively. According to Esirah (2007), Germany has innovated a very unique style "dual" system the theory is taught in educational institutions and practical skills are acquired through the apprenticeship in a company. In Ghana, the Industrial Skills Development Centre was established in 2002 and was tasked to harness the financial and material resources required for achieving excellence in skills training (Suleiman, 2010).

Rwanda has emerged from genocide against Tutsi in 1994, which resulted in a total breakdown of the governance, social, economic, infrastructure, and family and community bonds. Whilst Rwanda has made great strides in restoring the state structures and reviving the socioeconomic fabric of the country, there is still remaining challenges in the areas of employment and skills development. The Government of Rwanda fully recognizes the economic problems affecting the country and has developed and is implementing policies that seek to create jobs and reduce poverty. In view of all this, the GoR has pledged gradual vocationalisation and decentralisation of the entire education system, in which WDA, RP/IPRCs and TVET is put at a centre stage.

According to the 2002 census of Population and Housing, Rwanda's Population was estimated at 10.4 million and with the population density of 321 persons per square kilometre. The country`s Population grew rapidly from a small size Population of 2 million in 1962 to over 10 million in 2010. The country has a relatively high-rate population growth of 2.9% which could carry on the population to sixteen million in the year 2020, if this pace or speed is maintained. The population is predominately young with an average age of about 20 years of old with about 60% of the total population less than 19 years old with significant implications for young people's unemployment (Reliance Services 2012).

TVET has emerged as one of the most effective human resource development strategies that Rwanda has embraced in order to train and modernize the technical workforce for national development. Since its development in 2008, the Government put efforts to expand TVET and attract local and foreign investments in order to produce skilled and competent labour force. Moreover, TVET is expected to react flexibly to ever changing demands in the labor market, through the development of new training programs, applying new training technologies and provide opportunities for employees to engage in continuous professional development, life-long learning (TVET Policy, 2015).

According to Badawi, (2013), over the past decades, the youth in Rwanda have depended so much on employment generated by the Public Sector as the sole employer mainly due to ineffective policy framework that would facilitate the processes of generating employment. Lack of active government input and facilitation has been one of the topmost challenging factors among others.

In the process of improving the lives and the standards of the population in Rwanda, the country has embarked on supporting and facilitating the informal sector as a means to generate more employment opportunities to vulnerable people especially the youth and has implemented policies to meet the Sustainable Development Goals (SDGs) and other Rural Development Programmes like Vision "Umurenge", Economic Development and Poverty Reduction Strategy (EDPRS) and the Vision 2020 as a framework to achieve the overall development in Rwanda (Reliance Services, 2012). Rwanda is trying to change from an aid dependent country into a middle income country by developing its human capital with skills in different capacities to enhance employment creation for the entire population which is dominated by the youth. The Government of Rwanda established five year action plan for youth employment promotion and the strategies which is meant to help in developing her human capital by empowering the young people in the labour market so as to get decent jobs (Reliance Services, 2012).

It is in this regard that, the government has developed a number of vocational training institutions in City of Kigali and in all four provinces (that makes up Rwanda) purposely to help the young people to gain certain level of skills to enable them become self-employed and make use of their effort in development. Oladipo, (2009), argued that vocational education normally is projected to make young people become self-reliant. This supports the argument that vocational education for young people is to become creative with necessary skills that enables them to start their own undertakings.

1.1 Problem Statement

In spite of the policies and mechanisms put in place in IPRC Kigali to ensure quality of its TVET education, quality culture is not embedded, and challenges remain in terms of ineffective curriculum, ineffective external examinations, shortage teaching and learning resources (consumables) as well as over crowdedness which earnestly affect the students' academic performance in IPRC Kigali (IPRC Kigali Report, 2018).

It is stated that young people always consider gaining skills as one of ways to solve the unemployment problem for them and it is regarded as a form of transition for them to join the independent lifestyle. Babalola (2007), argues that skills and knowledge can enhance human capability, a situation whereby young people can be able to make their own choices to lead lives they have reason to value. A recent initiative of the Government of Rwanda (GoR) to address the rampant unemployment trend in the labour market among the young people is the setting up of

Workforce Development Authority (WDA) with an aim of improving the standards of vocational institutions in a country and play a regulatory role and working under the Ministry of Education and Ministry of Public Service and Labour but still different reports have indicated the competence of graduates is still not responsive to the employer labour needs. TVET graduates often lack confidence to stand on their own capabilities to start self-employment (GoR, Report, 2010).

Yet, skills are essential for the development of Rwanda. Numerous analytical reports and policy documents, for example the Private Sector Development Strategy (PSDS), have identified the shortage of relevant skills as a major impediment to economic growth and competitiveness. Skills are lacking throughout the economy, among people working in the private sector and at public workplaces, as well as among young labour market entrants (TVET Policy, 2015).

