RELATIONSHIP BETWEEN TEACHER TRAINING PROGRAMMES AND THE

ACADEMIC PERFORMANCE OF MALE STUDENTS IN THE ANGLOPHONE

CARIBBEAN

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Approval of the Thesis

RELATIONSHIP BETWEEN TEACHER TRAINING PROGRAMMES AND THE ACADEMIC PERFORMANCE OF MALE STUDENTS IN THE ANGLOPHONE CARIBBEAN

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Abstract

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CARIBBEAN

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Despite the scholarly discourse around male educational underachievement in the Anglophone Caribbean, no clear link has been made between the way teachers are taught to teach and male underperformance. This explanatory sequential mixed-method investigation is thus an attempt to widen the discourse on factors affecting male academic achievement by examining the relationship between teacher training programmes and male academic performances. Through the employment of a mixed methodology to collect and analyse data quantitatively and qualitatively through web-based surveys and semi-structured interviews respectively, this dissertation examines the structure, theoretical and pedagogical practices underlying teacher training in the Anglophone Caribbean. Snowball sampling of 100 preservice and in-service teachers and a purposeful sampling of four curriculum directors from Jamaica, Guyana, Trinidad, and Barbados were critical to the investigation. Multivariate and univariate analysis of quantitative data using SPSS software and thematic qualitative data analysis using the NVivo software supported the findings that teacher training programmes in the Anglophone Caribbean impact the learning and performance of male students. Likewise, findings elucidate that current training programmes are inadequately addressing the prevailing issues of male

underachievement, thus the need to augment them in particular areas of pedagogical practices, indigenous theoretical principles and gender-friendly curricula to enhance classroom practices and by extension male academic performances. Thus, the study has strong implications for educational practice and can be used to expand the discourse of educational reforms and male academic performance in the Anglophone Caribbean.

Declaration

I declare that this thesis has been composed solely by myself and that it has not been submitted, in whole or in part, in any previous application for a degree. Except where states otherwise by acknowledgement, the work presented is entirely my own.

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Dedication

This has no doubt been a very challenging and laborious journey which would not have been successfully realized without the help of my extraordinary support group. This paper is dedicated to my mother, who left us too soon so I could not get to see or experience my many achievements; my husband who supported me all the way and was my tower of strength in the many times I almost gave up on completing this study. To my father, brothers, and friends whose prayers, unconditional support, and continuous encouragement have helped me throughout this project, especially, at times when I wanted to give up.

Acknowledgement

To begin, I must give God thanks for the energy and forte as well as the valour to be able to take on this project and throughout this journey. This study would not have otherwise been possible. Besides, the researcher is indebted to several individuals who have extended themselves in various ways from the inception to the completion of the study. Whether through counsel, or encouragement, not to mention those who comforted me and provided solace when things got a bit crazy. In addition, immense gratitude must be extended to the many colleagues and lecturers who offered their expertise and wealth of information that have helped to make this research completion a reality. I especially want to extend heartfelt appreciation to Dr. Chrysa Tamisouglou, for her diligent tolerance and direction. It is her invaluable knowledge and comprehension of research and in particular, the topic under review that has piloted me throughout the investigation. Appreciation also goes out to my friends and colleagues who have been a major source of support and strength throughout when illness coupled with the stress of work and school almost became too much. It would be erroneous to leave out the staff and support team at UNICAF who aided and provided advantageous environs suitable for the advanced, critical and creative thinkers, as well as for the provision of adequate research databases. My greatest gratitude is extended to my husband, father and siblings for their encouragement and inspiring words throughout the entire process.

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1. CHAPTER 1: INTRODUCTION

1.1: Overview

No other topic has drawn greater controversy or is more debated within modern academic discourse than the factors affecting students' academic achievements or lack thereof, predominantly, that of boy's underachievement. The discourse surrounding boys' academic performance has arrested the attention of academia across the globe and the Anglophone Caribbean has not been spared. So much so, that for the last two centuries, there has been a plethora of literature discussing several of the possible factors that might have led to this social phenomenon. As a result, governments and education ministries throughout the region have dedicated considerable resources and implemented several interventional strategies in an attempt to solve the problem (Cobbett & Younger, 2012). However, if the numerous academic literatures of the twentieth century (20th) on the discrepancy between girls' and boys' academic performances is anything to go by, then, as a region we are in a crisis (Bailey, 2003; Chevannes, 2001; Everington et al., 1996; Figueroa, 2009; Miller, 1986, 2003; Lindsay, 1997, Lindsay, 2002). From the 1960s to the late 1970s such discourse, however, was centred on the unequal or inequitable treatment of girls within the education system, the world of work and the wider society, which led to a situation "where girls win but boys seemed to have lost in the process," posited Epstein et al. (1998, p.15). According to Mark Figueroa (2009), gender achievement in the English-speaking Caribbean has undergone dramatic changes within the twentieth century, where boys, unfortunately, became the underachievers, especially in the higher educational sphere, as opposed to previous decades where the reverse was true.

Thus, in attempting to remedy the perceived inequity within the education system there leads to the situation referred to by Parry (2000) as "gendered education" structured in such a way that greatly benefited the female gender while disadvantaging males. As a result, since the early 1990s, the discourse on educational achievement globally has shifted to the public debate of male underachievement. So much so, that thousands of scholarly articles, papers and books have been written to address this global phenomenon (Barriteau, 2004; Burns, 2006; Carrington, 2008; Griffin, 2010; Odih, 2002; Parry, 2000; Sander et al., 2009; Smith, 2018). This issue of male underachievement has been of predominant concern to the Anglo-phone Caribbean as it resonates in the words of Lindsay, whereby she notes that "it is one of the few regions in the world where secondary school enrolment of girls exceeds that of boys" (Lindsay, 1999, p.4). From as early as 1992, statistics revealed that almost 70 per cent of all graduates from the region's top educational institutes were females and this number continues to increase throughout the years (Lindsay, 1999). Many academic scholars have also put forward the idea that the perception of masculinity learned by boys in the Caribbean might be the underlining factor affecting their educational achievement or lack thereof (Bailey, et al., 2002; Chevannes, 2001; Epstein, et al, 1999; Francis, 2000; Miller, 1999; Plummer, 2005, 2007; Reddock, 2004). Some scholars even argued that the issue is related to the excessive feminization of the curriculum and the inadequate or absence of male role models within the classroom (Coffey & Delamont, 2000; Haywood & Mac An Ghaill, 2013; Odih, 2002; Waverer-Hightower & Skelton, 2013). At the same time, other researchers postulated that the classroom atmosphere, school climate and curriculum and even teachers' perception of teaching and learning are at the root of the matter (Avery & Walker, 1993; Cole, 2012; Francis, 2000; Thompson, 2017). However, only minimal Caribbean discussions have come to the fore successfully challenging the notion of

male underachievement (Chevannes, 1999; Lindsay, 1997; Bailey, 1997). This is because evidence-based research remains limited within the Caribbean. While there is an enormous amount of scholarly research discussing the prevailing and alarming issue of male underachievement within the Caribbean and the globe at large, they tend to concentrate their explanation predominantly on the social, economic and political issues at play (Cobbett & Younger, 2012; Jha & Pouezevara, 2016; Plummer, 2005; Thompson, 2017). Albeit to the almost exclusion of significant educational factors such as the way teachers are trained about how boys learn.

Studies concerning the perennial issue of male underachievement and its impact on Caribbean societies continue to dominate scholarly discourse causing extreme concern for national and regional policymakers. As a teacher and an Assistant Examiner of the Caribbean Advanced Proficiency Examinations (CAPE), the issue of males' dismal performances has become an issue of personal concern. This concern is not merely based on the notion that students' low academic performances are often blamed on the teachers within the classroom, but also on the fact that this is the cry of many of my colleagues and educational ministries across the region. Data from the annual reports from the regional Examination body also indicates that females continue to outperform boys in all areas. Hence this has influenced the decision to investigate the main educational factors that might be affecting male underperformance. This has led to self and pedagogical examinations to determine what educational practitioners have done and are doing to facilitate, engage and enhance male learning. This pedagogical and practical examination led to the realization that the theoretical and pedagogical training that one undergoes as a student-teacher is not adequate preparation for the realities of the classroom. Thus, this led to further research into how boys learn and how classroom teachers can utilize

practical strategies to get them engaged. This yields tremendous results within the classroom as well as for the overall academic outcome of many male learners. As a result, the researcher began to take a more critical look at teacher training programmes from whence several critical questions emerged. These critical questions have thus influenced the decision to investigate the possibility that teacher preparation programmes are not adequately providing teachers with the requisite skills for teaching diverse learners more so male learners. Thus, the need exists to expand the discussion on male underachievement beyond just an examination of relational socio-economic and political factors to further explore the issue in terms of teacher preparedness. As such, this study will prolong the argument of male underachievement by examining the role that teacher preparation and their pedagogical practices play in the ongoing phenomenon within the Anglophone Caribbean.

1.2: Overview of Teacher Education in the Anglophone Caribbean

The Anglo-phone Caribbean consists of those countries in the Caribbean whose official language is English and them having a shared history of being former colonies of Britain. As George (2016) posits though these countries obtained political independence from Britain decades ago educational independence is yet to be achieved. In that, the teaching and learning systems within the area are an undeviating model of the British system which is predominantly academically and examination-driven. The general focus of the system of education throughout the Anglophone Caribbean is therefore highly content-driven and teaching and learning are thus aligned which places a considerable amount of pressure on students to memorize and regurgitate information. The Anglophone Caribbean system of education is also extremely selective and competitive where sorting and streaming are the norms and one's position in the society is based on whether or not he or she is successful at these examinations (Coates, 2012). Likewise, as

Hackett (2004) posits the educational system across the Anglophone Caribbean is mainly focused on auditory and visual teaching and learning styles to the almost exclusion of tactile and kinesthetics learning styles. The latter of which boys seem to gravitate more readily towards leading to the conclusion that the general structure of teaching and learning across the region might be directly linked to male underachievement.

Data coming out of the Caribbean Examination Council (CXC) the local examining body shows that girls continue to outperform boys at regional examinations which leads to a high female concentration across the region's tertiary educational level. This, therefore, translates into a larger quantity of females in teacher training institutions than males. (George, 2016). Teacher training within the Anglophone Caribbean ranges from a three-year Diploma or certificate training in established teacher training colleges with a supplemental two- years of training at the university level to be considered degree trained, or a three-year teaching degree programme at the university level to the present situation of a four- years bachelor's degree programme. All of these programmes include content and pedagogical training with a practicum component where these preservice teachers acquire at least three months of practical classroom experience they take part in the actual process of teaching and learning (Steinbach, 2012).

However, aside from spending numerous hours in lectures learning content knowledge or educational learning theories, there is no real form of inquiry-based learning taking place within teacher training institutions. Similarly, just as the wider educational system is predominantly based on examination where success is based on the quality of passes and not necessarily on whether one acquires knowledge teacher training is also predominantly based on passing examinations (Jennings, 2001). Added to this, teaching and learning within teacher training institutions constitute part of the wider acceptable norm of traditional teaching which is solely

teacher-centred and lacks students' participation and engagement. As such, these programmes often focus and instructing preservice teachers on how to acquire and teach content knowledge with a focus purely on the dissemination of information rather than how to learn. As a result of this teaching in teacher training institutions tends to be direct replicas of the secondary system and an excellent teacher is seen as being able to get students to memorize and regurgitate content to pass examinations and not necessarily one who teaches critical thinking skills (Steinbach, 2012). As researchers (Coates, 2012; George, 2016; Miller, 2000; Steinbach, 2012; Thompson, 2017) have concluded, such lack of empirical, enquiry-based and participatory learning by preservice teachers leading to limited pedagogical and is thus transferred into the extended classroom setting which might be directly undermining academic achievement. As such, they have argued that the focal area of the Anglophone region's educational organization that requires critical reform and restructuring is improved instructional methodologies. Thus, educational reform must begin with the way teachers are trained to teach.

1.3: Statement of the Problem

The educational landscape in the Anglophone Caribbean is marred by a significant challenge: the underperformance of male students. Notwithstanding the plethora of studies concerning the presumed male marginalization and educational underachievement within the Caribbean (Bailey, 2003; Barriteau, 2004; Burns, 2006; Carrington, 2008; Chevannes, 2001; Cobbett & Younger, 2012; Griffin, 2010; Odih, 2002; Parry, 2000; Sander & Mercer, 2009; Smith, 2018) and the implementation of the United Nations 2030 Sustainable Development Goals of which Goal 4 speaks to the elimination of gender disparity within education, the Anglophone Caribbean is still struggling with the issue of gender inequalities within Education (Caribbean Development Bank CDB, 2018). This issue is intricately tied to the prevailing

practices within teacher training programmes, which exert a substantial influence on the academic achievements of this demographic. Within the teacher training domain, prevailing practices often lack a tailored approach to address the unique learning needs of male students. Traditional instructional methodologies predominantly used in these programmes might not adequately cater to the diverse learning styles and preferences exhibited by male learners (Cobbett & Younger, 2012). Emerging trends underscore the necessity of an inclusive educational framework that recognizes and integrates gender-specific strategies into pedagogical approaches (Smith, 2018).

This is supported by the annual statistical report from the Caribbean Examination Council (CXC) for the Caribbean Secondary Education Certificate (CSEC), the Caribbean Advanced Proficiency Examination (CAPE) as well as the Caribbean Primary Exit Assessment (CPEA). All of which illustrated the continued lower performances and overall passes of boys when compared to girls across the region (CXC, 2018-2021). Likewise, data from the Ministry of Education Youth and Culture (MOEYC) Jamaica Primary Exit Profile (PEP) annual reports indicated similar trends. These annual performances by gender report the gender disparity in the performance of Caribbean learners from the primary stage through to the advanced studies. See Table 1 and Table 2 below for a glimpse of the overall performance picture as outlined by these reports. Similarly, data from the University of the West Indies (UWI) for the last 5 years observed that across all campuses females recorded at least 70% of the enrolment and graduating population (Turner-Jones, 2020). Besides, it is noted that for every 100 females that enrolled in the institution between 2019-2021, there were just around 30 males. As such it is clear to conclude that the highlighted gender performance gap of Caribbean learners is an ongoing trend.

Table 1:1

Caribbean Primary School Students' Annual Performance by Gender

	Primary Exit Profile (PEP)				Caribbean Primary Exit Assessment (CPEA)			
	2018 % Pass	2019 % Pass	2020 % Pass	2021 % Pass	2018 % Pass	2019 % Pass	2020 % Pass	2021 % Pass
Males								
Highly Prof.	7.0	10.5	11.8	4.2	20.0	10.4	18.3	17.0
Proficient	38.0	36.7	56.7	41.0	58.6	54.0	60.3	66.0
Developing	30.0	27.2	14.0	40.0	10.4	17.25	16.9	12.7
Females								
Highly Prof.	11.0	14.1	17.0	5.6	24.5	21.7	22.5	20.2
Proficient	55.0	53.3	69.0	51.0	68.2	75.3	72.2	73.5
Developing	30.0	27.2	14.0	40.0	5.1	3.0	5.3	7.3
% Overall Diff.	9.0	14.7	10.0	4.6	11.0	18.4	4.4	4.8
% Top Tier Difference	21.0	20.2	16.1	11.4	14.1	32.6	15.1	11.1

Note. Table compiled from data in the CXC annual report (2018-2021) and the MOEYC annual PEP report (2018-2021) at https://www.cxc.org/cxc-annual-report- & Ministry of Education Jamaica from https://pep.moey.gov.jm/

Table 1:2

Caribbean Secondary School Students' Annual Performance by Gender

	Caribbean Secondary Education Certificate (CSEC)				Caribbean Advance Proficiency Examination (CAPE)			
	2018 % Pass	2019 % Pass	2020 % Pass	2021 % Pass	2018 % Pass	2019 % Pass	2020 % Pass	2021 % Pass
Males								
Grade 1	13.54	14.76	17.85	13.62	16.40	16.33	16.90	14.24
Grade 2	25.01	26.24	24.16	24.16	20.00	19.32	21.60	18.60
Grade 3	29.70	29.38	28.28	28.28	21.25	21.94	21.66	22.74
Grade 4					18.86	19.73	18.97	20.46
Grade 5					11.60	13.69	12.82	14.35
Females								
Grade 1	16.88	17.78	21.30	17.24	21.78	20.58	20.23	18.64
Grade 2	26.25	26.96	28.33	25.93	26.59	22.83	24.57	23.27
Grade 3	28.67	28.64	27.61	27.17	22.91	22.79	22.20	23.11
Grade 4					17.31	16.95	16.91	17.37
Grade 5					11.57	10.15	10.15	10.99
% Overall Diff.	3.55	3	3.56	4.28	3	11.78	2.55	2.03
% Top Tier Difference	4.58	3.74	5.06	5.39	9.44	13.63	8.61	6.76

Note. Table Compiled from data from the CXC annual report (2018-2021) at https://www.cxc.org/collection-annual-reports/

Amidst evolving societal norms and educational paradigms, there is an urgent need to reimagine and recalibrate teacher training programmes. These programmes must be redesigned to equip educators with the requisite tools and strategies tailored to enhance the academic outcomes of male students (Hobbs, 2015). The pressing concern lies in bridging the gap between existing pedagogies and the requisites vital for fostering academic success among male learners. Besides, the scarcity of information and data exploring the correlation between teacher training programmes and academic attainment is unfortunate since such data could expand the discourse on male underachievement beyond peripheral factors. While existing studies mostly address the psychosocial, and sociocultural factors that may affect educational outcomes (Francis, 2000; Matalon, 1998; Thompson, 2018), hardly any existing studies have looked at the link between teachers' training and boys' performance in the Anglophone Caribbean, and whether or not teachers are adequately prepared to utilize the needed teaching strategies to engage boys and enhance their learning. Rather than continuing on the trajectory of previous researchers, the fundamental emphasis of the proposed fact-finding study is to look into the correlation between the efficacy of teacher training programmes and the academic achievement of male students in the Anglophone Caribbean. By comprehensively assessing current practices and identifying critical gaps, this research aims to propose evidence-based interventions and recommendations. The findings of this study will potentially serve as a robust framework for enhancing teacher training programmes. These enhancements might create a suitable environment for the academic growth of male students in the region, addressing the current academic disparity.

1.4: Purpose of the Study

The motive of the study is to comprehensively investigate the association between teacher training programmes and the academic performance of male students within the

Anglophone Caribbean. This research aims to explore, analyse, and understand how teacher training methodologies, institutional practices, and educational policies impact the academic achievements of male students in this specific region. Employing an explanatory sequential mixed method approach, the study seeks to uncover possible correlations, delve into underlying factors, and explore the intricate dynamics that influence the educational outcomes of male students undergoing teacher training programs.

The mixed-method approach adopted in this research facilitates the examination of an assumed correlation between variables associated with teacher training programmes and male academic performance within the Anglophone Caribbean. The research design comprises two distinct yet interconnected phases: a numerical inquiry succeeded by a qualitative exploration. The initial numerical phase operates under the assumption that a correlation exists between certain elements of teacher training and the academic achievements of male students. By employing structured survey questionnaires among a diverse cohort of preservice and in-service teachers across Jamaica, Guyana, Trinidad, and Barbados, this phase seeks to identify, measure, and statistically analyse potential correlations or associations. Quantitative analysis will explore numerical patterns, statistical relationships, and the strength of associations between variables presumed to influence male academic performance. However, the assumption of correlation merely serves as a starting point for investigation, and the quantitative phase aims to confirm or refute this presumption based on empirical data collected (Creswell & Creswell, 2018).

Conversely, the qualitative component of the study operates under a different premise. While the quantitative phase assumes a correlation, the qualitative inquiry does not seek to prove or establish a correlation directly. Rather, the qualitative element promotes a deeper exploration and comprehension of the underlying mechanisms, contextual elements, and nuances which may

underpin any observed or presumed correlations. Through in-depth interviews with programme directors and analysis of institutional policies, this phase aims to unearth intricate details, perspectives, and contextual insights that may not be captured through quantitative methods alone. The qualitative analysis can unravel complexities, exploring the "why" behind potential correlations identified in the quantitative data. It delves into contextual factors, perceptions, and institutional practices, thereby contributing to a holistic understanding of the correspondence between teacher training programmes and male educational achievement within the region.

Integration between these phases is achieved at multiple levels of the research process. The triangulation of numerical and qualitative data occurs primarily during the examination and expounding stages. During this critical juncture, the rich qualitative insights derived from interviews will serve to contextualize, explain, and complement the numerical findings garnered from surveys. Moreover, the integration extends beyond the mere juxtaposition of findings; it involves a complementary relationship wherein qualitative insights elucidate the "why" behind statistical trends observed in quantitative data (Symonds & Gorard, 2010). This reciprocal enrichment allows for a comprehensive understanding of the intricate dynamics between teacher training programmes and male academic achievement within the Anglophone Caribbean. Additionally, the integrated interpretation enables the synthesis of findings to tackle the research queries holistically. The qualitative facts shed light on the contextual nuances and depth that may not be captured by quantitative analysis alone, enhancing the richness and depth of the study's conclusions.

This integrated approach aligns with the investigation's aim of putting forward a comprehensive exploration of the research question by synergizing quantitative research with qualitative depth. Ultimately, the research will directly examine service and preservice teachers'

perception of how boys learn and whether or not teacher training programmes are geared towards equipping them with the necessary strategies needed to engage male learners thus enhancing boys' educational outcomes. By so doing this research aims to contribute empirical evidence and nuanced insights that can inform educational policy reforms, curriculum enhancements, and pedagogical strategies tailored to better attend to the academic requirements of male learners in the Anglophone Caribbean context.

1.5: Research Aim and Objectives

The overarching argument of the investigation is that inadequacy in the structure of teacher training programmes within Anglophone Caribbean countries as it relates to teachers' pedagogical practices and instructional strategies as obtained through training has led to inefficiencies within the educational sector that have exacerbated the problem of male academic underachievement. This study, therefore, seeks to examine the correlation between the way educators are trained and the issue of male academic performance.

To satisfy this overarching aim, the study has three main objectives categorized as quantitative and qualitative as follows:

Research Objectives for the Quantitative Phase:

1. **To assess the impact of existing teacher training programs within the Anglophone Caribbean:** This objective aims to quantitatively evaluate the existing teacher training programmes in the Anglophone Caribbean. It focuses on investigating whether deficiencies in the structure of these programmes possess a discernible negative consequence on the academic performances of male scholars.

Research Objectives for the Qualitative Phase:

2. **To Identify and Elaborate on Critical Gaps and Deficiencies:** This objective focuses on a qualitative exploration within teacher training programmes in the Anglophone Caribbean. It aims to identify nuanced gaps and deficiencies within these programmes, particularly related to pedagogical practices and instructional strategies, impacting male academic performances adversely.

3. **To Examine Opportunities for Improvement:** This objective aims to delve deeper into how identified gaps and deficiencies can be addressed and augmented. It seeks to explore strategies that can raise gender awareness and positively impact classroom practices within teacher training programs to enhance male academic performances.

1.6: Nature and Significance of the Study

The investigator utilized the pragmatic enquiry approach using the explanatory sequential design utilizing multiple approaches for collecting and analysing data through the integration of both qualitative and quantitative methods (Creswell & Creswell, 2019). This research design has found support amongst several researchers as a unique and credible method of integrating qualitative and quantitative data (Caracelli, & Greene, 1993; Creswell et al., 2003; Greene et al., 1989; Myers & Oetzel, 2009). The numerical data from the research was evaluated using the correlational and linear regression analysis techniques, while the qualitative information was analysed through coding and themes were developed in an iterative process, which is a combination of both deductive and inductive coding. "Both quantitative and qualitative research techniques can be applicably used within any investigation," according to Guba and Lincoln (1994, p.28)"

Though the overarching goal or aim of the study lends itself to a correctional quantitative approach as a result of its relational tendency between two variables (Creswell, 2005), the

mixed-method approach is more suitable for a study of this nature. The explanatory sequential research design was employed to collect quantifiable data from preservice and professional educators using a survey data collection method by way of a questionnaire. This was followed up by a smaller qualitative study engaging programme directors from selected teacher training institutions through semi-structured interviews. This qualitative information was then used to build upon or expand the statistical findings. As Bryman (2006) posits, integrating both qualitative and quantitative research approaches within a distinct project provides the perfect opportunity for balance within the study where one approach compensates for the deficiencies of the other. Guba and Lincoln (1994) have also expressed similar views when they postulate that, the operant differences between the two main research approaches have significant implications for research by way of inquiry and interpretations. As such applied independently these approaches will be lacking. However, a combination of both where the strengths and limitations balance out each other makes for robust research. With this in mind, the mixed-method approach used in the study not only depicts whether or not there is a correction between teacher training programmes and male underachievement but also entails a discussion as to why this is or is not the present circumstance.

The Caribbean Examination Council (CXC) the main examining body across the Anglophone Caribbean conducts terminal examinations for secondary (high) school students that help to determine their readiness for graduation and further study in many fields, predominantly teacher's college or the Advanced Proficiency level and universities. Because of the analytical and interpretive skills that the Caribbean Advanced Proficiency Examination (CAPE) seeks to foster in students, a score of II or higher in the Caribbean Secondary Examination Certificate (CSEC) examination is often deemed as a high achievement at this level (CXC,2019). As such,

the credible performance of students at this level may be important to their further educational development. In this regard, the researcher has had the experience of seeing many students, predominantly males, denied governmental sponsorships and scholarships to further their studies because they did not achieve credible grades. The plethora of studies examining the factors contributing to male underachievement has concentrated predominantly on socio-economic and political factors with a minimal number focusing on educational factors such as classroom atmosphere, and teachers' perception of teaching and learning (Coffey & Delamont, 2000; Francis, 2000; Hextall, 2000; Thompson, 2017). Even more dismal are actual studies examining teacher training and academic achievement (Darling-Hammond, 2003; Edelen-Smith et al., 1993; Everington et al., 1996; Forlin et al., 2001). However, it is doubtful that any such study has been done to examine the link between teacher training programs and whether or not this may be hindering academic achievement, predominantly male academic performances.

　　　With increasing concern about male underachievement and the inadequacy of teachers' preparation within the region, a study of this nature needs to be conducted. Thus, rather than continuing on the trajectory of previous researchers, the present research will widen the discourse while addressing the gap in the research literature. Thereby, it is anticipated that the research will provide an impetus for students, teachers, policymakers, teacher training institutions, regional governments, the wider community, scholars and the researcher to delve into a deeper analysis of the issue of male academic underachievement, with emphasis on teacher training programmes. In essence, it should focus general attention on how teachers are taught to teach and the implications that this might have on male academic achievement.

　　　Students

Students are at the centre of the current study because it is their performance that is being

analysed. Therefore, by identifying the determinants that contribute to male underperformance,

the current study can help to develop effective interventions and policies to support both female

and male students to achieve academic excellence thus strengthening human resources and

leading to greater economic development.

Scholars

The study is significant to scholars first because it can contribute to the development of theories

and frameworks for understanding the complex interplay of factors that contribute to male

underachievement. Besides, the study has identified a gap in the exploration of male

underachievement in relation to teacher training, Therefore, the study can generate new

knowledge and insights about how teacher training influences underperformance, as well as the

experiences of male students in the Caribbean context, which can inform future research and

policy development. Finally, it can highlight the need for interdisciplinary and cross-cultural

approaches to studying issues related to gender and education, and promote collaboration and

dialogue among scholars from different fields and regions.

Policymakers

As the discourse on male underperformance in the Anglophone Caribbean continues, the study

will provide evidence-based insights into the elements that contribute to male underperformance,

which can inform the development of policies and intercessions geared at bettering educational

results for male scholars in the Caribbean. Additionally, the study will help raise awareness

about the obstacles encountered by male learners in the Caribbean context, and promote a more

inclusive and equitable educational system. Finally, the study can potentially stimulate dialogue

and collaboration among policymakers, educators, and other stakeholders, leading to a more

coordinated and effective approach to addressing issues related to gender and education.

Society

Education is an important component of society, and when it is in jeopardy the entire society

faces the same fate. Therefore, the study can help highlight the significance of schooling as a

way of promoting social mobility and reducing inequality, and draw awareness to the difficulties

encountered by male scholars within the community that impede their academic performance and

ultimate contribution to societal development.

Teachers

Teachers directly deal with learners and are best poised to tackle the obstacles that learners

encounter in the classroom. The literature has correlated what teachers do and say with students'

educational attainment making them the ultimate foundation thus, ill-quality training and

teachers will have domino effects on students' performance. Therefore, the study can provide

insights into effective teaching practices and interventions that can be applied by teachers to

support male students in achieving their full potential. Besides, by raising awareness about the

problems experienced by male learners in the Caribbean context, the study can inspire teachers

to develop new strategies and approaches for engaging males and furthering their educational

achievement, leading to positive outcomes for both male students and the wider educational

community.

Teacher training institutes

The study hypothesizes that teacher training institutions are a major contributing factor to male

underperformance in the Anglophone Caribbean, therefore, giving these institutions key stakes in

the study. As such, the investigation can inform the establishment of training structures and

curricula that equip teachers with the understanding and skills sets required to address the challenges faced by male students. Secondly, it can encourage a more incorporating and gender-sensitive outlook on teacher training, which recognizes the importance of addressing gender-related issues in the classroom. Besides, it can inspire teacher training institutions to partner and collaborate with key stakeholders like educators, scholars and policymakers to foster a more coordinated and effective approach to addressing issues related to gender and education.

Me (The researcher)

I am at a stage in my life where I am looking to grow and become a high achiever in both my career, and my education as well as an educational researcher focusing on exploring diverse strategies and techniques that make student learning more exciting and interesting for learners, especially male learners. Therefore, I am convinced that this investigation will further advance both the development of my research skills and work expertise, as I engage with complex issues related to gender and education not only in the Caribbean but also globally. Besides, the study has already started to provide me with important opportunities for professional networking and collaboration with fellow educators, researchers, and stakeholders in the U.S.A. as well as the Caribbean. Additionally, after completing this dissertation, I am positive that my visibility and credibility as a researcher will have been promoted, thus enhancing my professional reputation and career prospects. Finally, it can aid in the establishment of evidence-based policies and interventions that promote positive communal change and improve the well-being of individuals and communities, reflecting the broader social impact of my research.

1.7: Research Questions and Hypothesis

This research seeks to deal with the following overarching queries and hypotheses:

Research Question 1

What is the relationship between teacher training programmes and male academic performances?

RQ1a. How are teachers' attitudes towards and their perceptions of teaching and learning related to the theoretical foundations underlying their training?

RQ1b. What impact do teachers' pedagogical principles have on students' achievement?

RQ1c. To what extent are teachers exposed to a vast number of teaching strategies during the teacher training progress that will enable them to properly engage male students?

Research Question 2

How can teacher training programmes and practices in the Anglophone Caribbean be augmented to raise gender awareness and male academic achievement?

RQ2a. How can teacher training programmes in the Anglophone Caribbean be enhanced to engage male students and improve their academic achievement?

RQ2b. What strategies can be further implemented by teacher training institutions, policymakers and curriculum developers to enhance male academic achievement?

Research Question 3

What are the core beliefs and theoretical practices underlying teacher training programmes within the Anglophone Caribbean?

RQ3a: How do policymakers of teacher training institutes describe the core beliefs and practices underlying teacher training programmes?

RQ3b: What theoretical principles are considered when determining the content and fundamental theories underlying teacher training in the Anglophone Caribbean?

Research Question 4

How can changes in the overall structure, theoretical beliefs and pedagogical practices in the Anglophone Caribbean impact classroom practices and by extension male academic performances?

Hypothesis

$H1_0$: There is no relationship between teacher training programs and male academic performances within the Anglophone Caribbean.

$H1_a$: Male academic performances within the Anglophone Caribbean are related to the quality of teacher training programmes.

$H2_0$: Improvement in teacher training programmes and practices to raise gender awareness will not affect classroom practices or raise male academic performances within the Anglophone Caribbean.

$H2_a$: Improvement in teacher training programmes and practices to raise gender awareness are related to improved classroom practices and increased male academic achievement.

2. Chapter 2: LITERATURE REVIEW

2.1: Introduction

The overarching argument of this research study is that inadequacy in the structure of teacher training programmes within Anglophone Caribbean countries as it relates to teachers' pedagogical practices and instructional strategies as obtained through training has led to inefficiencies within the educational system that has exacerbated the problem of the male academic deficit. The study, therefore, seeks to investigate the association between the way educators are instructed and the issue of male academic performance. As such the study directly examines in-service and preservice teachers' perception of how boys learn and whether or not the training, they receive through respective teacher training programmes has equipped them with the requisite teaching strategies and understanding required to actively captivate male learners in the classroom to enhance their educational outcomes.

To provide background knowledge on the general topic under review as well as to place the research within context, the theoretical framework was discussed and relevant literature about the important variables of the study was reviewed. As such a wide range of illuminating literature on teachers and teachers' training and students' performance was examined under six subsections. The first subsection provides a critical analysis of the significance of teachers to the instructional and learning process and students' overall outcomes. The second subsection is geared at the examination of the literature relating to the role and significance of educators' training in the advancement of students as well as the educational system as a whole. This is followed by the section of the chapter which focuses on providing a synopsis of the Caribbean educational context in general and teacher training in specific. This is followed by the subsection which is centred on discussing scholarly arguments on the role that gender plays in student

performance. Next is the subsection that provides a scholarly discussion on the link between

teachers' attitudes, perceptions and pedagogical practices gained through training and students'

overall performance. The final subsection of this review examines literature that discussed

whether reforming and restructuring teacher training programmes will lead to pedagogical

practices and instructional strategies thus augmenting male performances.

This chapter of the study closes with a summation of what the literature offers to the

enquiry and the basic themes that need to be explored within the Caribbean educational context

in general and the Anglophone Caribbean in specific. Here the overall findings and critiques of

the literature were discussed highlighting gaps and just how the present study will contribute to

this body of existing literature thus illustrating the need for the present study.

The review includes a wide range of studies from different periods. More than 300

resources will be used for this review. Approximately 60 per cent of the resources to be used will

be less than 5 years old. The issue of performance and teachers' training has been a long and

outstanding issue that has been a matter of public interest for decades. Therefore, it was

paramount to use both new and dated sources of information in an attempt to capture the state of

the issue under review from both perspectives. The information sources to be utilized in this

review will generally come from scholarly peer-reviewed journal articles, empirical or evidence-

based articles, books, dissertations and theses, government publications and reports among

others. However, more than 80 per cent of the resources will be peer-reviewed. The other

resources that are not peer-reviewed will mostly come from government publications and reports

from the Ministry of Education from different countries. Credible sources of review centred on

the variables of the study were obtained through the use of UNICAF University's online library

resources facilitated through ProQuest library eBooks and eJournals as well as the University of

the West Indies online library resources using the EBSCOHost research databases. Other resources will be carefully searched and extracted from different online databases including Google Scholar, Government and Institutional websites among others. The sources will be evaluated before usage to guarantee that the evidence incorporated within the evaluation of the literature is accurate and dependable.

The general key terms used to search the online library were centred on the themes of the study which are teachers' and teachers' training and students' performance. Key search words and terms included male academic underachievement/performance, gender and students performance, teaching skills, pedagogical practices and students' performance, the link between teacher and students' performance, teacher training and students' development, teacher training and content delivery, content delivery and students' performance, Caribbean educational context, teacher education and training in the Caribbean, teachers' perception of teaching and learning, and teacher training and performance enhancement. Additional scholarly and influential research was obtained through search engines such as Google Scholar, Sage Journals and Publications, and the Educational Resources Information Centre (ERIC). As well as current and relevant Educational and Social Sciences peer-reviewed journals including the Caribbean Journal of Education, Economics of Education Review, The Caribbean Curriculum, Education Policy Analysis Archives, Gender and Education, Teachers and Teaching and the Journal of Educational Research were all searched as these journals primarily offered critical and analytical educational reviews and insights.

2.2: Theoretical Framework

The idea that teachers impact their students' academic achievement is currently accepted by several scholars. Many studies on classroom achievement have pointed out that teachers make

a tangible difference in the academic success of their learners. For instance, empirical studies have associated the difference in students' academic achievement with teachers' training, education, experience, attitudes, pedagogical practices, perceptions, and behaviour in the classroom environment (Althauser, 2015; Gershenson, 2016.; Harris & Sass, 2011; Sowder, 2007). While the discourse on the influence of teacher quality and behaviour and learner performance has remained widely ambiguous in some areas, there is relevant research evidence that supports the positive impact of teacher training on students' development (Angrist & Lavy, 2001; Guskey, 2000; Knoblauch & Chase, 2015; Ikram et al., 2020; Sowder, 2007). Teacher training has been reported to nurture the teaching skills, prowess, and pedagogical skills of teachers, as per the educational guidelines, resulting in the efficiency of teachers concerning content delivery as well as general pupil development (Bizimana & Orodho, 2014; Clotfelter et al. 2007; Harris & Sass, 2011; Roofe & Miller, 2013; Walker et al., 2016).