It is believed that the highly skilled workforce is a basic requirement for driving industrial growth, and "TVET holds the key to building this type of technical and entrepreneurial workforce" in Rwanda (TVET Policy, 2015). TVET is one of the "most effective human resource development strategies that Rwanda has embraced in order to train and modernize the technical workforce for national development" (TVET Policy, 2015). Further gains in skills development can be realised through the promotion and coordination of demand-driven TVET courses; the expansion of internship, apprenticeship, and industrial attachment programmes; and the provision of support for learner transitions. The main aim of the paper was to assess the relationship between quality assurance practices and students' academic performance in IPRC (Kigali) in Kicukiro District – Rwanda.

2.0 Literature review

2.1 Quality Management (QM) Practices

There is no universal or consensus definition of TQM (Rungtusanatham et al., 2005) and numerous parties including academicians, scientist, practitioners, engineers and others have come up with various definitions (Besterfield, 1995). For instance, Porter and Tanner (2001) defined QM as a business process focusing on improving organizational effectiveness, efficiency and responsiveness to customer needs by actively involving people in process improvement activities. Previous authors have indicated that QM is a management practice which can improve quality of a products or services. It is therefore important to discover and identify a particular quality and its implication.

Quality can be defined differently due to the fact that people might view quality in relation to differing criteria based on their individual roles in the production-marketing chain (Evans & Lindsay, 2002). Sila (2007), based on an extensive reviewing of the QM literature, found that there are seven major categories of practices measured in previous studies, namely leadership, strategic planning, customer focus, information and analysis, human resource management (HRM), process management, and supplier management.

These practices, excluding supplier management, are consistent with the criteria that used in Malcolm Baldrige National Quality Award (MBNQA). These six practices are also seen in previous studies (for example; Prajogo & Sohal, 2003; Prajogo & Hong 2008). Hence, these criteria were used in this study based on several factors.

They are popular and have been widely accepted as a basic model in recent QM studies (Evans & Lindsay 1999; Jung & Wang, 2006; NIST, 2012). Next, these criteria are very suited to Malaysian firms as the same criteria are used for excellence award purposes. For instance, the Quality Management Excellence Award (QMEA) of the Ministry of International Trade and Industry and Prime Minister's Quality Award (PMQA) used the criteria of MBNQA (National Productivity Centre, 1993; Ministry of International Trade and Industry, 1998).

2.2 Measuring functionality of TVET: Quality Assurance Indicators

To avoid measuring TVET performance haphazardly by the rule of thumb, educationists have developed quality assurance indicators (QAIs) as measures which give information and statistics about educational effectiveness, efficiency and performance in different contexts (Chalmers, 2008). There are several quality assurance indicators, but the common point of convergence among all the quality metrics is the need for objective evaluation and quality improvement.

According to Ehindero (2004) quality assurance indicators include: training curricula, facilitation technique, training resources, evaluation and assessment. Besides, quality assurance indicators could be classified as simple quality indicator, performance quality indicator and general quality indicator (Cave et al., 1997; Chalmers, 2008). In practice, simple and performance quality indicators are quantitative in nature. The simple indicators are employed by quality assurance evaluators for providing a relatively unbiased description of a situation or process in the school system. The result of such QA is often expressed as absolute figures devoid of valued judgment. Performance indicators on the other hand are QA that is tied to a particular standard of learning/teaching, educational objectives, goal of examination, evaluation of management/teacher/amenities et cetera. The outcome is relative rather than absolute and it is heavily dependent on valued judgment. The general indicators however are used for QA that is essentially externally driven to elicit opinions, survey findings or general statistics (Cave et al., 1997; Chalmers, 2008).

Moreover, quality assurance indicators could also be classified as Input, Output, Process and Outcome indicators (Borden, & Bottrill, 1994; Burke et al., 2002; Warglien and Savoia, 2006). Input and output indicators are quantitative in nature. The input indicators are employed in QA for measuring the quality of human, financial and physical resources available within the formal school systems. The result of input indicators because of its quantitative nature is constrained by its inability to determine clearly quality without extensive interpretation. Output indicators are used in QA for measuring concrete results produced in the learning environment, including infrastructural/instructional resources utilized to produce the reported results.

The limitation of output indicators is that it reflects numerical value only, but the quality of the reported numbers is entirely disregarded. For the process indicators, they are employed for measuring qualitatively the means used to deliver educational programmes, activities and services within the school environment. The process indicators look at how the education system operates within a particular context; it is a good measure of inter- and intra-school quality comparison. However, outcome indicators are employed in QA by institutions and policy-makers to measure the quality of educational objective, academic activities and impact of service delivery. Outcome indicators do not generate results in numerical data like output indicators, but measure complex processes qualitatively (Borden, and Bottrill, 1994; Burke et al., 2002; Warglien and Savoia, 2006). Furthermore, QA could be carried out using four quality indicators,

namely: finance, access/participation, quality adequacy and relevance of TVET programme (ETF, 2012). Whereas, Ayeni (2012) proposed six quality indicators, viz: learning resource inputs, instructional process, teachers' capacities development, effective management, monitoring and evaluation, and quality learning outcome.

However, Cheung (2001) submitted that there are seven areas of improvement that is often directed. These include: Teaching Improvement, Learning Improvement, Curriculum Improvement, Evaluation Improvement, Classroom Environment Improvement, School Management Improvement and Teacher Education Improvement. From the discourse above, the purpose of QA could be summarized into two, viz: to evaluate brilliant academic performance of students in standard examinations; and to determine the relevance of the learning experience to the needs of the students, the community, and the society at large. The next section discussed the theoretical framework of the paper.