In the Anglophone Caribbean context, a lot of reports have noted a wanting trend in terms of students' academic achievement (Bruns & Luque, 2014; De Lisle, 2012; Marta Ferreyra et al., 2017). Students within the region are learning at an average of half the expected levels and are registering lower performance levels as compared to students in OECD countries (De Lisle, 2012; Gonzales et al., 2004). Noteworthy, the performance of male students is worse: boys have continued to register lower levels of educational performance and are outperformed by girls in particular academic subjects and overall performance (Clarke, 2005; Edmund-Woods, 2011; Jha & Kelleher, 2006). Studies have overwhelmingly attributed the generally poor academic success in the Anglophone Caribbean, in addition to the disparity in the performance among female and male students to the poor teaching attitudes, pedagogical practices, behaviour, and unhealthy perceptions in the classroom environment, which is attributed to the lack of competent educators

plus the poor quality of the existing teacher preparation programmes in the region (Bruns & Luque, 2014; Cook, 2016; Jennings, 2001; Stone, et al., 2020).

With this in mind, the major theoretical foundations upon which this study lies are Steele's (1995) stereotype threat and intellectual test performance, Ogbu's (1992) cultural-ecological perspective, and Anderson's (2016) optimal resource theory (ORT). Leadership for social justice theory (Bogotch, 2000) and critical theory (Horkeimer, 1993) will further be applied to support the theoretical background of the study. Both Steele's and Ogbu's theories have their root in the symbolic interactionist perspective of social interaction, gender-role socialization, and teachers' perceptions of students and how these affect performances. All these theories posit that teachers' perception of and method of instruction, as well as the overall structure of the modern educational system, influence students' academic development and the achievement margin between female and male students (Anderson, 2016; Osborne, 2001).

2.2.1: Stereotype Threat Phenomena

First, the stereotype threat phenomena is a theory developed by social psychologists Claude Steele and Joshua Aronson to explain the anxiety experienced by students when they are confronted with circumstances where they fear confirming the negative stereotypes about their social cohort: especially group members perceived as academically inferior (Steele & Aronson, 1995). Almost all teacher training programmes in the current Caribbean education systems encourage teachers to sort and group learners according to their academic capabilities (Baker, 2014; Meyer & Ramirez, 2009). This sorting of learners into tracks or streams is typically geared at aiding educators in targeting more effectively the educational needs of learners. However, learning pathways further produce stereotypical, differential beliefs and opportunities about students consequently increasing learning disparities through the suppression of the prospects for

a cohort of learners while facilitating the success of others (Carbonaro, 2005; Domina, Penner & Pener, 2017). When schoolchildren do not buy into identity stereotypes and presume that their teachers share their reduced expectations as in the case of male students across the Caribbean region, it taxes their cognitive resources and consequently academic ability.

From the time of its inauguration in the social psychological literature framework more than twenty years ago, Steele's stereotype threat and intellectual test performance have been recognized across academic spheres and thus are widely evaluated within the literature (Kit et al., 2008; Lewis & Sekaquaptewa, 2016; Spencer et al., 2016). Studies conducted by Jennings, (2001) and McKown (2004) have shown that male students in the Anglophone Caribbean become aware of negative stereotypes portrayed by teachers against them as early as the age of six and that stereotype-aware students can be vulnerable to stimuli that raise the threat of being stereotype "by increasing identity salience and performance consequences" (Wasserberg, 2014, p.20). The stereotype threat theory has aided the current study by the way it has informed the main objective. Relevant studies have argued that males are typically stereotyped within the Caribbean classroom set up by teachers, administrators, peers, and the general society at large which often affects their academic performance since they are very much aware of the stereotype and often live up to the stereotype which places their performance at risk.

2.2.2: Cultural-Ecological Theory

Secondly, John Ogbu's cultural-ecological theory of student learning outcome posits that the academic performance of minority students can either be affected by cultural norms or ecological factors. For example, how teachers and society at large perceive a certain group of students, and how they respond to those treatments can influence academic achievement (Ogbu, 1992). While the theory was specifically created to study minority immigrant students, its

concepts have been applied by different researchers to explain male academic underachievement, particularly in the Anglophone Caribbean (Eldering, 2008; Foley, 2010; Foster, 2004; Han, 2006; Kyuchukov, 2014). In the Caribbean, cultural diversity is not just a feature but a cornerstone of educational settings. The Anglophone Caribbean region presents a cultural environment that is generally different for boys as compared to girls in that, girls often view education as a means of social betterment while boys see it as rather a mechanism that is being used to control them (Jennings, 2001). Besides, both the female and male educators identify female students as much easier to instruct, less resistant or oppositional to authority, and compliant in comparison with boys. Educators argued that boys tend to attract a far greater controlling ability and willpower for them to be able to be taught, thus, making the negative perception between genders more salient, consequently affecting their performance and attitude towards education (Cobbett & Younger, 2014).

The social dynamics of society place pressure on boys to be tough, which is in total defiance of the goals of the school system again alienating boys and leading to poor academic performances. Ogbu (1992) claimed that this oppositional stance to school and the educational environment is established as a consequence of cultural-ecological factors where a boy's masculine socialization is centred on being tough, macho, and highly disruptive. Cultural-ecological theory serves as a foundational theory for the present study as it discusses several cultural factors at play within the Anglophone Caribbean that are deemed to be mitigating factors to boys' academic achievement and their attitudes towards learning. It also provided credence to the notion that educators' views of the instructional and learning process affect boys' educational outcomes.

2.2.3: Optimal Resource Theory

Thirdly, Anderson's (2015) optimal resource theory (ORT) focuses on improving students' academic success using informed teaching and best practices. Anderson describes his theory as "an anti-reproduction perspective that assesses the influence of internally controlled micro-policies and micro-practices on positive student outcomes" (Anderson, 2016, p.26). The author developed this theory by reviewing the academic performance of black males and deduced that instructional best practices and a re-examination of teaching strategies within the classroom might lead to enhanced academic performance among black males.

In the Caribbean educational landscape, resource allocation remains a critical challenge. Studies have pointed to the significance of augmenting teaching practices the to promote best pedagogical practices that enhance teaching and learning equity among students, and one major way to achieve this bottom line is through resources. The pedagogical strategies being employed by most teachers in the Anglophone Caribbean region are said to be very traditional and do not make enough provision for differentiated instructions to benefit male learners (Gurian et al., 2011; Jennings, 2001; Slee, 2018). For instance, in Jamaica, where disparities in access to technology and educational materials exist between urban and rural areas, educators face the task of optimizing available resources. Teachers engaging in innovative teaching practices leverage community resources, such as partnering with local businesses or community centres, to bridge resource gaps (Jennings, 2001). They may facilitate collaborative projects where students engage in practical activities that utilize local resources, fostering hands-on learning experiences. This approach not only compensates for resource limitations but also cultivates a sense of resourcefulness and adaptability among students, leading to heightened engagement and enriched learning outcomes.

Thus, the theory is ideal as its major hypothesis is similar to that of the present study where it is hypothesized that an improved teaching and learning process beginning at the teacher training stage will enhance boys' academic performance.

2.2.4: Leadership for Social Justice Theory

Leadership for social justice theory (Bogotch, 2000) also support the theoretical background of the current study. Leadership for social justice supports the enablement of moral discourse focused on high academic attainment for learners from all circumstances, socio-economics and aptitude levels while maintaining cognitive awareness, moral principles, and practices concerning equal opportunities. This theory fights to alter institutionalized inequities that benefit a specific group of learners while harming others. Teachers who promote inclusive teaching practices recognize and respect diverse student identities, creating a supportive environment that encourages active participation and engagement among students from varying cultural backgrounds.

According to McKenzie et al. (2008), the conceptualization of this theory reveals the underlying purpose and beliefs in the leadership of teacher training or education. Educators who embody leadership for social justice must actively engage students in discussions around social issues prevalent in their societies. The leadership for social justice theory can therefore be applied by education leaders in the Anglophone Caribbean region to promote teacher education training focused on promoting equity and a universal understanding of social justice leadership to enhance male academic achievement.

2.2.5: Critical Theory

Critical theory (Horkeimer, 1993) questions how the educational system can be augmented to offer the best and equal learning to all. It prompts educators to critically examine

the social and historical perspective of education. Critical theory, therefore, provides an understanding of the various perspectives of disadvantaged male learners in the Anglophone Caribbean. This critical examination stimulates critical thinking skills, enabling educators to engage deeply with educational content and develop a nuanced understanding of such content from diverse viewpoints. This approach not only promotes active engagement but also empowers educators to develop well-informed perspectives that consider the educational needs of every learner equally. Teacher behaviour, attitude, pedagogical practice, and the perception that only favours female students can mean issues like male underachievement and a taxed overall learning quality (Murphy & Fleming, 2010).

The theories presented herein have effectively outlined that the expectations, teaching strategies, and pedagogical practices of teachers might also be detrimental to boys' academic performances. As such, they posit that curriculum reforms where teaching values and perceptions of learning that are anti-oppositional to boys are needed if boys' academic performances are to be improved. In essence, they speak toward the development of a cultural and gender-pedagogical curriculum where the learning environment is comfortable for boys as this might significantly improve their academic performances.

2.3: Link Between Teacher and Student Performance

The notion that teachers impact the performance of their students is currently popular among the masses. Studies have confirmed that teachers indeed have a tremendous influence on their students' academic as well as their life-long success. While this is the case, not much information is known regarding particular scopes of the instructional practice that attempt to elucidate these associations or whether such effects vary among non-cognitive and academic outcomes. Much of the educational discourse concerning reform and improvement of the

educational system to enhance learners' academic success has been overly saturated with emphasis on socio-economic background, socialization, and the home environment. Placing the root cause of the overall problem with the educational system and students' performances or the lack thereof outside of the school environment itself.

Lately, much of the attention having to do with educational reform has been focused on improving the school environment itself in terms of improved curriculum and assessments, still neglecting the central significance of the role of the learning environment and teacher practices. In giving a historical perspective on this matter, Akankwasa (2018) reports that secondary teachers have a large range of effects on academic performance in addition to the behaviours and attitudes of the learners. The author estimates the teacher effects to have moderate to high-performance predictive validity. Furthermore, the performance outcome of students is predicted by their teachers' instructional practices that are most contiguous to these measures: for instance, when examining students' math achievement and comparing them to teachers' math errors, as well as to the way teachers' organized classrooms and the way learners behave within the classroom). However, teachers who often effectively improve certain outcomes are often not necessarily as effective in refining others. Collectively, the findings from Akankwasa's (2018) study afford a shred of significant empirical evidence to indicate a well-established correlation between teachers and student learning.

The significance of good teachers has been emphasized by many people, with most policies designed to promote teacher quality. A study by Browder et al. (2005) using student scores from a standardized assessment confirmed the popular opinion that some teachers more than others are more effective at presenting information thus indicating that taking lessons from a competent teacher has a significant effect on student performance. According to Adeyemi

(2010), teachers matter more to student achievement in comparison to any other schooling aspect.

While several factors might be impacting a student's educational outcome including individual personalities, and social and family pressures, research proposes that when examining school-related influences, teachers seem to be the most influential (Pedler et al., 2020). The authors further observe that student performance: particularly in logic subjects like biology and chemistry, is largely impacted by teachers compared to any other school factors, including leadership, services, and facilities (Pedler et al., 2020). Akankwasa (2018) argues that while non-school factors influence student performance, they are mostly outside the control of the institution. Some studies have also suggested that individual and family traits may sometimes have more impression on student educational attainment compared with teachers, but strategic considerations are often placed on educators since it is reportedly more convenient to propose actions and procedures to advance instruction as opposed to changing the individual traits and domestic conditions of students (Chien & Wu, 2020).

From the explanation, it suffices to indicate that effective teaching can potentially aid in levelling up the playing field. According to Li and Yang (2021), effective teachers tend to be more effective even after transferring from one school to another. Recent evidence suggests that the impact of teachers on students' performance remains practically consistent even when a tutor moves from one institution to the next irrespective of whether the new institution is more or less advanced than the former school.

Regardless, not all studies have been supportive of these notions with opponents putting up arguments that consistently associate performance with other socio-economic factors. For instance, the book published by the National Research Council (NRC) (2001) citing an early

work by Coleman et al. (1996) has noted that there is momentarily doubt being articulated concerning the presumable substantial important part played by teachers play in learners' academic performance. The authors in their argument, unashamedly elucidated that the teachers' quality and influence pale in comparison to the learners' socio-economic background in the overall argument concerning what has the most substantial influence on the learning and academic outcomes of students.

Likewise, Wenglinsky (2002) in quoting Waller (1932), opined that the actual relations among learners and teachers within the classroom are not of vital importance to students' academic performance as compared to socio-economic and school characteristics put together. He further posited that over the years several statistical studies have been piloted to examine the significant factors influencing students' academic outcomes and discussed what he referred to as school production and characteristic functions to include principals' leadership, and schools' size as the dominant influencers again neglecting the importance of teachers' roles (Wenglinsky 2002).

However, ensuing studies on classroom achievement have shown that educators make a concrete difference in their student's academic attainment. Noteworthy, the difference in student success has been scientifically associated with the difference in teacher behaviour in the learning environment that they create. In his quantitative study exploring the association between teacher classroom practices and students' academic attainment Wenglinsky (2002) used a multilevel structural equation modelling and concluded that teachers through classroom practices have a substantial influence on learner's academic performance and as such teachers are a very integral part of the overall development and growth of students and their intellectual attainment. He opined that classroom instructional practices such as individualized instruction, problem-solving

techniques, and the advancement of higher-order cognitive abilities all demonstrated a significant association with improved academic performances. Wenglinsky's study highlights the imperative role that teachers maintain in learners' academic performance similar to the present study. The study also linked students' academic performance to quality preservice teacher training, improved on-the-job teacher training, and proficient and quality advancement as identified as the central focus of the current study.

Mirroring these results, King and Newman (2000) argue that teachers are well-placed in a way that allows them to directly and continuously interact with their students. In addition, they have significant sway over whatever the students learn and their learning environment, refining the skills, dispositions, and knowledge of the teacher through proficient and specialized skill development is a fundamental measure in raising student academic outcomes. Earlier, reports by nationwide groups like the Education Trust and the National Commission on Teaching and America's Future reported similar results based on broad surveys that traced students' academic success for many years (Darling-Hammond, 2000). These groups further indicated that high-quality teaching delivered by well-qualified teachers has the potential of narrowing the academic success gap between students from economically disadvantaged backgrounds and their more well-off counterparts.

Later reports on teacher quality and general student performance have frequently cited earlier research (Ferguson,1991; Ferguson & Ladd,1996, Sanders et al. 2011) and others (as specified below) as proof that teacher qualifications are not merely relevant in student academic performance but are likewise key variables in refining the learning and academic success of students (Althauser, 2015; Gershenson, 2016; Harris & Sass 2011). In discussing these findings, Gershenson (2016) cited the study by Sanders and Rivers (1996) that proposes to assess the

enduring and aggregated impact that educators' training and experiences had on student academic performance, the authors collected performance or exam information for a unit of learners commencing at second grade through to fifth grade. Gershenson establishes that educator effects are fundamental factors impacting learner performance, specifically in science and math. Another interesting element noted by Gershenson (2015) was the researchers' finding of residual impacts; on one hand, they discovered that individual students from the selected cohorts did not recover a complete school years' worth of classroom experience with an unproductive tutor. On the other hand, students who spent an entire academic year with an extremely industrious teacher experienced positive academic development even after two years of classroom experience.

In a relative study, Althauser (2015) discussed a study by Sanders and Horn (1998) where for more than 15 years, the authors in collaboration with a team in Tennessee's Value-Added Assessment System (TVAAS) collected and examined annual data from examinations in languages, social studies, science, mathematics and reading for Tennessee students in grade three to grade eight. With a databank exceedingly more than 5 million accounts, the team of researchers followed specific learners through a period not exceeding 5 years while studying each of their academic performances for successive years. From this, the authors were able to recognize a year when a student made normal growth, exceeded typical progress, or had no improvement at all. After disaggregating the gathered data, Althauser (2015) concluded that quality teaching influenced the gradual academic attainment of individual learners. Besides, the author opined that the academic achievement of individual students at each grade level related positively to their teachers' quality.

In these studies, Sanders and his colleagues have proved that high-quality teaching is vital in promoting students' academic performance; students placed in classrooms with highly-

rated teachers are likely to perform excellently. Besides, as reported by Gerabout about the conclusions made by Sanders and Rivers (1996), variables including the socio-economic background of the students, racial and cultural confirmation of schools, and the school's mean score correlate far less with student academic achievement, in comparison to teacher quality.

In a different study by Ferguson (1991), the author analysed teacher qualifications, students scoring on standardized examinations in mathematics and reading, and class size in 900 school districts in Texas, representing 150,000 teachers and approximately 2.5 million students. The main elements of teacher qualifications that were examined in every school district included the acquisition of advanced degrees, training, and experience. The author discovered that the various teacher experiences and qualifications, recorded from the least to greatest important, significantly impacted the final scores of the students: postgraduate certification, length of experience, class size, and teacher linguistic score on the state examination. Harris and Sass (2011) cited in their article an analysis of a study steered by the National Centre for Education Statistics (2001) and postulated that Ferguson defined teacher expertise, and explained that there was a 40 per cent discrepancy in the mathematics and reading scores of the students. Similar results were reflected in an earlier study by Ferguson and Ladd (1996) which used a similar descriptive method to the one utilized by Sanders. The researchers establish that the test scores for individual students in reading and mathematics positively correlated with two teacher performance variables; attaining a master's degree and an above-average score on the college entrance examination program.

Furthermore, the public also overwhelmingly supports and understands the significance of highly qualified and well-prepared teachers. In an extensive survey conducted by Sowder (2007), the author orated that approximately 90 per cent of Americans believe that the best

strategy for improving student academic success is by ensuring that every classroom is equipped with a well-qualified teacher. Besides, the survey revealed an overwhelming public opinion that the potential teachers not only need to be well educated but also require special skills and training. The present study assumes that while there are several factors influencing teacher's practice that directly affect students' performance, the teacher's education and training are one of the most influential.