2.3 TVET Policy

Recently a general consensus has developed that Rwanda, as other developing countries, faces challenges including the liberalization of the market, rapid innovations in technology, and the importance of knowledge to a country's competitive advantage. Against these pressures many countries are turning to their education and training systems as a part of the solution for dealing with a whole range of social and economic issues. In light of this, and the previous second-class status of TVET, the Government of Rwanda has undertaken significant steps to strengthen TVET.

The new direction for TVET is orientated towards the world of work and the emphasis of the curricula on the acquisition of competency based employable skills. This change is necessary to train the skilled and entrepreneurial workforce that Rwanda needs to create wealth. TVET will respond to the needs of different types of industries, and also to the different training needs of learners from different socio-economic and academic backgrounds including nine- and twelve-year basic education, university graduates and others from the informal, non-formal and formal sectors. TVET will seek to ensure equitable access and outcomes for men and women, boys and girls, and vulnerable groups (i.e. orphans, people with disabilities, etc.). A skilled workforce is a basic requirement for driving the engine of industrial and economic growth, and TVET in close collaboration with the private sector - holds the key to building this type of technical and entrepreneurial workforce.

Vision for TVET "To develop a regional and international TVET system that produces men and women quality graduates, with employability skills that respond to the changing demands of employers and the country's labour market, providing them with the opportunity to engage in decent work, work for them-selves, be competent entrepreneurs and engage in life-long learning" (Rwanda TVET Policy 2015). TVET Policy objectives include: A number of systemic and institutional constraints face the current TVET system and account for the low skills base and the growing gap between what is produced by the institutions and what is needed by the labour market and companies. In this section the policy responses to these constraints are formulated. These objectives include: 1) Improved understanding of skill needs in priority sectors 2) Develop the human capacity within the TVET system 3) Improve TVET facilities and its sourcing 4) Expand the availability of the responsive curriculum offer in TVET 5) Improving the attractiveness of TVET 6) increased employer engagement in TVET (Rwandan TVET Policy 2015).

TVET is also taken to be a strategic tool to achieve the following : Transform Rwanda Into A Knowledge Based Economy (Rwandan EDPRS II 2013-2018) ,TVET schools to absorb 60% of 9 Years Basic Education Graduates by 2024 (Baseline in 2017 is 31.1% , NST1, Create 1,500,000 (over 214,000 annually) decent and productive jobs, NST1, Promote industrialization and attain a structural shift in the export base to high-value goods and services with the aim of growing exports by 17% annually (NST1,2017).

2.4 Theoretical framework

The study was premised on Role theory developed by Mullin (2004). According to Mullins, a role is the expected pattern of behavior associated with members occupying a particular portion within the structure of the organization. It also describes how a person perceives his own situation. The concept of role helps to clarify the structure and to define the pattern of complex relationship within the group. Coupled with the components like role conflict, role overload, role behavior, these will conspicuously portray the co-existences and relationship to drive the desired results. This theory takes into cognizance the fact that each person is expected by his superiors in an organization to have a certain behavior trend called "role demand'. Pareek (1993) defined role as a set of functions, which an individual performs in response to expectations of the significant members of a social system, and one's own expectations from that position or office. Rue and Byars (1992), explains role as an organized set of behavior belonging to an identifiable job.

Waweru et al (2007) defines role theory as a way individuals behave, how they feel, they ought to behave and they believe other people should respond to their actions. Quality Assurance and standards officers are required to explicitly portray certain skills above their counterpart, the teachers whenever they are out in the field carrying out their duties. Critical Conflict Theory (CCT) provides explanation for poor quality of TVET and its inability to stimulate economic growth, employment and national development. It strengthens the functionalist's perspective and identifies the sources of conflict in education. The need for using two contrasting theories is premised on the statement of Ball (1994) that no one interpretational mode or set of theoretical tools or interpretational stance is adequate or exhaustive of the analytical possibilities of policy analysis.

The same data can be subjected to very different types and levels of interpretation The critical conflict theory arose to underscore the fact rather than education reflecting the noble functions enunciated by the functionalists and several other theorists, it has been used by privileged segment of the society to engender social inequalities ranging from class, race, and gender (Liasidou, 2009; Kendall, 2010). The conflict of social inequalities that education engendered is historical and persists in every society (Durant and Durant, 1968).

2.5 Conceptual Framework

The conceptual framework guiding the study was as presented in Figure 1.