While the literature on the influence of teacher quality and effectiveness has remained deeply ambiguous in some areas, there is strong research evidence supporting the positive impact of teacher training on student gains. Researchers through a wide variety of literature have concentrated on the subject of teachers' training, as an important component of teacher quality and effectiveness. According to Sowder (2007), the wholesome role of training teachers is to nurture their teaching skills and prowess in a manner that is compatible with the regional education rules to boost their classroom content delivery and consequently lead to improved student gains. A key study relevant to this discussion was conducted by Angrist and Lavy (2001). In their study, these authors calculated the causal influence of teacher training on the students' reading and mathematics scores through the use of difference-in-difference and matching strategies. Drawing from data on Jerusalem elementary schools, Angrist and Lavy (2001) discovered a variance of 0.25 in the standard variation, indicating teacher training improves students' gain. Furthermore, data drawn from a quasi-experimental study focusing on teacher training and students' achievement found that training teachers increase their teaching knowledge when selecting and applying complex teaching methods, consequently impacting overall student performance.

A relatable work by Haycock (1998) showed that teachers with minimum or lack of training further had little grasp of their assigned subject matter. This outcome prevents students from acquiring the most basic learning resources. The findings from this study revealed that classrooms that were presided over by highly trained teachers produced better-performing students in successive years as compared to their affiliates in classes with a teacher who has received non-standard or no training at all.

On the same note, Guskey (2000) opines that teacher who have received adequate training have sturdy knowledge and a wide understanding of their preferred subject matter. By combining different models of teaching, teachers can enhance their delivery of content in the classroom, finally boosting students' gains. Besides, early researchers have also portrayed relevant findings on how the variance in teacher productiveness is a major contributor to good students' academic performance. (Jordan et al., 1997; Sanders & Rivers, 1996). Findings from these studies show that students placed in classes with effective and well-trained teachers exhibited significant achievements in their test scores as compared to those assigned to ineffective and low-trained teachers in a row. The present study assumes that educators and their training are the most dominant component concerning learners' achievement, with extensive research on this presented in the next section.

Another line of inquiry into the importance of teachers in students' achievement focuses on teacher effectiveness, rising from the argument that teachers are the best school-based capitals for influencing the imminent academic achievement and life-long outcomes of the students (Chetty et al., 2014). As a result, researchers have placed strong importance on boosting educators' effectiveness to enhance learners' educational outcomes (Goe, 2007). Chetty et al. (2014) in their study discovered that learners who are assigned exceedingly efficient educators

were more likely than their other affiliates to join college, earn and live better, make good savings for retirement, and were often less likely than their counterparts to experience high levels of teenage pregnancies. The possibility of a highly effective teacher boosting their students' achievement has made it essential for policymakers and researchers to dwell deeper and understand the relationship between these variables and factors that promote effectiveness.

One major study contributing to the discourse on teacher effectiveness and student performance was conducted by Johnson (2017). In discussing the conclusions drawn from the studies steered by Darling-Hammond et al. (2012) and Stronge et al. (2011), Johnson (2017) contends that these findings indicated that there is indeed a direct association between effective educators as indicated through classroom instruction and practice and students' academic performance. Johnson argued further that the two studies are indicative of the fact that effective teacher instruction and classroom management are major factors influencing students' academic performance. Thus, teacher practice is directly related to student performance and since teachers' practices are often linked to their educational development and training one can never neglect the impact of teachers' training on the academic attainment of students, an element that is focal to the present study.

Tucker and Stronge (2005) in their analysis of effective teachers and teaching contend that an effective teacher has a very strong transformative power and that empirical evidence has concluded that there is a substantial relationship between effective teachers and the enhancement of learning that leads to improved academic performance. In support of their argument, the researchers refer to the meta-analysis study conducted by Marzano, Pickering, and Pollock (2001) where they noted that when proper instructional strategies are employed by teachers, the student's academic performance increases. As such, the researchers concluded that the link

between educators and student academic attainment is pervasive and the art of it is not about what teachers know but is more about what they do (Tucker & Strong, 2005).

Another source relevant to the discussion on the link between teacher and student performance is the value-added investigation conducted by Dr, Sanders and his group of investigators from the University of Tennessee Research and Assessment Centre examining the influence of effective instruction and effective teachers on students' educational outcomes. The multi-year longitudinal study concluded that "the most important factor affecting students' learning is the teacher" (Sanders & Rivers, 1996, p. 63) whereby it was found that students' outcomes were greater and continuously improved when placed with effective teachers as opposed to when they were placed with less effective teachers. They, therefore, posited that it would be misleading and preposterous to ignore the detail that educators are very important and do make a difference. As such, the researchers argued that the paramount way to expand the education system and enhance students' overall performance is through the development, training, and continuous improvement of effective teachers.

Similar results were found by Jackson (2018) in his study investigating the importance of teacher effectiveness on students' long-term outcomes outside of test scores. Using an extended version of the standard value-added model Jackson conducted a quantitative study tracing the long-term impact that 9th-grade Mathematics and English Language Arts teachers had on both students' test scores and non-cognitive skills such as behaviour, which ultimately affects overall performances. The results of the research lead the investigator to conclude that the effects on students' academic performance operate outside of the realm of the data captured by test scores alone.

An important component of teacher effectiveness is teacher capability. Many researchers have found an affirmative correlation between the teacher's level of experience and student accomplishment. For instance, Clotfelter et al. (2006) took data from 4000 North Carolina teachers and discovered a favourable association betwixt teacher experience and learner performance in mathematics and reading. Further augmenting these results, Rice (2003) discovered that the existing association between an educator's level of experience and the students' outcome was dominantly portrayed at the high school level. Also, research by Wiswall (2013) and Ladd and Sorenson (2017) further showed that the educator's experience level had a growing influence on student achievement.

Meanwhile, several researchers have failed to conclusively identify a statistically consistent relationship between teacher experience and student outcome (Gustafsson & Nilsen, 2016; Luschei & Chudgar, 2011). A significant study from the USA has shown that experience only matters considerably at the onset of an educator's profession, and during the later years, there are hardly any additional gains (Staiger & Rockoff, 2010). To contribute to these findings, Rice (2003) posits that during the early years of teaching, amassing additional extensive experience is strongly related to the achievement of learners. Rockoff (2004) in his study, revealed that when likening the efficiency of teachers to students' attainment in mathematics and readings, instructor capability related positively to the mathematics attainment of students; nevertheless, this correlation levelled off after the first two years of teaching and gaining experience. The study by Pil and Leana (2009) puts in extra nuance; drawing from their collected data, the authors discovered that teacher experience acquired over several years at one grade level, as opposed to teaching experience in general, related positively to students' outcomes.

Studies have revealed teacher professional knowledge is the other important category in teacher effectiveness that is further relevant to the literature linking teachers' significance to students' achievement. Professional knowledge is equivalent to the teacher's content area knowledge, pedagogic awareness, and curricular knowledge and is normally influenced by degrees earned, graduate studies, college attended, and prospects of engaging with professional training, otherwise known as professional development (Rice 2003). Darling-Hammond (2000) in drawing on the exhaustive quantitative studies from the US National Assessment of Educational Progress (NAEP) and Schools and Staffing Survey (SASS) data sets beginning in 1993 to 1994, contended that the measure of teacher certification and preparation the main associations of students' mathematics and reading outcome, after regulating the language and poverty levels of the students. Similar to teacher experience, studies on the influence of teachers' certification, subject matter, and advanced degrees have been unsatisfying, with some studies (Blomeke et al. 2016) signifying non-significant, weak, and inconsistent associations with student outcomes. However, many international types of research comparing national means revealed that advanced degrees earned by teachers correlated with student achievement (Gustafsson and Nilsen, 2006), similar to a student-level study conducted by Wößmann (2003).

Another study relevant to this discussion is Wayne and Young's (2003) meta-analysis research on teacher effectiveness. In their analysis, the authors identified several studies that portrayed some correlation between the quality of the institute that the teachers studied for their undergraduate and the success of standardized examinations of their future students. Rice (2003) in an in-depth analysis of the literature about the attributes of teacher efficiency, deduced that the selectiveness of undergraduate schools and teacher training programs may be connected to learner outcomes, particularly at the secondary level and for students from underprivileged

backgrounds. Concerning teacher preparation programs, the findings from Boyd et al. (2009) study revealed that the effectiveness of these programs varied.

Besides, their research of 30 teacher training programs that were meant to prepare incoming teachers for the New York school district (Boyd et al., 2009) drew their findings from information centred on interviews, document studies, and surveys of value-added scores, graduates and participants, and teacher training instructors and concluded there was an association between the training programs and teacher efficiency. Boyd and his colleagues also revealed that a program that proved effective in training teachers to teach a single content area was also successful in preparing them to teach different content areas. The authors also revealed that training programmes that were concentrated on classroom instruction, and allowed the teachers to study classroom practices, were likely to prepare high-quality teachers who in return would positively impact the achievement of the students.

Apart from the institution attended by a teacher, his or her chosen coursework within the program may be associated with the achievement of their future students and varies by content area. Rice (2003) in his research revealed that subject-specific coursework greatly impacted the achievement of the student's future, particularly for a teacher preparing to teach at the high school level. Likewise, Goe (2007) indicated that in the case of mathematics, an increase in the volume of coursework accepted was vital for a positive association with the achievement of the student's future. In comparison, Wayne and Young (2003) conducted a meta-analysis study and discovered that in the case of English and history teachers, there was a lack of evidence to show any correlation between the undergraduate coursework undertaken by a teacher and the outcome of future students, particularly in the mentioned subjects.

Studies have further listed teacher certification status as an additional gauge of teacher efficiency and its association with student attainment. According to conclusions made by Wayne and Youngs (2003), there was no strong association between educators' certification level and student outcomes in the US, apart from the subject area of mathematics, where pupils who were instructed by teachers with standard certification in math achieved better scores. Goe (2007) further examined studies that linked teacher certification to student outcomes. His findings, which mirrored that from Wayne and Young's study indicated that educators' certification was particularly related to students' positive outcomes in mathematics, especially at secondary levels. Classes with teachers who are more knowledgeable in mathematics performed better compared to those taught by less knowledgeable math teachers. Rice (2003) further supported these findings with his study that concluded that teacher certification in the US was positively related to mathematics achievement among high school students. Meanwhile, Palardy and Rumberger's (2008) study on grade one pupils found interesting evidence of greater achievements in reading ability among children taught by fully certified tutors.

Darling-Hammond (2005) further conducted a longitudinal study drawing information from educators and students in grades four and five in Texas' Houston school district. The author revealed that teachers who had undergone and finished training programs that awarded them an acceptable certificate were more effective compared to their counterparts with basic teaching qualifications. The findings from the research revealed that teachers with non-standard or unrecognized US teaching certifications overall negatively impacted the gains of their students after controlling for teacher degrees and experience as well as previous achievement and student characteristics.

It is, therefore, paramount to analyse the authenticity of the reports that adequately trained teachers and high and superior teaching matters. It is also worth documenting and getting a better insight into the specific teacher behaviour and the instructional environment that they work in that contributes to high student performance. This information is vital in understanding and determining the best practices of teacher training to produce successful teachers who can positively impact the student's academic performance. Besides, if high teaching quality is a fundamental factor in student academic success and if this success can be linked to certain teaching characteristics, this information could be used to weaken the argument against the increasing trend in most Caribbean countries toward the reduction of requirements for teacher training and education to counter the increasing teacher shortages, heightening numbers of primary and secondary education students and class size reduction as it will be discussed in the successive sections of this study.

2.4: Teacher Training

According to the personalized research by UNESCO (2014) on how teachers' knowledge impacts the teaching and students' learning process in fourteen Anglophone countries, the authors evaluated that the main purpose of teachers' training is to nature their skills and prowess in education, which are compatible with educational guidelines, therefore increasing the effectiveness of the teacher in terms of content delivery, overall practice and autonomy. The author further elucidates that teachers' professional development and training are fundamental factors that would consequently lead to improved instructional practices.

Teacher professional training is mostly limited to its professional development scope. In their study about the impact that school setting, benefits, and efficacy have on teacher training in suburban, urban and rural schools, Knoblauch and Chase (2015) discovered that while a few

students showed that teacher training had minimal effect on their overall academic performance, others showed that when the training is intensive and content focused it can positively impact on the grades. In general, teacher training is focused on giving teachers the required knowledge to enhance teaching and student engagement and to empower teachers with the knowledge and confidence to be effective at what they do. According to Walker, Vasquez, and Wienke (2016), the training of teachers enhances the competencies of teachers and enables them to better relate with their students in an enhanced way to enact a change in the attitude of the students towards learning.

A most recent study by Ikram et al. (2020) adding to the literature on teacher training stipulated that on-the-job training is effective in instructing teachers in pedagogy and teaching content and the building of self-efficacy, hence widespread professional development among teachers. An old study conducted by Parsad et al. (2000) on teachers across the United States revealed that just about 72 per cent of teachers have participated in some form of preparation relevant to the content area of their dominant teaching subjects within the last twelve months. The same teachers further reported having gotten training on ways to implement new teaching practices in their main subject areas leading to them becoming more confident and effective at their job. Additional studies relevant to the topic of teacher training have shown that teacher training allows teachers to explore recent and innovative instructional models and receive instantaneous critique. In the District of Columbia, for instance, teachers are allowed four to five days for in-service training and development, throughout the school year to attend training (DeMonte, 2013). This is in support of Rivkin, Hanushek, et.al (2005) arguments where they proclaimed that the participation of teachers in training programmes improves teachers' overall quality and their instructional strategies tremendously. A national survey conducted on more

than one thousand science and math teachers as discussed by Rivkin and his colleagues in their study had similar conclusions. Therefore, as Desimone et al. (2002) conclude, an intensive and continuous training program is more likely to positively influence the skills and knowledge of teachers, making them more competent and empowered to provide more inclusive and efficient practice, as compared to short and easy preparational activities. Furthermore, other researchers have argued that it is critical to note that educators who are adequately trained and prepared tend to be more effective practitioners as compared to their counterparts, thus they have the strongest influence within the classroom. However, regardless of the prevalent form of such activities, studies have reported a fairly low training intensity among teachers, especially in developing nations, with more than 50 per cent of teachers only getting eight hours of training in these areas each year (Jacob & Lefgren, 2004). Regrettably, available studies on in-service teacher training suffer since teacher training is endogenously dictated by schools and individual teachers. Navarro et al. (2016) suggest the need for a universal design system of teacher training to empower teachers to enhance their practice and deepen pedagogical principles.

Further exploration of the influence that teacher training and professional development have on teachers' overall performance and professional practices was conducted by Stacy (2013) who found that effective training serves to empower teachers giving them more professional clout as they are embodied with the ability to direct their professional development and own their pedagogical practice leading to more positively effective teachers having the ability to creatively and effectively teach diverse learners. Desmoine (2011) in his study supports this view when he concludes that continuous professional advancement and training often lead to the empowerment of teachers through increased teaching strategies and reflection on pedagogical practices resulting in improved practice. He further argued that training equips teachers with abilities to

develop, reform and take responsibility for their professional and pedagogical practice and this enables teacher empowerment and autonomy. Likewise, Darling-Hammond et al. (2017) in examining efficacious teacher professional development contend that effective teacher training and ongoing specialized improvement are necessary for the overall development of effective and superior educators. These they argued enable teachers to learn and refine the necessary pedagogical skills and content knowledge needed to maintain relevance, efficiency and effectiveness in 21st-century classrooms.

In an early study by Lewis et al. (1999) it was concluded that teacher preparation through training and professional development is necessary for the development of teacher quality and excellent teacher preparation programmes often result in exemplary and effective teachers who exhibit effective teaching behaviours and practices. These the authors claim will empower teachers to become masters of their craft exhibiting effective teaching skills that can enhance learning. They concluded that thorough teacher training and preparation help teachers feel confident and empowered resulting in quality and effective teaching and pedagogical practices.

2.4.1: Importance of Teachers' Training in Students' Development

There is an extensive array of literature exploring the correlation between teachers' characteristics and students' learning traits, with several studies concentrated on teachers' training backgrounds. The results derived from such studies are mixed. Although it is widely acknowledged that some teachers are better than others when it comes to effective student development, Jacob and Lefgren (2004) note that there is much less consent on whether different levels of teacher training produce high-performing students.

2.4.1.1: Impact of Teachers' Training on Student Performance

Key studies conducted on the subject of teacher training and student development have mainly compared the concepts of educators' preparation and the academic attainment of students in schools. One key research on this topic was conducted by Harris and Sass (2011) to examine the impact of teacher training and the overall relations between students and teachers and how this impacts performance. According to Harris and Sass (2011), if other factors are kept constant, a positive relationship can be observed between teacher training and students' academic achievement. Clotfelter et al. (2007) in their review of the literature, expound on the affirmative influence that the training of teachers has on pupils' overall education. The explanations from Clotfelter and his colleagues led Harris (2008) to study how teacher training impacts students' academic outcomes.

Likewise, Schroeder and Adesope (2015) postulated that teacher training boosts the cognitive learning strategies of students, thus promoting the acceptance of a deep learning approach. Besides, a study by Walker et al. (2016) has shown teacher training to be effective in enhancing the academic achievement of students. The authors further asserted that advanced teacher training can help aid students in having a better appreciation of the content of particular subjects and help in enhancing and boosting their cognition. Sorour et al. (2017) further augment these findings by explaining that teachers' training boosts the learning abilities of students and develops their related knowledge. These sentiments were also shared by Batte et al. (2003) who posit that teacher training activities involve the utilization of vast procedures for learning and teaching skills that are vital in enhancing the learning attitudes of students.

Muralidharan and Sundararaman (2011) in contributing to the discourse on the importance that teachers' training has on the academic performance of students have explained that diagnostic feedback, which is a vital element in teacher training, has the potential to improve

educational quality of learners by improving their approach to and their overall learning ability. Depending on the training design, the behaviour of teachers towards their students' learning approach can also be improved (Biktimirov & Armstrong, 2015). The significance of this is that it helps the teachers in supporting their learners in a particular way that is appropriate for learning, consequently ameliorating the learners' understanding. Similarly, Diaz et al. (2015) further contribute to this body of literature by asserting that teacher training can mould the behaviour of students towards cognition and activity-based learning. This according to Webster-Stratton et al. (2011) can be attained through a teacher preparation program that is augmented with interactive and practical learning models. The authors further add that a well-trained teacher has the potential to build up the cognition of his or her students towards knowledge and learning.