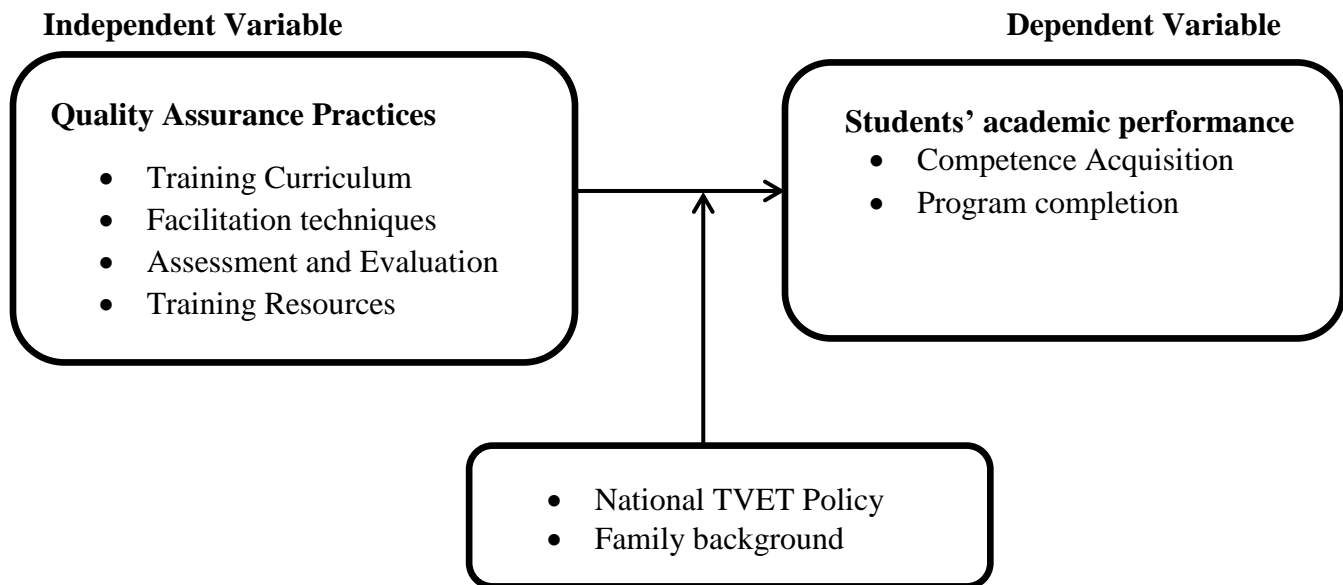**Independent Variable**   **Dependent Variable**

Figure 1: Conceptual Framework

Figure1 indicates the relationship between the variables in the conceptual framework.

The independent variable; Quality Assurance Practices has four constructs; Training Curriculum, Facilitation techniques, Assessment and Evaluation and Training Resources. These constructs are viewed as the indicators that enabled the researcher to fetch findings that vindicate their influence on the dependent variable; Students' Academic Achievement and its constructs; Competence Acquisition and program completion. The magnitude of influence however, was determined by the role of the intervening variables; Family background and National TVET policy.

3.0 Methodology

This study employed both descriptive and correlative research designs which according Waters (2017) are quantitative method of research in which two or more quantitative variables from the same group of subjects are examined for a relationship (or variation) between the two variables (a similarity between them, not a difference between their means). For this reason, therefore, the study examined the opinion of the respondents on the relationship between quality assurance practices and student's academic performance in TVET in IPRC Kigali - Kicukiro District - Rwanda. The population for this study was the students and staff of IPRC Kigali; 42 administrators, Trainers 263, and 3185 students. Taro Yamane (1973) was applied in determining the sample size. Therefore, a sample size of 353 respondents was determined comprising 5 administrators, 21 trainers and 332 students. Simple random sampling technique was used to select the sample sizes. Structured questionnaire and interviews were used to collect data. Method of analyses involved descriptive statistics by use of frequencies, percentages and standard deviation and inferential statistics (correlations and regressions).

4.0 Findings

The main purpose of this study was to assess the relationship between quality assurance practices and students' academic performance in IPRC (Kigali) in Kicukiro District – Rwanda.

4.1 Demographic characteristics of respondents

4.1.1 Family Background

Table 1 Family Back Ground

	Male	%	Female	%	Total	%
Category one	85	72.64957	32	27.35043	117	6.689537
Category Two	478	85.66308	80	14.33692	558	31.90395
Category three	868	81.50235	197	18.49765	1065	60.89194
category four	6	66.66667	3	33.33333	9	0.51458
Total	1437	82.16123	312	17.83877	1749	100

Source: Primary Data (2021)

Table 1 shows that most of the student from IPRC Kigali their family are categorized in 3 categories 60.891% of all students their families are in ubudehe category 3 , 31.90% are in ubudehe category number 2 and 6.68% are in first ubudehe category this means most of students grown up in poor families the life condition at which they live in can affect negatively their academic performance because all of them are supported by Government to pay tuition fees even if the quality assurance practices are properly applied in IPRC Kigali, the impact family background can affect students' academic performance. Moreover, family back ground contributes more to the program completion rate.

4.1.2 Program completion rate

Table 2 Number of Students at IPRC Kigali since 2012 up to 2019

Year	Students In IPRC Kigali	Year	Students Graduated
2012/2013	2,140		NA
2013/2014	2,420		NA
2014/2015	2,278		NA
2015/2016	2,597	2015	485
2016/2017	3,151	2016	524
2017/2018	3,584	2017	660
2018/2019	3,185	2019	NA

Table 2 shows how the students were registered in IPRC Kigali over time from the year of 2012/2013 to 2018/2019 as the data demonstrate the number attend IPR Kigali was increased over time from 2140 students in 2012/2013 and 3584 students in 2016/2017 then the number was decreased to 3185 in 2019 because of different TVET policy strategy prepared for reforming TVET program this increase over time is the output of quality assurance practices implemented in IPRCs to the academic performances. After analyzing the situation of how the students was registered over time the researcher thought about graduation students as shown in table 4.2 the graduated students also increased over time.

4.2. The quality assurance practices at IPRC Kigali

4.2.1 Training Curricula

Table 3 Training Curricula

Statements	SA		A		N		D		SD	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
I am satisfied with the content taught in my program	83	26.3	135	42.7	54	17.1	15	4.7	29	9.2
The training given to me increases my knowledge and skills	109	34.5	164	51.9	30	9.5	7	2.2	6	1.9
Students are satisfied with the Quality of Academic Programmes	69	21.8	128	40.5	74	23.4	13	4.1	32	10.1

According table 3, approximately 69 % of respondents (26.3 % strongly agreed and 42.7 % agreed) are satisfied with the content taught in their respective programs, 86.4 % (34.5 % strongly agreed and 51.9 % agreed) agreed that the training given to them increases their knowledge and skills and 62.3 % (21.8 % strongly agreed and 40.5 % agreed) are satisfied with the quality of academic programs.

4.2.2 Facilitation techniques

Table 4 facilitation techniques

Statements	SA		A		N		D		SD	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Students are able to ask for clarity either during or after the session	125	39.6	132	41.8	51	16.1	5	1.6	3	0.9
Students are grouped for discussion in the learning sessions for better understanding	178	56.3	87	27.5	31	9.8	15	4.7	5	1.6
Students are given chance to freely have hands on equipment doing practical sessions interact with apparatus for practical sessions	107	33.9	122	38.6	49	15.5	23	7.3	15	4.7
Students in IPRC are happy with all teachers facilitation	61	19.3	164	51.9	40	12.7	40	12.7	11	3.5

Table 4 shows that 81.4% of respondents agreed that a room is given to ask for clarity either during or after the session and are usually grouped for discussion in the learning sessions for better understanding. It also shows that students are given chance to freely have hands on

equipment doing practical sessions interact with apparatus for practical sessions in IPRC Kigali at the rate of 60%.

4.2.3 Training Resources

Table 5 Training Resources

Statement	SA		A		N		D		SD	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
IPRC has enough teaching materials, tools and equipment	142	44.9	110	34.8	37	11.7	22	7	5	1.6
IPRC has a well-stocked library	85	26.9	124	39.2	63	19.9	27	8.5	17	5.4
IPRC has a practical room /workshop for each programme	149	47.2	105	33.2	31	9.8	25	7.9	6	1.9
In IPRC here are Computing facilities, ICT, Internet connection	66	20.9	68	21.5	85	26.9	49	15.5	48	15.2
The IPRC has Learning facilities	101	32	130	41.1	39	12.3	28	8.9	18	5.7
Students have easy access to Course materials (Handouts, notes, course outlines etc.)in IPRC	93	29.4	103	32.6	61	19.3	23	7.3	36	11.4

Table 5 shows that 79.7 % of respondents agreed that IPRC has enough teaching materials, tools and equipment, there are more evidences approximately 80.4 % to conclude that IPRC has a practical room/workshop for each programme and other learning facilities. And 55.1 % of respondents also agreed that In IPRC here are computing facilities, ICT, Internet connection.

4.2.4 Assessment and evaluation

Table 6 Assessment and evaluation

Statement	VD		D		N		S		VS	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Variety of assessment methods used	30	9.5	43	13.6	105	33.2	93	29.4	45	14.2
Clarity of assessment and marking criteria	22	7	53	16.8	106	33.5	100	31.6	35	11.1
Promptness of feedback	26	8.2	38	12	161	50.9	59	18.7	32	10.1
Effectiveness of feedback mechanisms	25	7.9	22	7	153	48.4	67	21.2	49	15.5
Overall teaching and assessment practices motivates the teaching learning session	29	9.2	44	13.9	54	17.1	131	41.5	58	18.4

Table 6 shows that level of satisfaction of the respondents participated in this study about the with variety of assessment methods used in IPRC Kigali is 43.6% and approximately 42.7 % for clarity of assessment and marking criteria. The findings also revealed that respondents are not satisfied with the promptness of feedback at a rate of 28%, effectiveness of feedback mechanisms at a rate of 26.7% and are satisfied by the overall teaching and assessment practices at a rate of 60%.