Another notable study that finds that teacher training has a strong impact on students' academic success is that which was conducted by Angrist and Lavy (2001). Here, the researchers utilized matching and modification-in-metamorphosis approaches to calculate the contributory influence that teachers' preparation and training had on the mathematics and literacy achievement of students in grade schools across Jerusalem. Angrist and Lavy (2001) discovered that the training of teachers increased student achievement by standard deviations of approximately 0.25. The study's cost-benefit analysis further signifies that teacher training is a cheaper option for enhancing students' grades as opposed to increasing class hours or decreasing the class size. Separate research by Guskey (2002) concerning the association between staff development programmes and the effectiveness of teachers indicated that the teachers in better-performing learning institutions tended to demonstrate more significant engrossment in their teacher preparation and development courses in comparison to their counterparts in low and mediocre-performing institutions.

These views were further collaborated by recent research conducted by the University of Nigeria Department of Curriculum Studies regarding the competence of teachers and students' academic attainment where it was deduced that both the personal and professional competency of teachers must be extremely high to complement the efforts of the students to comprehend academic performance (Nbina, 2012). According to the author, the professionalism of teachers is pedagogical as well as professional in the sense that teachers can fulfil their legal requirements for individual traits and professionally handle their work.

Likewise, Johnson et al. (2012) examined the connection between the working conditions of teachers and their effectiveness at the workplace showing that the triumphs of an educator inside the classroom are highly contingent upon the teacher's awareness of the training process which is acquired from intense training. Additionally, a quasi-experimental study on teacher training and development conducted by Piwowar et al. (2013) showed that teacher training heightens the teachers' knowledge when it comes to the variety and application of advanced instructional methods, thereby leading to improved performance among students.

In Atsenga's (2002) research about mastery of the English language in Kenya, he declares that an effective model of teaching greatly influences learning. He further argues that teacher training activities that use effective teaching models and promote knowledge of choice increase the effectiveness of the teachers consequently leading to high grades among students. The author proceeds to assert that teachers' training and continued advancement should be made obligatory in the country to eliminate the possibility of untrained teachers teaching in secondary schools. A similar study by Sultan and Shafi (2014) on classroom autonomy in Pakistan elementary schools posits that teacher training has a significant influence on student's academic performance as it relates to their school environment. In that, an excellently trained tutor can easily control

children's learning process and make the learning process relevant to them through positivity and stimulation (Harris & Sass, 2011). The authors further argued that a teacher can impart the necessary skills and knowledge to aid a student in securing his or her educational rights and enhance their self-esteem as well as their overall understanding. Concerning this assertion, the influence of a teacher's preparation and training on the pupil's academic attainment becomes more apparent when the emphasis is placed on the understanding of the relevant subject content and multiple delivery strategies, contrary to a mere certification. Darling-Hammond et al. (2005) in their support of this view, postulated that the method employed by a teacher to instruct is not affected by the training that the educator has received. Therefore, the improvements in a student's academic performance with a trained teacher are due to the teacher's strong grip on the subject matter and the method of delivery in creative ways that are gained through reflective training. Touching directly on the underlying argument of the present study that teachers' delivery strategies directly impact academic performances.

Additional studies done within the United States have contributed significantly to the discourse concerning the issue of teacher training and the academic performance of students. Three older studies conducted by Little (1993), Darling-Hammond (1998) and Smylie et al. (2001) have concluded in their experiments that the impact of teacher training is strongly reflected in the academic achievement of their students. Additionally, WestEd (2000) contends that the efficient training of teachers has had a positive effect not only on the student's academic achievement but also influenced positively their accountability. In a comparable study, Desimone and colleagues (2002) concurred that efficient teacher preparation and training remained a vital element in many schools that are performing well across the United States. Likewise, in his survey, Wenglinsky (2000) working with a specified student population noted

that there was an affirmative correlation between students who gain higher scores in science and math tests and the overall quality of their teachers' training. Ngugi and Thinguri (2014) also extrapolate that strong teacher command in their subject area contributed to effective teaching, consequently improving the academic achievement of students. In an older study done by Sanders and Rivers (1996) exploring the influence that trained teachers had on students' prospective academic attainment, it was disclosed that after a student was transferred from a teacher who had little or no training to one that has undergone rigorous training, their academic performance for the school year was transformed to excellent.

Similar results were portrayed in the research by Rivkin et al. (2005) where the authors opined that teacher training plays a substantial part in the overall academic attainment of their students. Noteworthy, a high focus has been placed on the role that teacher training plays in improving students' academic performance in the US. To achieve excellent academic performance, more than 25 states have established laws to improve the development of teachers (Hirsch et al. 2001). Sanders and Rivers (1996) in their study detected that the effectiveness of teachers was greatly influenced by effective teacher training programs.

On the other hand, in his research, Hurd (2008) refuted the claim by other researchers as it relates to the link between positive academic performances and perceived trained teachers. In his study, the author recognizes the difficulty in reaching a consensus about what makes up a strong and effective teaching practice or what it entails and argues that as a result, it is rather difficult to make a convincing argument that teacher training positively affects students' performances. Likewise, Bressoux (1996) in his study postulates that the training of teachers who had recently begun their career in teaching significantly enhanced the students' performance in math. Yet from the results of the research, it seemed that pupils who were neither considered

as 'bright' nor above average from the same class hardly benefited from the teachers' training. Besides, classes taught with trained teachers and consisting of students who were considered as low initial average achievers showed no improvement. The study, therefore, suggested that trained teachers are somehow not capable of improving the academic performance of students rated as below average.

Surprisingly, despite the overwhelming evidence of the effectiveness of teacher training in enhancing students' performance as discussed herein, a few studies have shown contrary results. Kennedy (1998) through a meta-analysis study focusing on the effect that educator development has on the performance of learners analysed 93 reports and noted that a positive impact of staff development was portrayed in only 12 studies. Consistent with this conclusion, little (1993) and Corcoran (1995) claimed that team improvement is typically an obscure issue that does not have much liability or continuity. However, there are a few noteworthy exemptions to these conclusions. Through a quasi-experimental study, and examining the outcome of a random trial Bressoux (1996) and Hurd (2008) respectively, discovered that teacher training increased the performance of students of high-achieving students but not necessarily the low performers. Other researchers have shown that teacher development through training programmes has only minute impacts on the academic success of students (Cohen & Hill, 2000; Wiley & Yoon, 1995).

2.4.1.2: Impact of Teacher Training on Content Delivery to Enhance Student Performance

Studies have revealed that teacher training impacts their content delivery abilities and enables them to better control their classroom environment. A study centred on teacher qualification in Tel Aviv by Zuzovsky (2009) concluded that support interventions and policies

targeted at creating increased training, incentives, and opportunities for the participants in content-oriented training for professional growth should be enacted for teachers. Zuzovsky's study is supported by the conclusions made by Bizimana and Orodho (2014) in their study that involved 378 students, 160 teachers, and 81 administrators. The study was aimed at determining the association between the teachers' training, content delivery, and resource availability in secondary schools in Rwanda's Huye district. The researcher noted that teachers with minimum or no training at all had very limited knowledge of their subject content and therefore denied their students the most rudimentary skills and attitudes needed for their core development. Furthermore, Bizimana and Orodho discovered that by utilizing the necessary resources when teaching, teacher vividly presented their subject matter which was well understood by the students.

In connection with this study, Ngugi and Thinguri (2014) proclaim that the general effectiveness of a country's education systems is generally determined by the determination and motivation of the teachers, their training, and the level of their education which is similar to the general focus of the present study. These conclusions are additionally reinforced by the descriptive research exploring the efficiency of the teaching and learning mechanism conducted within a Jamaican teacher training institution by Roofe and Miller (2013) where feedback was collected from 343 participants. According to the study, the training acquired by teachers has a direct impact on their content delivery and thus on the students' achievement both quantitively and statistically. This result is generally unswerving in the indication that educators' training has a substantial influence on the learners' academic success.

Another vital contributing source to the discussion on teacher training and content delivery and its impact on student performance is a study shepherded by Gamoran (2006). In the

study, the author discovered that teacher training amplified student academic success through the impact that it has on teaching practices like content delivery. Similarly, Jackson and Andrews (2000) conducted a study on adolescent education in New York's high-performing mid-grade schools and reported that the training of teachers enhanced their skills and knowledge, consequently improving content delivery and leading to improved student performances. Thus, linking teacher training directly to students' performance is similar to the overarching aim of the present study which places teacher training at the centre of students' performances or lack thereof.

In support of the link between teacher training and students' academic performances, Guskey (2000) holds that well-trained teachers possess a strong understanding and knowledge of the content area that they are undertaking. These educators combine different instructional models, consequently enhancing their classroom content delivery. Similarly, older studies have also discovered that variance in teacher effectiveness is a major determinant of the differential academic success among students (Jordan, et al., 1997; Sanders & Rivers, 1997). These studies revealed that learners who were allotted to unsuccessful and untrained educators consecutively exhibited significantly lower gains and achievement as compared to learners who were allotted extremely efficacious and trained educators in a row.

A different study steered by the US National Staff Development Council discovered that the training of teachers enhances instructional ideologies and techniques that amplify content delivery (Wei et al., 2009). Likewise, in the research on the advantage of skilled training and development Morgan (2010) indicated that throughout training, educators get advanced knowledge to aid them to deliver more content while in the classroom. These results are mirrored by a more recent study by Ladd (2011) building on a similar study by Haycock (1998) which

indicated that teachers who have had minimum training have very minimal knowledge of the units that they are teaching, therefore, denying the students some of the very basic education resources. Haycock conducted his study in Washington DC, which by then had the most enlightened students in the United States. Furthermore, it is widely acknowledged that the most practical means of improving the efficiency of teachers in class is by undergoing high-quality training. Teachers have also reported that when they spend more time in training activities, they are bound to enhance their instructional knowledge and skills (Verloop et al., 2001). Researchers further approve that the reform initiatives and content delivery success greatly rely upon teachers' effectiveness and qualification (Garet et al., 2001).

Furthermore, in a study by Khan and Abdullah (2018) on how staff training and development impact the productivity of teachers, it was distinguished that to enhance the effectiveness of teachers' training in students' academic performance, it is vital to advance teachers' in-service programs. Another research conducted by Ngala and Odebero (2010) exploring the acumen of educators on employee training concerning the effectiveness of educators discovered that the main reason why teachers took part in training programmes was to expand their efficiency within the classroom and to enhance students' learning. In the study, the authors classified the schools as either average or high-performing, and the respondents included one hundred grade school teachers. Noteworthy, there is very little difference between grade school and high school teacher training needs since they can teach at either level. Meltzer and Hamann (2005) also argued that command of a content area facilitates effective training.

Timperley et al. (2008) concur that the impact that teacher training has on academic success through effective content delivery becomes vivid once the focus shifts from a mere certification to the subject matter knowledge. These authors are generally very vocal when

explaining that high school teachers of mathematics and science who have excelled in the field of instructional practice registered higher numbers of academically successful students as opposed to those who are teaching out-of-field. These influences are much greater in those mathematics and science courses that are more advanced where teachers' knowledge of the content is far more critical (Timperley et al., 2008). Using a separate set of statistics, Rowan et al. (2002) in their meta-analysis study established that there was no relationship between math certification and content execution in both the learning and teaching processes in elementary schools. Their findings elucidate that it is only teacher training that can enhance the knowledge of the subject matter. Rowan's research paper deeply explored the relationship between the influence of training knowledge and skills acquired and service executions towards the performance of students in key classroom subjects.

Similarly, Darling-Hammond and McLaughlin (2011) in their research have revealed that the proper utilization of resources when teaching greatly improves content delivery and enhances the understanding of learners. Substantial research evidence has shown that changes in teaching resources such as textbooks make some difference in case the teacher does not utilize the resource effectively. The study further explains that consistent teacher training enhances the use of teaching resources leading to improved content delivery and teaching strategies and thus enhancing students' knowledge. The conclusions from this research are substantiated by the conclusions drawn by Rowan et al. (2002) when they established that teachers' training was of great importance especially when it comes to the utilization of resources in teaching more technical subjects like mathematics at the elementary school level. These conclusions are also reinforced by earlier literature, especially the research by Greenwald et al. (1996) who argued

that teaching and learning resources discovered an important impact of teacher training on the utilization of school-based resources.

Likewise, different authors discovered that well-trained teachers were better with hands-on activities and that by integrating this skill into their daily school life, they positively influenced the academic success of the students (Pate & Thomson, 2003; Richardson, 2003). A different study conducted in Virginia, USA, by Wenglinsky (2000) examined the impact that specialized training and advanced teachers' development had on the use of emerging teaching technologies. The author discovered that teacher training has a strong influence on the use of technological resources like projectors and computers during teaching. A similar study by Valdez and Broin (2015) exploring how teacher leadership impacted the academic success of students suggested that a strong and continuous staff training programme was vital in improving the effective utilization of resources.

A relative factor in teacher training and content delivery during the instructional and erudition process is time management. Grissom and Loeb (2015) have argued that if time is well managed, it would lead to a better understanding among the learners. Besides, Darling-Hammond and McLaughlin (2011) recognized a more effective professional and teacher training program positively impacted the teacher's ability to effectively use their time when instructing. The study conducted in a rural province in Brazil by Moriconi and Belanger (2015) further complemented these findings. In the study, the authors discovered that teachers who had a constricted work agenda lacked the stint to effectively organize themselves for their classes, consequently impacting their students' performance negatively. Besides, the tight work schedule also interfered with their participation in training programmes. The authors further expressed the

need for school administration to allocate their teachers' flexible teaching schedules to enable them to participate in the training program to enhance their content delivery.

A similar survey piloted earlier by Darling-Hammond (1998) has shown that teachers in Kentucky were better prepared when it comes to managing their time, content, and teaching effectively because they had undergone a more extensive training programme compared to teachers in other US states. A more recent survey conducted on Kentucky teachers further discovered that approximately 80 per cent of in-service teachers who had trained and graduated from Kentucky Colleges of Education were well-prepared for almost all the aspects of their new job, especially time management as opposed to teacher education from the previous studies (Darling-Hammond & McLaughlin, 2011).

2.5: The Caribbean Educational Context

2.5.1: Historical Overview of the Advancement of the Anglophone Caribbean Educational System

The Anglophone Caribbean is considered a part of the British Commonwealth, as well as the greater Anglophone world. The educational and teaching history of this region is intricately intertwined with the educational development in the Anglophone world. In his historical overview of educational developments in the Anglophone Caribbean, Coates (2012) noted that evidence of formal education within this region can be sketched back to 1743 with the establishment of the Codrington Grammar School of 1743 on the island of Barbados. Peters (2001) further supplements this literature by pointing out that throughout the liberation era, the demographical structure and the makeup of the student population throughout the Anglophone Caribbean region underwent a rapid transformation as most whites opted to go back to Britain.

Similarly, Coates (2012) asserts that even after the British colonial rule the educational context within the English-speaking Caribbean still reflected the learning traditions of their colonizers.

Researchers such as Millette (2003) and Schwarz (2003) note that grammar schools were mostly established in Jamaica and Barbados by merchants and planters. However, the matter gained popularity after emancipation as the instructional needs of the ex-slaves in the British West Indies came to be a crucial issue. Cox-Alomar (2004) further adds that religious affiliations such as Baptists, Anglicans, and the Mico Charity, among others in conjunction with financial aid from the Negro Education Grant and the imperial government, steered and shaped educational development within the Anglophone Caribbean societies. Researchers such as Millette (2003) and Schwarz (2003) note that grammar schools were mostly established in Jamaica and Barbados by merchants and planters. However, the matter gained popularity after emancipation as the instructional needs of the ex-slaves in the British West Indies came to be a crucial issue. Cox-Alomar (2004) further adds that religious affiliations such as Baptists, Anglicans, and the Mico Charity, among others in conjunction with financial aid from the Negro Education Grant and the imperial government, steered and shaped educational development within the Anglophone Caribbean societies.

In contributing to the discourse Coates (2012), contends that during the early nineteenth century, the British government started issuing new grants to aid Caribbean education, and immediately after emancipation, the regions started to experience rapid increases in the innumerable number of students that started to enrol in schools. Various studies further noted a sharp increase at the elementary and secondary levels in the British West Indies (Bacchus, 1994; Coates, 2012; Leo-Rhynie, 2005). For instance, in quoting an old study conducted by Phillippo in 1843, Coates reported that before 1823 only three schools in Jamaica were solely dedicated to

educating Blacks. Less than two decades later, more than 200 Day Schools, 90 Sabbath schools, and 30 evening schools were already in operation (Coates, 2012). In the same breadth, Bacchus (1994) reported that between 1840 and 1860 only 300 teachers had received training at Mico normal schools. However, the significant shortage of trained teachers in the regions according to Bacchus (1994) greatly impeded the quality of education that was being offered which set in motion proposals for introducing opportunities for advanced education. Thereby in the quest to enhance the value of education that was being offered in the Anglophone Caribbean, the commissioners of education implemented regulations in 1867 that required potential teachers to have a professional certificate of competency before being employed as a teacher (2012).

Thus, Codrington College became the first advanced-level educational institute within the Commonwealth Caribbean by 1830, and this was followed by a surge of other tertiary institutions (Miller, 2000). A major landmark institution mentioned by Cobley (2000) that was developed to facilitate and satisfy the demand for tertiary education within the area was the 1948 establishment of the University College of the West Indies (UCWI), which was changed some years later to become known as the University of the West Indies (UWI). Though it officially started in Jamaica as a regional organization meant to satisfy the advanced educational requirements and promote regional identity within the Commonwealth Caribbean it was later expanded to other territories in the region.

Furthermore, in his study, Roberts (2003) asserts that owing to the increased pressure of and the increased number of students from diverse groups in the 1980s through to the 1990s, there emerged the need for further universities, multifaceted and multidimensional colleges, and focused non-academic tertiary organizations. This was collaborated by Miller (2000) and Rowe (2003) who noted that from the late 1960s onwards, the number of advanced learning institutes

within the Caribbean rose steadily due to the increased demand for advanced learning. Howe (2005) postulated that by the first five years of the twenty-first century, the advanced educational institutions within the Anglophone Caribbean regions consisted of a blend of more than 150 higher education institutions.

2.5.2: An Overview of the Caribbean Educational System

Stephenson et al. (2020) in their highly impressive work on the liberalization of education in the Caribbean, point out that formal education in the Anglophone Caribbean began at age six. The authors add that after five years of primary school, the students sit for an examination to promote them to the secondary level. Stephenson and colleagues further deduce that after an additional five years, the students take the Cambridge Ordinary level education examination (Levels), or increasingly, the Caribbean Examinations Council's (CXC) Caribbean Secondary Examination Certificate (CSEC) exit examination, which is strategically set to reflect better upon the situations and needs of the Caribbean. Smith-Henry (2018) notes that approximately 20 per cent of candidates who have passed their 'O' levels or CSEC examinations continue with school until they complete their 'Cambridge Advance level (A' Levels) or Caribbean Advance Proficiency Examination (CAPE) respectively, which is a more technical course that runs for two years and is mainly focused on university admission. Therefore, for most students, the 'O' level or CSEC examination is their final examination before they proceed to employment or further studies. She argued that due to the very low chance of entry to the labour force with just a secondary education the majority of the population must seek tertiary-level studies. According to Miller (2000), the admission requirements to college institutions are 4 or 5 GCE or CXC 'O' levels in addition to other conditions.

Peters (2001) points out that as a consequence of the century-long colonial history with Britain, the Commonwealth Caribbean education systems are generally homogenous. Educational reforms and policies in this region have constantly drawn direction, form, and inspiration from Britain. Miller (2000), argued, for instance, that a Minister is put in charge of all the operations, administration, and general growth of the system in each territory, a practice that until now is popular in the United Kingdom. Besides, Nettleford (2002) explains that the governments of each Anglophone Caribbean country provide at least some extent of preschool, primary and secondary education level, as well as distinct and post-secondary learning such as teacher training, and vocational education among other programmes. In general, students within the Anglophone Caribbean read for and sit identical examinations, and later seek admission to similar universities in the region (Howe, 2005).

Stephenson, Persadie, Bissessar and Esnard (2020) contributing to the literature explained that states in the Anglophone Caribbean offer their population basic education: a practice that has been in existence for several decades. The authors mention that the education offered at the secondary and primary levels caters to a wide range of the population. The authors add that in most cases, the education provision is below the level of participation and demand. Besides, Jules (2008) reports that there are fewer school positions compared to children in school. In their attempt to explain the reason behind the high participation levels and the high value that the Anglophone Caribbean place on education, Stephenson and colleagues (2020) mostly relate this trend to the limited socioeconomic advancement opportunities within these territories as compared to any intrinsic value that is deeply seated in education.

Different researchers have come forth to elucidate the enduring features that currently and have historically marked the education system in the Anglophone Caribbean. One such

feature according to Armstrong et al. (2005) is a wide-ranged secondary and primary education but with a very narrow provision for tertiary-level learning. According to George (2016), even with the current availability of secondary education and universal primary education, tertiary learning is highly limited. Keeping true to this statement, Coates (2002) confirms that tertiary-level institutions within the Anglophone region are only able to offer and accommodate around 5 to 6 per cent of students aged between 18 and 24 with advanced-level education. Besides, Miller (2000) augments that before 1948, when the University of the West Indies was opened, the only available forms of advanced education were theological education and teacher training for primary school teachers.

This has led to the movement of young people abroad in quest of tertiary education as outlined by Cobley (2012). According to research conducted by Howe (2005), a substantial number of adolescents are leaving the Caribbean for abroad because they do not have access to tertiary education in their home country, thus they travel abroad to seek such opportunities. The author notes that this trek has existed for many years, but historically it was to Britain. However, in the past four decades, it has been mainly to colleges and universities in North America due to the significant presence of Caribbean migrants. Besides, Miller (2000) notes that for more than a century, the education system in the Commonwealth Caribbean has mainly been driven by external examinations. The external examination and internationally accepted credentials are the non-negotiable results of education in this region which not only reflect on the region's colonial history but also its external links and relationships.

In another impressive research, Hackett (2004) characterized the educational systems of developing countries as one opposed to universal inclusion with high repetition rates, low completion and high drop-out rates, limited access for females, low efficiency in regards to

thorough-put and low standard of achievement. The author further adds that educational

transformation over the last twenty years in the Anglophone Caribbean has led to more

efficiency in terms of the female population having equal access to education as the males.

Hackett points out that as a matter of fact, girls generally enrol earlier, repeat less, attend school

regularly, drop out less, complete and achieve better academic success than their male

counterparts.

George (2016) extends the argument by asserting that 82 per cent of students within the

12 and 17 age groups get secondary education. In essence, the author notes that gender disparity

that favours girls is more rampant at the secondary levels of the school system in contrast to the

primary school level. This shows that the learning provision in Anglophone Caribbean countries

is broad-based and free from gender inequities that are rampant in most developing nations.

2.5.3: Overview of Teacher Education in the Anglophone Caribbean

Coates (2012) and Remy (2005) point out that decades after independence the desire for

education remained premium in the Anglophone Caribbean, however, the proportion of

educators with advanced degrees or any form of training remains low. According to the authors,

the shortage of qualified teaching personnel in the Anglophone Caribbean is aggravated by the

increased migration of the potential workforce. The depletion often necessitated the importation

of teachers a measure that is not sustainable (Steinbach, 2012). While the demand for both

informal and formal teacher education is rampant and continues to increase, Jules (2008) asserts

that expansion programmes for the same are greatly burdened by limited manpower and financial

restrictions in most countries. Armstrong et al. (2005) also assert that the implementation of the

Free Trade Agreement of the Americas (FTAA) is a great factor affecting the movement of

skilled teaching professions within the Anglophone Caribbean. In the wake of these

developments, Jules (2008) suggests that it is therefore critically significant for countries within this geographic context to harmonize policies for the certification of teacher training and the certification of teacher education programmes to provide a common foundation of standards for appraising the teaching qualifications of people coming from education systems beyond the sub-region.

Jules (2008) points out that in the year 2000, in recognition of the irreplaceable position occupied by teachers in facilitating learning and transforming education the Anglophone Caribbean agreed to adopt a regional plan of action to renew the Education for All initiative. Considering this, the countries pledged to provide high-quality academic training for teachers based on research to allow them to be more innovative and prepare them to effectively carry out their duties in a diverse cultural, technological, economic, and social context. The plan also aimed to establish suitable career policies that create incentives for teachers to pursue high academic and pedagogical training levels to develop their skills and facilitate lifelong learning.

The prevailing initiatives in teacher education are timely and necessary in light of the developing trends in the practice of the discipline. Steinbach (2012) notes that despite the individual and collaborative reform efforts among Anglophone countries and agencies, teacher educational programs within the Anglophone Caribbean's sub-regions have not developed much from the early colonial stages. The author best describes the region's teacher education system as an amorphous array of policies and programmes that reflect its evolvement over the years but coherence to encourage a holistic comprehensive systemic identity. Thus, confirming the common view that reforms in teacher education in developing countries are stalled by the legacy of colonial pasts.

The above conclusion is supported by Armstrong et al. (2005), whereby they noted that despite the frequent expression of concern over the standard of education offered and the call to professionalize instruction, issues, and concerns about teachers are mainly addressed from the perspective of wages and the terms and conditions of service instead of on the functional perspective of the teachers' professional development. Another source relevant to this discussion is the studies by Sorour et al. (2017) and Sylvester (2008) which concluded that countries in the region have been reporting poor quality programmes and low success rates among students. The author proceeds to use the example of Jamaica, where physics and mathematics are reported to suffer mainly due to the shortage of qualified and well-trained teachers. The researchers also note that a lack of teacher training indeed influences content delivery abilities and the overall performance of students and that teachers with minimum or no training had inadequate subject area content knowledge, consequently negating learners from their full potential of performing well in those subjects.

Teacher requirements and qualifications vary across different countries in the Anglophone Caribbean. According to Mark et al. (2005), the academic qualifications needed for one to be recruited into the teaching service are usually pitched at minimal levels in the majority of the territories within the area to maintain a high quantity of teachers. This practice according to Mark and his colleagues, encourages the belief and misperception about the demand and nature of teaching. Quamina-Aiyejina et al. (2001) explain that in Trinidad and Tobago secondary school graduates without proper training or no training at all can be employed as primary school teachers. The authors further point out the differences in teachers' training and qualifications among teachers in most countries within the Anglophone Caribbean. The secondary schools in Jamaica, for instance, generally contain a mixture of teachers in terms of

skills and qualifications some even without pedagogical training and this can have serious repercussions for students' academic performances.

In a survey from a similar study, Jennings (2001) shows that while 60 per cent of secondary school teachers in Jamaica held university degrees, less than 50 per cent of them had received professional training from a teacher training college or had a diploma or degree in education. The author further noted that the situation was far worse in Junior Secondary schools around the country which registered the lowest number of graduate teachers with only 45 per cent. As is highlighted in numerous studies teacher qualification and pedagogical knowledge often correlate with students' academic performances. Thus, weak pedagogical knowledge and lack of or improper teacher training will negatively impact students' academic performance.

Steinbach (2012) explains that this pattern is common within the Anglophone Caribbean as a result of how teachers have been recruited to teach in the disparate types of secondary schools in the past. According to the author, a lot of Junior school teachers were initially trained as primary school teachers before upgrading their academic qualifications by taking short courses due to better pay attractions in secondary schools. A similar study by Quamina-Aiyejina et al. (2001) stated that in the state-sponsored and state-run secondary schools in Trinidad and Tobago, the dominant employment criterion for teachers is a university degree. However, the author makes the point that most teachers are recruited to work in these institutions without having gained any kind of pedagogical training, and only a few teachers utilize this to their advantage and proceed to attain such training through an in-service diploma in education and post-graduate training.

Miller (2000) makes the point that countries in the Anglophone Caribbean largely rely on the 'bright person' myth which is based on the idea that any person with just the knowledge of a

particular subject matter can teach a classroom effectively. The author notes that this misconception has greatly influenced the teacher recruitment practice by encouraging the hiring of persons who have not been sufficiently exposed to the pedagogy principles and other teaching principles from the disciplines that undergird the professional practice. To augment the teaching status in countries within the region, researchers and policymakers suggest the need for fundamental shifts in the beliefs and perceptions of the nature of teaching (Mark, Joseph, & Remy, 2005). According to Guskey (2000), well-trained teachers have better knowledge and understanding of specific subject matters. These teachers as noted by Guskey can effectively combine several teaching models, consequently enhancing their content delivery in the classrooms and positively affecting students' academic performances.

According to Jules (2008), the dynamic nature of Caribbean communities and the realities of modern life requires a decisive and deliberate policy change concerning recruiting persons who are professionally and academically well-prepared to enhance students' academic success and meet the challenges of school populations and the modern classroom. As the Anglophone Caribbean are greatly dependent on schools to advance their developmental goals, teachers are in the vanguard in developing the region's human resources (Mark et al., 2005). Besides, UNESCO-OREALC (2013) has been pushing for the need to change and revise policies concerning the hiring and recruitment of teachers to reflect their important role in society.

2.5.4: Teachers' Training and Students' Academic Performance in the Caribbean

According to Marta Ferreyra et al. (2017), the bulging concern for quality education is relevant in the Caribbean region and ought not to be put as a subordinate objective to augmented attention. Besides, the two extents are meticulously related since quality education has steadily become the avenue for social mobility within the Anglophone Caribbean making quality concern

even more significant. As explained by Hackett (2004) based on the Caribbean's education for all framework, the fundamental superintendency of teachers has largely been concentrated on the observation of teacher availability and more essentially their specialized training. Thus, an examination of the quality of the Anglophone Caribbean's teacher training programmes indicated that comparable data has shown that by 2011 more than 70 per cent of secondary and primary school teachers had attained certified teaching training. However, the author explains that there are significant regional disparities in teachers' professional levels, as in some countries only half of the secondary and primary school educators and teachers are licensed whereas in some countries the proportional play stands well over 90 per cent. Countries like the Bahamas registered a major proliferation in the number of trained teachers, while in Antigua and Barbuda, the proportion fell miserably. Overall, the Caribbean has been focusing more of its energy on increasing the quantity of teachers as compared to raising the standards of teacher training.

Bruns and Luque (2014) note that the students' score data in schools in the Caribbean have become more abundant in the past years, thus enabling investigators to directly measure the value-added contribution of individual instructors during an academic year. Various studies have gone ahead and documented eye-opening results showing the great variance of teacher effectiveness on Caribbean students' performance, even within the same school and the same grade. A study by Hanushek and Woessmann (2012) conducted on selected primary institutes in Trinidad and Tobago indicated that while learners who had been assigned weak teachers may be able to master 50 per cent or less of their grade curriculum, those with a well-trained teacher got an average of one-year improvement. Besides, the learners who had the stronger instructors advanced by at least 1.5 degrees of proficiency. According to the authors, a series of bad teachers

over some time has compounded its negative impacts on the Caribbean educational system leading to unbridged gaps in different levels of student learning.

Relevant data gathered from the 2006 Secondary Regional Learning Assessment (SERCE) within the Anglophone Caribbean similarly indicates learning outcomes of great variations for learners across divergent grade 3 classrooms within the same institution (Bruns & Luque, 2014). SERCE (2006) revealed mean differences across classrooms, which according to Bruns and Luque are not estimates of value-addedness and to some degree, certainly reveal the policies of the school systems of categorizing pupils into different classrooms according to their ability. The study comments that such large middling gaps in students' learning underscore how overwhelmingly the teacher consigned to students delineates their academic success, even in comparable educational institutes.

Emerging studies touching on the Caribbean education system suggest that specific instructors often greatly influence not just the instantaneous learning development of the children but likewise their prolonged improvement and life choices and experiences. In a vast survey that traced the teacher and assignments given in the classroom, as well as annual test scores for more than over two million primary education pupils in different municipal school districts within the Caribbean between 1990 and 2010, Friedman and Rockoff (2013), discovered distinct variance between high value-added teachers heading classrooms that unswervingly reported high results, and low value-added teachers that reported low results. Significantly, the researchers further discovered that there was no correlation between the differential performance of teachers and student selection. Decisively, there is an overwhelming amount of evidence showing that individual teachers greatly affect not just the immediate learning process of students but also their progressive development and the choices they make in life. As such it is prudent to imply

that there is an association between the poor reputation and lack of teacher training around the

Caribbean and students' low academic performances.

2.5.5: Teacher Content Delivery and Students' Performance in the Caribbean

There is a considerably low quantity of direct research that has the content mastery of

teachers in the Anglophone Caribbean as the focal point, and the few available ones do not paint

a clear picture. In a study conducted by Thompson (2017), the author discovered that the math

performance of grade 6 pupils in Jamaica could be emphatically associated with the achievement

of their teachers on identical grade 6 exams. This finding according to the author also leans

towards a depiction of the overall poor performance of Jamaican educators. Teachers' attainment

on a different and more extensive examination to gauge the conveyance of content by teachers

and their comprehension of pedagogic training in Grenada, approximately 8,800 teachers out of

183,000 attained the set pass threshold (Knight, 2014).

One of the best data that shows how content command among Anglophone Caribbean

teachers compares to teachers from other countries around the world can be fetched from a

multi-disciplinary research program known as the "Teacher Education and Development Study

in Mathematics (TEDS-M)," which evaluates teachers' quality on teaching mathematics. The

program applies interviews and content tests to representative samples of imminent math

teachers from the participating nations (Döhrmann et al., 2012). According to the authors, future

secondary school teachers representing the Caribbean region scored the poorest result on

mathematics pedagogy examinations in addition to weak scores on mathematics content mastery

in comparison to the other countries.

Besides, prospective primary school teachers from the region registered the second-worst

performances in both content mastery and pedagogy control, ahead of only Chile (Döhrmann et

al., 2012). Even though the countries admitted in the TEDS-M programme are a select group that includes a number of the best international performers on TIMMS and PISA among other similar tests, the authors note that there also existed a substantial gap concerning the magnitude of competency of potential educators in Taipei or Singapore compared to those in the Caribbean. A comparable study by Timperley et al. (2008) determined that math and science teachers who excelled in content mastery and pedagogical studies were more likely to produce more academically successful students than those who scored low in these two sectors. Therefore, considering that the best participants from the Caribbean region were selected to participate in the TEDS-M programme, this data leaves little doubt that the entire Caribbean region faces an abysmal problem as it relates to augmenting the standard of its educators, which the bottom-line impacts negatively on the student's academic performance. This gives credence to the importance of the present research which aims to examine the effect of teachers' preparation on male academic achievement.

Another important research finding on teacher content delivery and its impact on student performance is that the teachers within the Caribbean are not intensively using the available materials in the classrooms. Research evidence has continuously pointed out that the use of different teaching resources within classrooms improves the teachers' content delivery and impacts positively the students' interest and ultimately their performance (Darling-Hammond & McLaughlin, 2011). Descriptive data gathered by Berry (2012) indicated that students around the region have been provided with an enriched learning environment through the availability of diverse resources, and most significantly an increasing number of educational institutions have an Information Communication and Technology (ICT) presence in the tutorial rooms. Nonetheless, as noted by researchers many teachers in the Anglophone Caribbean region

continue to largely rely on very traditional learning aids and techniques, such as the chalk-and-talk method (Bruns & Luque, 2014). The authors asserted that the teachers use the blackboard for more than 70 per cent of the class time as opposed to interactive student-centred activities. George (2015) explains that teachers in the region spend only 2 per cent of their teaching time utilizing available ICT resources. This is due largely to teacher training programmes as Anglophone Caribbean secondary classroom instructional practices are direct replicas of the situation encountered in teacher training institutions. As researchers (Coates, 2012; George, 2016; Miller, 2000; Steinbach, 2012; Thompson, 2017) have concluded, the lack of empirical, enquiry-based and participatory learning received by preservice teachers leads to limited pedagogical differentiation which is then transferred into the classroom setting and might be directly undermining academic achievement.

Likewise, there is a striking amount of time spent by teachers lecturing their pupils devoid of the application of any instructional material leading to disorganized content delivery (Burns & Luque, 2014). According to George (2016), it is extremely difficult for a teacher to demonstrate new concepts and maintain student engagement among lower-grade students without the application of instructional materials. Besides, Davis (2009) elucidates that as the curriculum gets more sophisticated in the higher grades, it becomes more difficult to implement substantively without instructional guides or resources and efficiently structured content. Another important research conducted by Rowan, Correnti, and Miller (2002) on the same matter explained the importance of using learning tools to aid classroom content delivery, especially in technical subjects like math and sciences. Qualitative feedback from observers in Bruns and Luque (2014) was that a vast majority of classes in the Caribbean regions lack a clear lesson structure and plan.