4.3 Students' academic achievement at IPRC Kigali

Table 7 Students' academic achievement at IPRC Kigali

Statement	VD		D		N		S		VS	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Practical skills	21	6.6	25	7.9	69	21.8	125	39.6	76	24.1
Critical thinking and reasoning skills	14	4.4	40	12.7	57	18	138	43.7	67	21.2
Problem-solving skills	21	6.6	32	10.1	91	28.8	117	37	55	17.4
Oral and written communication skills	12	3.8	22	7	79	25	119	37.7	84	26.6
Research skills and practices	27	8.5	21	6.6	107	33.9	98	31	63	19.9
Your overall preparation for a professional career	22	7	15	4.7	81	25.6	122	38.6	76	24.1
Students in IPRC are happy to attend their courses	12	3.8	26	8.2	44	13.9	139	44	95	30.1
Students attend their lectures frequently	12	3.8	16	5.1	23	7.3	154	48.7	111	35.1
Majority of Students who enroll for IPRC courses complete their programmes and graduate	20	6.3	19	6	68	21.5	124	39.2	85	26.9

Table 7 shows that program completion and competence acquisition at IPRC Kigali are at good level whereby students at IPRC Kigali are satisfied with competences acquired in terms of hands-on and practical skills, Critical thinking and reasoning skills, Problem-solving skills, oral and written communication skills and that are happy to attend their courses and their lectures frequently.

4.4 Regression Analysis and Correlations

The general objective of this research was to assess the relationship between Quality Assurance Practices and Students' Academic Performance in IPRC (Kigali) in Kicukiro District – Rwanda and the research were guided with three specific objectives which are to examine the quality assurance practices in IPRC (Kigali) in Kicukiro District Rwanda, to determine the level of Students' Academic Performance in IPRC (Kigali) in Kicukiro District – Rwanda ,to establish the relationship between Quality Assurance Practices and Students' Academic Performance in IPRC (Kigali) in Kicukiro District - Rwanda , the findings were analyzed using correlation and regression.

Table 8 Correlations

Correlations		Facilitation	TC	TR	AE	Performance
Facilitation Techniques	Pearson Correlation Sig. (2-tailed)	1				
Training curriculum	Pearson Correlation	.555**	1			
	Sig. (2-tailed)	.000				
Training Resource	Pearson Correlation	.575**	.599**	1		
	Sig. (2-tailed)	.000	.000			
Assessment and Evaluation	Pearson Correlation	.762**	.876**	.434**	1	
	Sig. (2-tailed)	.000	.000	.000		
Students' Academic Performance	Pearson Correlation	.790**	.865**	.604**	.644**	1
	Sig. (2-tailed)	.000	.000	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

The Pearson correlation coefficient was generated at 0.05 significance level (2-tailed). The output indicates a strong positive relationship between Academic Performance and facilitation technique s with ρ =0.790. The p-value =0.000<0.05, significant at 0.05 level as the correlation matrix indicates. There is a strong positive relationship between Academic Performance and Training curriculum with ρ= 0.865, and P-Value=0.000<0.05, significant at 0.05 level as the correlation matrix indicates. There is a moderate positive relationship also exists between Academic performance and training resources with ρ = 0.604 and the p-value=0.000<0.05, significant at 0.05 level as the correlation matrix indicates. There is a moderate positive relationship also exists between Academic performance and Assessment and Evaluation with ρ = 0.604 and the p-value=0.000<0.05, significant at 0.05 level as the correlation matrix indicates.

Table 9 Regression Analysis model summary

Model	R	R Square	Square	Std. Error of the Estimate
1	0.558[a]	0.5312	0.5303	.708

a. Predictors: (Constant), assessment and evaluation, facilitation techniques, training curriculum, training resource

There is also a strong positive relationship also exists between facilitation techniques, training curriculum training resources and assessment and evaluation with ρ= 0.762,0.867 respectively and the p-value=0.000<0.05, and a moderate positive association between assessment and evaluation and training resources with ρ=0.437 and P value = 0.000 less than 0.05, which is significant at 0.05level as the correlation matrix indicates There is a moderate positive

relationship also exists between facilities technics, training curriculum and with training resources ρ = 0.0575,0.599 and the p-value=0.000<0.05, significant at 0.05level as the correlation matrix indicates. And there is a relationship between facilitation techniques and training curriculum.

The results on Table 9 showed that Quality assurance practices had explanatory power on academic Performance as it accounted for 53.12% of its variability (R Square = 0.5312) on Model, hence the model is a good fit for the data. This implies that there is a positive relationship between quality Assurance practices (facilitation techniques, Training curricula, Training resources, Assessment and Evaluation) and Academic performance.

Table 10 Anova analysis anova[b]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	70.557	4	17.639	35.226	.000[a]
Residual	155.731	311		.501	
Total	226.288	315			

a. Predictors: (Constant), Assessment and Evaluation, facilitation techniques, Training curriculum, Training Resource

    b.   Dependent Variable: Performance

Table above presents the analysis of variance of the study on quality assurance practices (facilitation techniques, training curriculum, training resources, assessment and evaluation) and academic performance). The results reveal that a significant relationship exists between quality assurance practices (facilitation techniques, training curriculum, training resources, assessment and evaluation) and students' academic performance (F = 35.226.839, p = 0.000) as indicated in Model

Table 11 Coefficients

Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.603	.281		9.263	.000
	Facilitation	.020	.011	.106	1.741	.0083
	Training	.022	.017	.084	1.326	.018
	Training Resource	.015	.006	.156	2.451	.015
	Assessment and Evaluation	-.072	.010	.375	7.314	.000

a. Dependent Variable: how can you rate the training impact on your institutional performance?