Therefore, it suffices to settle that as societies in the Anglophone Caribbean experience cultural and social shifts, the complex teaching nature ought to be acknowledged, as must be the importance of having teachers who can recognize and respond effectively to changing classroom demands. Anglophone Caribbean nations ought to enact policies on teacher recruitment and selection that reflect this imperative. Besides, studies about the discipline of teacher training have enabled understanding relating to teacher thinking, learning how to teach, and assessing the competence of beginning teachers, which can aid the efforts of effectively preparing quality teachers and steer the shift to more demanding criteria for entry into the teaching service (Uhlenbeck et al., 2002). These studies also highlighted the need for further educational reform within the region which should begin with the way teachers are trained.

2.6: The Role of Gender in Students' Performance

Gender cannot be substituted for sex. While the term sex denotes the inheritable chromosomal variance between females and males by way of erected genitalia, gender refers to the socially accepted differences between males and females (Filgona & Sababa, 2017). Therefore, gender concerns the roles, responsibilities, constraints, opportunities and needs of females and males (Parajuli & Thapa, 2017). Policymakers, practitioners and scholars alike have studied gender and seem to be harmonious upon socially manufactured differences that have existed between females and males, and how it has impacted different aspects of their lives, including education. Gender differences in education are well-recognized and have been widely explored.

Noteworthy, most past studies that have explored gender differences in education primarily dwelled on gender equality in education, where different groups of learners are discriminated against leading to educational inequities. In particular, such studies focused on

girls' barriers to education. There have been numerous reports that have highlighted the side-lining of female learners, particularly by societies that view education as predominantly a male affair, arguing that they stood to benefit the most from education than females (Jha & Kelleher, 2006; Jha & Pouezevara, 2016). For these reasons, girls have been disadvantaged in the past regarding education enrolment and retention, in comparison to boys (Jha & Pouezevara, 2016). UNESCO has also highlighted several contributing barriers to girls' education in different countries and communities including arranged marriages leading to girls being involved in conjugal relations at an early age, poverty, and gender-established ferocity. Underprivileged families frequently favoured the male child and thus invest more in their educational development (UNESCO, 2014). In many areas, educational institutions have not met the protective, sanitation or hygienic needs of females (UNESCO, 2014).

According to Jha and Pouezevara (2016), the prevailing gender inequity against female learners in attaining education has especially been popular among low and lower-middle-income nations. However, considering the educational progress that has been witnessed in the world over the years, almost every developing country has achieved a full transition to gender equality in education. A review of data on student enrolment rates at secondary and primary school levels in several countries shows that females are fast gaining pace in access to education and achievement especially, in countries like the Anglophone Caribbean and others, where the perforation has either been dissolved or has pivoted in favour of females (Jha & Pouezevara, 2016).

Given such progress in education equity, most studies have shifted their attention and are now exploring the significance of gender within education and whether it influences academic performance in a significant way. The issue concerning gender has now become a major talk in

education discourse. While the literacy rate is higher among males as compared to females, it is

relatively thought-provoking to observe that more and more females are scoring better marks and

are even ranked better when compared to boys in almost every competitive examination. Studies

conducted at the global level among learners at different levels have consistently reported a

noteworthy difference in the academic performance of the different genders. Many scholars have

found and outlined in their research how girls outclass boys in terms of performance (Jha &

Kelleher, 2006; Jha & Pouezevara, 2016; Khwaileh & Zaza, 2011). Goni et al. (2015) note that

for the past decades, the female figure has displayed gradual and steady improvement in class

ranks. These sentiments have further been echoed by longitudinal studies that have examined the

performance between males and females in different global regions (Luster, 1998; Zhang &

Manon, 2000).

Similar performance trends have been observed in most countries in the Anglophone

Caribbean. According to Jha and Kelleher (2006), the new shape that gender disparity in

education is taking in support of females, or to the detriment of males, more at the secondary

level started in the Caribbean in the early 1990s. As a result, male students lower-ranking of

academic attainment compared to girls, have presently become the focal point of attention,

particularly within the Caribbean. The social status of women and girls in the English-speaking

Caribbean nations has significantly improved through the years. Caribbean females have

generally been empowered and are thus critical contributors to developmental activities

including education and literacy (Jha & Kelleher, 2006).

The administrators of Caribbean states have adopted the policy of education for all. These

countries have successfully been able to expand accessibility and educational opportunities for

girls. Despite these enthusiastic efforts by both governmental and non-governmental agencies to

safeguard gender parity in and through schooling, only a few scholars have explored the issue of differential learner performances, particularly the impact of gender on such differential achievement (Jha & Kelleher, 2006). Numerous questions about the role of gender in education remained unanswered within the Anglophone Caribbean nations, including the academic outcomes for the different genders in regional exit exams, and whether or not gender matters in academic performance among others (Jha & Kelleher, 2006).

Boys' performance in this region is the main concern of the current study, especially due to the mounting suggestive data that girls are outclassing boys in academics. For some decades, now this topic has been a matter of great debate and has raised a multitude of varying suppositions. Few of these are centred on the credence that the problem pirouette on gender socialization and the masculine identity (Clarke, 2005; Vantieghem et al., 2014), while others like (Ahmed & Ray, 2011; Cobbett, 2014; Jha et al., 2012) attribute male underachievement to class, ethnicity, and societal structures.

Parajuli and Thapa (2017) point out that gender difference further occurs at the cognitive functioning stage in the learning environment. The authors, further contend that female learners are more likely to be malleable when learning in a dissimilar situation (Parajuli & Thapa, 2017). Pillow (2008) has further studied the gender differences among learners and how it affects their performance. The study revealed that the background traits of individuals can impact both their cognitive and non-cognitive thinking, which are vital and influential traits in academic performance.

A different study by Nori (2002) explored the association between self-concept and ingenuity on learners' educational outcomes, especially, among high school students and gender differences. The study utilized an equal number of male and female learners through

questionnaires to measure and analyse the degree of ingenuity using Accumulative Ranking Scores Average (CGPA). The analysis showed no substantial correlation between ingenuity self-concept and educational outcomes. Another study by Mahama et al., (2019) testing for the same association between the aforementioned variables, randomly selected 2264 students from 68 schools and assessed their academic performance through the utilization of self-reported scores on achievement tests in 4 major subjects: Math, English, Social Science and Natural Science. A canonical correlation analysis was then conducted and discovered that when ranked according to grade level, the student's ingenuity and self-perception correlate to academic attainment for both male and female students. Several other studies have further supported the idea that students' self-concept and creativity affect their performance according to their gender (Anderson & Haney, 2021; Bahrami, 2019; Huang et al., 2021).

In addition, a dated study conducted by Xixia (1999) on Spanish students indicated that some difference exists between males and females regarding the creativity related to their academic performance. While the study found the degree of creativity between female and male students to be the same, they also resolved that while most prominent and innovative individuals are normally male, females are more creative than males.

Other studies have observed and associated gender inequality in terms of classroom performance with the instructional design used by educators throughout the dissemination and acquisition of knowledge. There are some studies on gender discrepancies that concentrate on the variances in performance connected to diverse subjects (Kang, Hense et al., 2019). The examination of gender differences in academic performance in Sciences or Arts has borne very controversial results. Scholars have persistently presented fluctuating opinions relating to differential gender performance outcomes which makes it a highly controversial issue area. A

few scholars have reported substantial gaps in achievements based on gender with girls outperforming males in literacy subjects, whereas males excel in the Sciences and Math (Law, 2018).

However, others noted that such differences are inconsistent. While researchers started to show interest in the subject of gender variances in Arts and Science achievements in the early 1900s, it comes as a surprise that their findings are not consistent until today. Some researchers have associated the differences in the findings with methodological flaws while others have cited elements that favour the educational attainment of female and male learners including the aversion of female learners toward physical sciences, which could be the cause for the perceived variation in the achievement between the male and female students.

According to a study undertaken by Iroegbu (2020) on secondary school science, males performed significantly well compared to girls. The author concluded that there are factors in the educational process that affect the understanding of boys and girls differently. O'Connor (2001) further proclaimed that as girls and boys get older, their difference in achievement in some subjects is likely to reduce except in mathematics. In a study by Ajai and Imoko (2015), the authors conducted an assessment of how gender affected mathematical attainment and retention. Their research reported that there was no substantial variance between attainment and retention marks between boys and girls, meaning that all the students were equally capable of competing in mathematics.

Furthermore, the meta-analytic longitudinal research conducted by Voyer and Voyer (2014) between 1914 and 2011 discovered a minor but substantial advantage for females, particularly for linguistic and writing courses, and very minor for science and math. Following their finding, Voyer and Voyer (2014) deduced that while gender difference is almost based on

the stereotypes of test scores, females largely have better test scores irrespective of the subject. Therefore, despite the shared belief that boys outperform girls in math and science, females can also excel in these and other subjects that require logic and reasoning.

In some instances, teachers may unconsciously adopt stereotypical practices or routines that separate male and female learners. Parajuli and Thapa (2017) stated that teachers are persistent in the uncouth practice of determining student groups, performing lines and awarding prizes to students according to their gender. The authors further found that 8 per cent of teachers in their study were more caring and supportive of boys than girls (Parajuli & Thapa, 2017). Likewise, Gong et al. (2018) posited that educators tend to pay differing attention to girls as opposed to boys. The author elucidates that girl are normally praised for appearance, neat work, and good behaviour. Downs et al. (2019) also stated that boys were seen as the noise makers in class more than girls. Such treatment according to gender traits may lead to students feeling passive or assertive, which might in turn lead to poor performance and failure among the students (Downs, et al., 2019). A dated study by Gibbs (1994) also pointed out teachers' gendered behaviour where the teachers were found to favour male students more compared to females. The reason leading to such findings can be due to several reasons. A major reason may be due to disparities in the cultural and regional context where the study was conducted. However, in the Caribbean situation, female students are accorded more consideration and sympathy not only for cultural underpinnings but also for religious values (Jennings, 2001). In most festivals, for instance, women are considered goddesses. Such religious and cultural values might unconsciously guide the teachers in their slight favouritism or support of girls over boys in a regular educational setup.

It is further explained that boys' participation, enrolment and completion at key educational levels are low (Edwards et al., 2018). According to the authors, performance and participation correlate, in that performance boosts continuation and completion, while a good participation level is vital for performance (Edwards et al., 2018). Blad (2014) points out that learners who are continually absent from classes often demonstrate inferior test scores in comparison to those students who are seldom absent. The researchers have argued further in their expanded report that an improvement in class attendance by just a single standard deviation equates to an improvement in pupils' performance in Mathematics (Njal, 2017). Noteworthy, gender alignment has a substantial correlation with school attendance and classroom participation. Several studies have reported that female learners are mostly present in school compared to male students (Stromquist, 2022). Another article similarly revealed that students of the female gender tend to be less frequently absent from classes and school in contrast to their male colleagues (Benshaul-Tolonen et al., 2019).

In a study by Anderson & Romm (2020) conducted to explore gender composition about attendance, the study found that females were absent at an average of 1 per cent of the days, while males' absenteeism level stood at an average of 4 per cent. According to the study, females were mostly absent because of monthly sickness, while males gave different reasons including family emergencies, sickness, and injuries. A study examining 650 students conducted at Sussex University by Woodfield et al. (2006), found that female students attended class with a mean average of 88 per cent which was considerably greater than that of their male counterparts. Similarly, Kelly (2012), in his survey conducted at the University College of Dublin, reports that there is a substantial indication that when it comes to students living on campus females have a greater attendance as compared to males. The study also concluded that students who attended

classes 70 per cent of the time are more likely to have two in three possibilities of failing or a 4 out of 5 chances of receiving a low mark. Notwithstanding, the university has an 80 per cent rule outlining that for a student who does not attend at least 80 per cent of classes, there is a 50 per cent probability that the student will receive a failing grade there is still a high tendency of male absenteeism from classes compare to girls.

Overall, it has been argued that gender matters in the overall educational attainment of students. Female students seem to continually outpace their males in the educational realm. Different characteristics have been seen to affect the way different genders perform in the classroom. The society, culture, individual students, teachers and the school, as well as the various applications and treasure trove that are expressed in the school, have shown to be vital to a degree that they might mutually intensify and resolve the problem of gender and performance, particularly male academic underachievement. Teacher training and its interconnected facets like instructors' perspectives, behaviour, and suppositions, as well as classroom procedures and the interactions between teachers and the students, also influence the effectiveness of those within various school processes (Cobbett & Younger, 2012; Hartley & Sutton, 2013; Younger & Cobbett, 2014).

2.6.1: Male Underachievement

Researchers such as (Frank et al., 2003; Clark et al., 2008), have noted that the widening gender gap concerning educational accomplishment and attainment has turned into a global issue, with boys collectively lagging behind girls. In their study Younger, Warrington, and McLellan (2002) and Edmund-Woods (2001) collaborate on this by arguing that the differential achievement level of girls and boys has been a major concern in Caribbean education since the late 1900s and girls are improving more rapidly than boys. In their proposal enquiring into boys'

education, Rowe and Rowe (2000) argued that data indicative of the fact that boys typically perform at a considerably inferior level compared to females in most domains of the cognitively measured syllabus cannot be doubted and that this evidence is global. Edmund-Woods (2011) points out that this issue of underachievement in the academic performance of boys in the Anglophone Caribbean has been raised by several of the Ministries of Education. Besides, Bailey et al. (2002) note that a lot of research conducted in the Anglophone Caribbean countries regarding gender in education has mainly focused on the difference in achievement among other factors like gendered social paradigms, inequalities in access to education, gender-role stereotyping, and patterns of curriculum participation.

Generally, the poor performance among males in the Anglophone Caribbean might be due to several reasons. It is interesting that despite the patriarchal society in the Caribbean countries, girls are outperforming boys. Over the last three decades, governments, civil societies and non-governmental organizations in the Anglophone Caribbean countries have put in place several policies and programmes to sensitize more female participation in education, career and innovation, skill expansion, women's privileges and personal freedom among others (Jennings, 2001). Besides, females in the Caribbean seem to have restricted options, therefore, high educational attainment and increasing performance better in the educational arena are fundamental for their lives. Parents of girls have gotten increasingly sensitive in making sure that their children have improved educational opportunities for their career advancement so that they can have a better future than themselves. Similarly, boys in the Caribbean tend to be more engaged in non-academic activities than their counterparts. As such, after school, girls are often seen spending more time completing their assignments or completing their assigned homework and studying while boys are often laxer with their academics. This can easily explain their better

academic performance than boys, and can also help in explaining the problem of male pitiable educational attainment in the Anglophone Caribbean.

Jha and Kelleher (2006) in supporting this argument have also postulated that this apprehension is collective amongst policymakers and educators in the Anglophone region and that the concern for boys' underachievement is very high. The authors propose that as gender equality directories have enhanced in favour of females, the general focus is now on the correlative underperformance of males. Findings from Parajuli and Thapa (2017) have indicated that female learners continually outclassed male students when it comes to educational attainment. This was evident from the relatively higher statistical percentage (71.67%) significance of female scores and ranking in first or higher categories in comparison to their male counterparts. Parajuli and Thapa's (2017) report seems to mirror the conclusions from previous studies including Khwaileh and Zaza (2010) who established substantial differences in the academic outcomes of the different gender of students specifically highlighting female students' superior performance in comparison to male students. However, other reports refute the findings of scholars who argued that males perform significantly better when compared to females (Wangu, 2014), as well as those who deny the significance of gender difference and academic achievement (Goni, et al., 2015).

While the debate on poor school performance among boys has reached extreme proportions globally, there are many variations on the theme. In reviewing the findings of Noble and Bradford (2000) and Francis (2000), Marchbank (2002) reported that both studies queried the generality that males are underperforming and agreed that the fact of the matter is that all males are not underachievers and not all females are achievers, and that gender bias persists in some subjects and performance. The author, however, acknowledges that there is an agreement

that a broader spectrum of male students underperforms in comparison to female students. While

Clarke (2005) in his work conducted in Jamaica, points out that not all male students are poor

performers and that the entire female student population are not necessarily better performers

than males within the school. He contends that the evidence coming out of the two studies

conducted by him suggests that while the females are performing better than boys collectively,

middle-class males are performing better compared to other male students and working-class

girls. Besides, females of low socio-economic backgrounds were generally found to be achieving

at a higher level than their male colleagues, prompting the assumption that more than any other,

working-class boys are underachieving.

These conclusions are further reinforced by researchers Tinklin et al. (2001) who argued

that the average attainment figures obscure a lot of differences between various groups of

learners: some boys achieve remarkably high results, and some girls fail to attain examination

awards. The authors reported that the study findings revealed far more variance in educational

experience between extraordinary achievers and poor performers of both genders and amid those

from well-off and underprivileged circumstances than among males and females. The findings

made by Tinklin and his team are in line with the conclusions made by researchers Collins et al.

(2000) from Australia. These researchers contended that it would be of greater value to

contemplate the gender issues as a jigsaw rather than to examine gender perforation since boys

and girls are not congruent groups.

2.6.2: Key Findings on Performance and Participation

Concerning the Anglophone Caribbean region, data fetched from the Caribbean

Examinations Council (CXC) which is the regional assessing body dated from the 1990s

onwards revealed that across the Caribbean as a whole more females were taking these exit

examinations and further outclassing boys in all the content areas that are considered the

preserve of girls, with the male students accomplishing better scores in the content areas that are

historically linked to male students, as stated in the conference report "Addressing male

underperformance…" (Trinidad and Tobago (T&T) MOE, 1997). However, George (2005)

discovered that female students in Trinidad and Tobago receive more Grade I's than males and

thus were performing better than their male counterparts in all subject domains apart from

mathematics. These findings were mirrored with the findings from earlier studies conducted in

Barbados by Kutnick et al. (1997) and Kutnick (1999) where the authors observed that on

average, girls achieved higher grades than boys and that in addition, female students were

probable to be enrolled in courses like science and mathematics which were traditionally linked

to boys, at the very top levels of secondary education. The authors however observed that boys

obtained fairly higher grades the longer they were at school. A Dominican study conducted by

Goldberg and Bruno (1999) and one conducted by Kutnik et al. (1997) within Saint Vincent and

the Grenadines also reported similar findings.

Additionally, results from the Caribbean Examination Council (CXC) have revealed a

vivid portrayal of male underachievement. According to the 2012 report coming out of the

Caribbean Secondary Examination Certificate (CSEC) examination which often marks the end of

obligatory educational instruction, 64 per cent of the pupils who sat the examination were girls.