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$ Regression equation is $Y = 2.603 + 0.106X_1 + 0.084X_2 + 0.156X_3 + 0.375X_4 + \cdots$ Y=Quality assurance practices, β_1, β_2, β_3, β_4 Are parameters to be estimated The independent variables X1= facilitation technique s , X2= Training curriculum, X3= Training Resource and X4= Assessment and Evaluation. According to the table above shows the influence of quality Assurance practices (facilitation techniques, Training curriculum,

Training resources, Assessment and Evaluation) on Students' Academic performance. he following null hypothesis was tested: H01: There is no significant influence of Quality assurance practices on the Academic performance. Regression analysis was conducted to empirically determine whether quality Assurance practices (facilitation techniques, Training curriculum, Training resources, Assessment and Evaluation) had significant influence on academic performance.

From the interview responses, respondents revealed that their level of satisfaction with trainers in IPRC Kigali is very good and they all mentioned that the academic achievement of IPRC Kigali students is high. This is supported by tracer survey and employer satisfaction survey conducted for TVET graduates of 2015/2016 academic year and HE graduates of 2014/2015 academic year where findings are that most graduates in TVET Polytechnics were satisfied with the quality of education in general while their satisfaction rates were 76.6% and Employers were generally satisfied with TVET graduates with the satisfaction rate of 78.2% (WDA Tracer study report).

Among challenges that faced administrators and trainers with the competencies of the trainers, most of respondents highlighted on language proficiency, lack of reading culture, lack of update on technology evolution given to trainers and industrial exposure for trainers .Some advices to IPRC on how to improve its training services were shared and most of respondent turned around empowering IPRC trainers with new technology and new teaching and assessment approaches, strengthening the monitoring and follow up of all teaching activities, providing access to E-library and other source of information and avail equipment and consumables for practical training. Surveys are conducted to every student to evaluate the effectiveness and efficiency of the module covered, monthly departmental meeting, internal and external moderation of exams conducted, existence of Quality Assurance Unit, Availability of Academic regulations, availability of monitoring and auditing plan for all departments were highlighted among institutional policies, models, methods and procedures that IPRC Kigali have in place to assure the quality of the academic offerings.

When asked necessary conditions and resources required for the effective implementation of a Quality Assurance System that really effect change in the quality of teaching and student learning in at IPRC Kigali, their answers included: provision of Technical and pedagogical training of trainers, increase the number of trained personnel in quality Assurance unit avail tools, equipment and consumables on time to facilitate practical works. Greatest obstacles/challenges to improving the quality of teaching and learning at IPRC Kigali expressed by respondent include: implementation of Quality Assurance systems without training of Quality Assurance personnel, shortage of equipment and consumables to strengthen hand-on skills and shortage of Training of Trainers and trainers' industrial exposure. 73.6 % of interviewed staff responded that academic programs in IPRC Kigali respond to the labour market needs and assert that private sector/companies are not fully engaged in IPRC Kigali academic offering but participate in some of institutional activities: consultation in curriculum development and review process, consultative meeting on how to improve the Quality of TVET education, industrial attachment of students while 26.4 % disagreed that private sector is not really engaged; it is just a formality.

Regarding the first objective of this study which was intended to examine the quality assurance practices in IPRC (Kigali) in Kicukiro District – Rwanda; the study findings reveal that the use of appropriate facilitation techniques that create a conducive learning environment, Training Curriculum that respond to the labour market needs, availability training resources and qualified

academic staff, effective assessment of students' achievement and evaluation of training program are Quality Assurance Practices in IPRC (Kigali). In addition, surveys are conducted to every student to evaluate the effectiveness and efficiency of the module covered, monthly Departmental Meeting, Internal and External Moderation of exams conducted, existence of Quality Assurance Unit, Availability of Academic rules and regulations, availability of monitoring and auditing plan for all Departments were highlighted among institutional policies, models, methods and procedures that IPRC Kigali have in place to assure the quality of the academic offerings.

Assessment involves generating and collecting evidence of achievement, evaluating this evidence against the outcomes, recording the findings of the evaluation, and using the information to assist the learner's development and improve the process of learning and teaching. Assessment is used for a variety of reasons, including individual growth, development, and promotion (DoE 2001). One of the most important internal quality assurance mechanisms in higher learning institutions is the evaluation of teaching and learning by students and lecturers' peers. This is also underpinned by the findings of Greimel Fuhrmann and Geyer (2003) arguing that students' evaluation of teaching gives students the opportunity to reflect to the lecturer his or her strengths and weaknesses. This also shows lecturer accountability to students as the lecturer will have to address weaknesses in order to enhance teaching and learning. Such feedback assists the lecturer to understand what students require from him or her and adopt teaching styles that suit the needs of the students. Chen and Hoshower (2003) also note that: Student evaluations of teaching effectiveness are commonly used to provide formative feedback to faculty for improving teaching, course content and structure.

In the framework of producing highly skilled graduates with technical and hands-on skills required to create jobs and capable to compete at regional and internal labour market, Rwandan TVET Education offers a mechanism to closely link TVET institutions with industries. Students receive a practical and theoretical courses with emphasize on skills development, onsite operations, practice and industrial attachment and research and innovation culture is also cultivated (TVET policy 2015). TVET infrastructures are physical and e-facilities component of TVET delivery and play a vital role in ensure the quality of TVET delivery. Those facilities have their own particularity in their nature based on the fact that TVET delivery requires special infrastructure and equipment for proper acquisition of hands-on and technical skills whereby the practical part of the training is supposed to cover 70% of the training period. According to TVET policy (2015), in order to provide and maintain quality, training should normally be linked to accomplishing all training aspects under acceptable training environment, curriculum (training activities and assessment), training infrastructure, equipment, and adequate training consumables.

Concerning the second objective which was intended to determine the level of students' academic performance in IPRC (Kigali) in Kicukiro District. The findings of this study revealed that program completion and competence acquisition at IPRC Kigali are at good level. This is explained by program completion rate analyzed through second data collected by IPRC Kigali in from 2012 to 2019 Academic years' intervals. Those data extracted from the database have shown that the students attended IPRCs was increased over time and those who graduated in that time also was increased over time. This also is confirmed by the majority of students who participated in this study at a rate of 66.1 % (26.9 % Very satisfied, 39.2 % satisfied) confirmed that who enroll for IPRC courses complete their programs and graduate. 64.9 % (21.2 % Very

satisfied, 43.7 % satisfied) of respondents who participated in this study affirm that they are satisfied with competences acquired in terms of hands-on and practical skills, Critical thinking and reasoning skills, Problem solving skills, Oral and written communication skills and that are happy to attend their courses and their lectures frequently in IPRC Kigali. These findings were also supported by the results of interviews with administrators and trainers of IPRC Kigali where 95% of respondents mentioned that the academic performance of IPRC Kigali students is high. This is also explained by the tracer survey and employer satisfaction survey exercise conducted for TVET graduates of 2015/2016 academic year where findings show that most graduates in TVET Polytechnics were satisfied with the quality of academic offerings at a rate of 76.6% and Employers were generally satisfied with TVET graduates with the satisfaction rate of 78.2% (WDA Tracer study report).

Concerning the third objective of the study, it was intended to establish the correlation between Quality Assurance Practices and Students' Academic Performance in IPRC (Kigali) in Kicukiro District – Rwanda; Findings on correlation and regression analysis indicated that there is a significant influence of facilitation techniques, training curriculum, training resources and assessment and evaluation and contribute more to students' academic performance in IPRC Kigali. This implies that there is strong relationship between quality assurance practices and students' academic performance in IPRC Kigali. This is illustrated by finding of the research where (Fisher Distribution F = 35.226.839, Probability Value p= 0.000) as indicated in Model. Even if the quality assurance practice be implemented in IPRC and have a significance impact on academic performance; the study revealed also that family back ground contributes more to the program completion rate. This is shown by findings of this study where most of the student from IPRC Kigali their family are categorized in three categories; 60.891% of all students their families are in ubudehe category III, 31.90% are in ubudehe category number 2 and 6.68% are in first ubudehe category this means most of students have grown up in poor families. Thus, the life condition at which they live in can affect negatively their academic performance because all of them are supported by Government in terms of payment of tuition fees and living facilities.

The researcher finds that there is a political will to improve and enhance the quality and relevance of TVET Education and this has a great influence to the academic performance in IPRC Kigali. This is illustrated by Rwandan National TVET Policy which objectives comprise of: Improved understanding of skill needs in priority sectors, Develop the human capacity within the TVET system, Improve TVET facilities and its sourcing, Expand the availability of the responsive curriculum offer in TVET, Improving the attractiveness of TVET, increased employer engagement in TVET (Rwandan TVET Policy 2015).

5.0 Conclusion

The conclusions were based on the objectives of the study, quality assurance, academic performance and intermediate variables which were composed of different indicators including facilitation techniques, training curricula, training resources, assessment and evaluation, competence acquisition, program completion rate, family back ground, National TVET Policy. Based on data collected and analysed, the research can conclude that quality assurance practices has a significance influence to the academic performance.

6.0 Recommendations

Basing on the findings of the study, the necessary recommendations were forwarded to TVET decision makers, IPRC Kigali management committee. The following are recommendations:

- ➢ IPRC KIGALI should have a clear and sustainable Professional Development Plan for its academic staff mainly for technical and pedagogical upgrades and Industrial exposure in order to cope with new technologies and modern learning approaches

- ➢ IPRC Kigali should strongly improve training equipment, machinery and materials for practical training at all levels;

- ➢ IPRC Kigali to plan how to provide some services to the public as Production Unit for income generating to complement the ordinary budget from government and create opportunities for students' practices as if they are in real world of work.

- ➢ In achieving the goals and objectives of academic provision at IPRC Kigali and TVET in Rwanda, the quality of the programme needs to be improved, sustained and match with needs at labour market.

- ➢ The government's effort should be considerably increased especially by financing training resources(consumables) and ensure engagement of private sector in TVET education system in order to improve access, quality and enhancing the relevance of TVET Education system in Rwanda.

Acknowledgments

Conflicts of Interest

The authors declare no conflicts of interest

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