Besides, researchers explain that the statistics from the CSEC academic report revealed notable

gender variances with 44 per cent of girls registering the best grades of 1 or 2 in comparison to

33 per cent of boys. Noteworthy, the top scores ranging between 1 and 2 are given to entrants

who have demonstrated extensive knowledge of the major concepts, relevant competencies, and

content awareness of a given subject (Cobbett & Younger, 2012). In all the subject areas in the

Caribbean, the authors revealed that more than 135,000 female students achieved grades 1 and 2 in comparison to approximately 75,000 boys: a substantial difference considering that these numbers were almost equal at the beginning of secondary school. More recent data up to 2021 coming out of the Caribbean Examination Council (CXC) indicated a continued trend in female dominance.

The observations from the Caribbean are commensurate to the results from other regions such as those observed in the UK and Australia. Where factual data from different sources revealed that the gender gap in performance was great and girls outmatched boys in most subjects and less in math. The gap has however remained significantly small in sciences. Female students tend to record more commendable performances in most subjects at the GCSE level. Also, in regards to the pass rate, the gender difference is much smaller at the A levels as compared with GCSE, but it still exists. The gender difference in performance is mainly caused by performance differences in literacy-based subjects like English (Great Britain Department for Education and Skills, 2007; Collins et al. 2000).

Delving more into the global context, research conducted by Parker et al. (2018) explains that global media and educational statistics have shown a strong gender perforation in educational performance between females and males with male students dawdling behind female students regarding subject matter performance, high school completion, and college education matriculation and completion. Majzub and Rais (2010) have argued in their research, that male incompetency is a significant issue in Malaysia and around the world. The authors established that girls were performing better than boys in practically every subject area, regardless of whether their majors were science or not. They further noted that the condition became worse as

the learners evolved through the education ladder with eventual tertiary-level enrolment showing a 30-70% enrolment of males compared to females.

Reverting to the Caribbean, data from the Secondary Entrance Assessment (SEA) examination for 2003 and the 2004 nationwide assessment showed that female primary school learners in Trinidad and Tobago had a notably quantitative ascendancy in all evaluations and examinations at various grade levels. Conversely, the superior performance of females was minor or insignificant in mathematics and reduced significantly at the senior grade levels (Edmund-Woods, 2001). By contrast, in creative writing and language arts, the gaps were greater and favoured females. The poor performance of boys in English Language Arts varies exceedingly across the region and aptitude clusters, with a significant decrease in the performance gap for high-achieving learners from municipal regions (De Lisle et al., 2005; Kutnick, et al., 1997).

2.6.3: Factors Influencing Male Underachievement

Researchers from different countries and multiple disciplines have attempted to elucidate the predominance of and to disencumber the causes of the gendered performance gap in education. Robinson and Lubienski (2011) explain that literature on the factors influencing male underachievement is normally divided into two main camps, one that associates gender disparities with nature- biological or genetic dissimilarity between girls' and boys' development- , and nurture- contending that external factors like the teacher and the school explain the disparity. Alternatively, Warrington and Younger (2000) posit that the dialogue can further be written off as influences that are peripheral to the male students like the teaching environment and its materials and resources, against those that are associated with the male students themselves, comprising of perspective, motivation, and intellect. For policymakers and

practitioners involved in improving learning effects, the dialogue must be concentrated on the elements that can be managed directly through intercession. Hence, the other aspects and methods that need to be classified by eliminating the genetical ones are to contemplate those factors outside the school such as family, ethnic background, social class, and the wider society. As opposed to those operating inside the learning premises, such as teacher education, classroom customs, teacher-student interaction, and educators' beliefs and how these impact the male students' performances. Within this research, the latter (teaching, the school environment and its interior procedures and overall processes) will be the dominant focus.

The teacher, the learning institution and associated practices that are often manifested within the institution are vital and can both augment and ameliorate the problem of low performance among boys. One factor associated with the gender disparity in students' achievement is teacher gender. Dee (2006) in the study, to analyse the effect that a teacher's gender has on students' achievement utilises the United States National Education Longitudinal Survey (NELS) tool and drew significant patterns from the study's data from the NELS. The author postulated that in classes that are supervised by a female teacher, male students tend to be overly disruptive whereas girls are more undoubtedly passive, attentive and well-behaved. Besides, female students tended to have a more general dislike for the subjects taught by a male teacher and were afraid to ask questions. Boys also reacted negatively when taught by female teachers. The ensuing disinterestedness can be associated with underachievement among male students in schools.

Research has also associated teacher self-efficacy with male underachievement. Shaukat and Iqbal (2012) defined teacher self-efficacy as the beliefs shared by teachers on the ability to positively influence students learning. In a study by Shahzad and Naureen (2017), the authors

asserted that being that some subjects like math are highly stereotyped as the boys' domain, thus the teacher's efficacy levels whether female or male may perhaps be the contributing factor to such dogmas among students. Considering that teachers' efficiency influences their proficiency and general ability, disparities concerning how gender relates to their efficacy and philosophies can significantly affect classroom performance.

Teacher attitude and expectations also play a major role in students' achievement. For instance, data from the studies conducted by Clarke (2005) and Watson-Williams et al. (2011), indicates that teacher and student interactions are different in terms of feedback level and participation depending on the teacher's expectations. Furthermore, the findings showed that male students often respond to their teachers' beliefs regarding their lower educational attainment and classroom performances, and as such many boys who are smart and want to demonstrate their intellectual skills often do not get the necessary academic support from the instructional structure. Also, the wider societal discourse that is centred around hegemonic masculinity often negatively influences the educational achievement and behaviours of the boys. A similar study by Geisler and Pardiwalla (2010) supported the idea that most of the procedures and processes in school, teacher attitudes, and expectations were highly gendered and mainly worked against male students, consequently impeding their classroom participation and academic achievement.

Besides, in reviewing different studies from the UK and Australia, Connell (2005) established that teacher expectations, even when communicating indirectly, can significantly impact the performance of boys as well as girls. Drawing on a global review of literature on classroom processes from seven countries, Page and Jha (2009) and Stromquist (2007) settled on the same conclusion. This inference is vital for this study considering that the conclusion was

drawn from several countries with diverse cultures similar to the situation that exists within the Anglophone Caribbean. On re-examining the underperformance argument in the United Kingdom, Smith (2003) contended that the measure for underachievement could be caused by teacher bias, which promotes gendered expectations for girls and boys. The teachers might therefore be creating the gender disparity that they are supposed to address (Hodgetts, 2010).

Studies have also cited the interaction between teacher and student as having a potentially influential effect on male underachievement (Breman et al., 2006; Mathias, 2005) and have reasoned that differential attention to girls and boys such as the teachers' response to students might be an issue. The authors assert that differential teacher attention is to some extent an issue of behavioural and classroom management, where teachers often unconsciously direct adverse attentiveness to those specific pupils whose conduct might be more successfully governed with the use of other pre-emptive approaches. Therefore, the factor of teacher and student relationship which contributes to negative teacher attention should not be readily dismissed in investigating boys' underachievement since its impact can adversely influence the classroom environment for the boys considering that teachers' attitude and expectations as previously discussed are already biased towards the male students.

2.6.4: Strategies to Address Male Low Academic Performance

In an attempt to alleviate society's growing concerns surrounding male low academic attainment, innovative strategies have either been proposed or undertaken by individual learning institutions and various educational authoritative bodies. Studies originating within the Caribbean have supported that educational issues related to students' performance can largely be resolved through teacher education or training (Clark et al., 2008; George et al., 2009). In acknowledgement of the various theories that the problematic issue of boys' underperformance

can be effectively addressed by augmenting teacher training, Clarke (2005) examined the various

reforms to teacher training programmes in several Caribbean countries and discovered that these

new curriculums have integrated outstanding methodologies that are vital in helping the trainee

teachers cope with and carry out their responsibilities of the inculcation of students of both

genders. The author noted that the teachers who emerged from the new curriculum had a better

appreciation of the approaches toward sexuality and gender, and an awareness of how the

dogmas held towards these areas are potential contributors to pigeonholing within the learning

environment. Finally, researchers argued that teacher education practices and curricula in the

Caribbean should be revisited to replicate the necessity of instilling gender-responsive instructive

techniques and strategies (Barriteau, 2004; Clarke, 2007; Clarke, 2008). Barriteau (2004) also

proposes the importance of initiating regular development programmes in teacher education.

Clark et al. (2008) further suggested that teachers ought to expedite and embolden the use of

more interactive, engaging, and experiential instructional strategies for classroom learning.

2.7: Impact of Teachers' Attitudes, Perceptions and Pedagogical Practices on Students' Performance

A lot of attention is increasingly being paid to the relatively poor academic achievement

among boys in schools in the Anglophone Caribbean, with more and more researchers looking

into the reasons behind the deprived performance among male students. Globally, a lot of authors

have posited that education in the region requires major reform to guarantee that the majority of

the learners, irrespective of their gender as well as other socio-economic demographics, get an

education that enables them to perform well in school and be successful in their careers.

In his study, Karsli (2007) explains that the science of education is a professional space

and is developed under two main notions, education and instruction. The author notes that while

"education includes activities that equip the emerging generation with the needed information, understanding, ability, and attitudes to build character and prepare them for communal life" (Karsli, 2007, p. 9), "teaching involves the process that students develop talents during their schooling phase in proportion to their capacity" (Karsli, 2007, p. 17). However, the dominant and most vital element both in teaching and education is the instructor. Student achievement, being a hot-button topic in education today, has placed increased accountability on classroom teachers and the role they play in influencing performance. Gundogdu and Silman (2007) contend that the functions of a teacher in the current world go beyond the traditional teaching practices, and include taking on roles as organizers, managers, counsellors, observers, and evaluators. Everything that a teacher does in the classroom has an unparalleled rippling consequence, comprising their overall approach, perceptions, and teaching strategies. Therefore, teachers' lack or abundance of motivation can significantly impact the learners.

Defining student achievement and the elements that impact their educational progress is vital for an educator's success. Student educational outcomes evaluate the aggregated sum of educational content that is often learned by the student in a given space of time. It has been noted that besides parents, teachers are effectively in the driver's seat regarding the development of students' personalities as well as their overall academic and social performance. The key function for any teacher is to improve the ability level and prepare students for adulthood. The understanding and achievement of education in the contemporary world depend on teachers being efficacious in not only the academic advancement of the students but also the development of their social attitudes. Despite this understanding, Greenleaf (2008) states that while some studies on students' performance have directed their focus on individual traits of students that

may lead to poor performance, and downplayed the role of teachers in student's poor

performance, teacher and teaching qualities remain to be a major consideration of performance.

According to Ali (2009), a very important link exists between teachers' attributes and

learners' academic performance. Adeyemo (2005) also points out that teacher quality impacts

their instruction and the way students learn in the classrooms. Building upon the same point,

Greenleaf (2008) posits that there is a substantial association between educator worth and teacher

classroom execution. Besides, according to Akinsolu (2010), access to qualified and quality

teachers determines students' performance on the test and their classroom participation. Further

Coonen (2007) highlights the importance that has been positioned on the important part that

educators hold in influencing learners' performance and points out that teachers who have

undergone in-administration training are more worthwhile in teaching in comparison to their

counterparts with no training experience.

Most significantly, Wirth and Perkins (2013) portray in their study that the mentality of

teachers generally contributes to the learners' classroom participation, and consequently

performance. Adesoji and Olatunbosun (2008), further deduced that the learner's classroom

behaviour and perception of learning are influenced by the overall quality of the instructor and

the instructions given. This essentially means that the behaviour of teachers influences the

educational mentality of their pupils. In regards to the impact of the educators' personality, Adu

and Olatundun (2007) proclaim that the particular traits of teachers are often strong determining

factors in learner performance. The interface between educators and their learners is also critical

in both of their achievements. This interaction is a key feature in classroom administration and is

vital in determining the exertion of teachers.

The conduct of teachers, therefore, holds a prominent place in students' overall academic success. Effective teaching calls for unparalleled compassion, assurance, tractability, reliability, honesty, resourceful nature, and a positive attitude, especially towards the learners. Teachers should also act and react pleasantly towards the comments made by students in learning sessions. According to Danielson (2013), how teachers act or respond to their students largely impacts their performance. Teachers ought to praise, acknowledge, and pardon their learners to encourage good performance and participation from them (Danielson, 2013). Mortimore (2005) further supports that encouraging behaviours, particularly teaching behaviours, guide the learning and performance of pupils. An educator's behaviour is a key indicator of students' learning and performance. It influences the inspiration, commitment and accomplishment of learners (Mortimore, 2005).

A strong and lucrative teacher training behaviour is praised in the educational discourse as an academic performance-enhancing variable. Good behaviour is generally central in deciding the achievement of students and thus assumes a very fundamental role in teacher training (Opdenakker et al., 2012). For instance, learners who feel encouraged and supported by their teachers are bound to portray a sense of security in the classroom as opposed to their counterparts (Furrer & Skinner, 2003). Learners who get inspired by the professionalism of their teachers normally portray remarkable academic aftermath that is manifested through their behaviour and transformed mindset on education. Interestingly, students who do not feel inspired by their teachers tend to have reduced confidence and lose their sense of character, consequently impacting their overall academic achievement (Roseth, 2009). Most of the models used to train teachers about behaviour generally have three main components instructional, authoritative, and socio-passionate, all of which are related to the learners' scholarly and social achievement

(Hamre, 2009). A robust teacher conduct that involves giving learners the chance to react, take and receive positive criticism improves their overall academic achievement (Perez, 2011). By using teaching and administration practices that are encouraging, students are bound to execute their studies in a better way (Perez, 2011). Besides, developing studies have shown that enthusiastic training conduct is decidedly connected to good education performance outcomes.

Day et al. (2005) observe that committed teachers are those who see and care about their learners' welfare. Such teachers care for, respond to, and take care to ensure that the learners' exigencies are being met. These teachers endeavour to enhance the overall teaching and pedagogical skills and practice through continuous research and development. Committed teachers also converse with and pay attention to their student's needs, as well as continuously collaborate with others. They are often effective reflective practitioners and are also amply prepared for their lessons. An additional perception collectively held by dedicated educators is the belief that educating pupils is not simply a profession. These educators must devote their private time even external of school interaction periods. Committed teachers make it a lifestyle and often contemplate how to plan their class programmes to gather to students' needs while engaging in a number of personal activities (Day et al., 2005)

According to Can (2011), the fulfilment of a teacher's responsibility towards ensuring student academic success is possible through positive teacher attitudes, perceptions, and effective pedagogical practices. These elements provide teachers with the ability to develop healthy personality values and provide efficiency in the way they relate with students to enable them to freely develop their personalities. In the context of the Caribbean, significant research has been conducted concerning teachers' attitudes, perceptions, and pedagogical practice as possible mechanisms by which the gap in academic attainment between boys and girls, the majority and

minority, and learners from less or more economically prosperous family backgrounds could be developed and cultivated (Glock & Krolak-Schwerdt, 2013; Riley & Ungerleider, 2012; Sorhagen, 2013).

2.7.1: Teacher's Attitude and Student's Performance

Ulug et al. (2011) note that students' effort and dedication are not the sole contributors to their academic success, but it is impacted by a myriad number of influences primarily the teacher's attitude. Attitudes are functions of what humans think and feel and arise from related values and beliefs (Shah, 2009). Most times, the object of attitude is seen as possessing a good character, and this gives attitude a dynamiting character. For instance, an individual who has a pro-American attitude sees Americans as good people, while an anti-American will not see them as good people. Therefore, attitudes can either be positive or negative and involve emotions and feelings concerning social issues or objects. Given this premise, Shah (2009) explains that teachers can hold attitudes for varying levels of favourability towards their students, thus discriminating against various aspects of students' learning.

Effective teacher training according to (Clifford, 2006) does not simply concentrate on skills and the acquisition of knowledge, but likewise on the approaches and values that are critical if the teachers are to enable the learning, high academic achievement and performance of all learners at all levels. Teachers' attitudes determine how they consult with their students and the extent to which they value the consultation. This in return is reciprocated by a favourable or unfavourable attitude from the learners towards their teachers, consequently leading to improved or weak academic performance. Learners believe that a consultative teacher, who values consultation is good (Shah, 2009). Teacher training and their background play a very vital role in shaping their attitudes. Presently, education achievement is not only a matter to be resolved by

good pedagogy but also revolves around the approach of the educator concerning instruction and the students, hence educators' perspectives are of a very vital and protuberant importance in the study of learners (Shah, 2009).

The teachers are of real pivot importance to the entire education system and the success of the entire system directly hinges upon their attitude. A good teacher attitude enhances the lessons' instructional and learning activities including the formulation of instructive goals and aims, rearrangement and identification of the materials for instruction and learning to empower them to stimulate learners' curiosity and encourage their participation in the educational activities, in addition to ensuring a better educational progression (Ataunal, 2003). Shah (2009) further adds that attitude has always held an essential place over time concerning social behaviour and interaction. He further states teacher attitude is a major contributor towards academic success and to creating an excellent study pattern (Shah, 2009).

Teachers' positive attitudes often impact the motivation and attitude of the students towards school work, their self-confidence, personality development, and consequently their performance (Ulug et al., 2011). Ataunal (2003) further complements these claims by explaining that teachers, through either negative or positive attitudes in communicating with students impact the students' creativity and consequently impact their academic performance.

According to Gundogdu and Silman (2007), teaching goes beyond saying and explaining a topic to the students. The authors argue that the most basic teaching principle is the instructor's capability of supporting the learners and displaying optimistic conjecture to inspire the learners to learn better and improve their performance. Likewise, Yavuzer (2000) points out that while the teacher's positive traits enable him or her to build relationships with students that are often

positive, it further allows them to delve into the student's key academic pointers that are vital when paying individual attention to the students learning.

Referring to an earlier study by Frymier (1993) concerning the impact of constructive instructor attitude on the intensity of students' motivation, Ulug et al. (2011) note the author was keen on some behaviours for teachers including complementing, providing feedback for student work, being interested in students, and wanting to listen to them. The findings from the research depict that teachers' mannerisms and body language such as maintaining a comfortable posture, smiling, facial expression, and use of different gestures are key in improving the students' learning experience more so than the actual content.

Contemporary studies like that by Ojo (2018) have further noted that a positive teacher attitude enhances students' questioning and exploration given a suitable and conducive learning environment. Likewise, Wirth and Perkins (2013) in their study noted teachers' attitudes as an influencer in increasing the attention of students within the classrooms. On investigating how teachers' attitudes impact the performance and personality of Grenada's students, Burns (2011) revealed that the teachers' positive attitudes often impacted students' performance and personality positively resulting in a more rewarding school and social life.

Additional studies have shown a distinct impact on learners from the mutual interaction involved in the teacher and student relationship, as well as how teachers approach students, but most importantly how it impacts performance. Ulug and colleagues (2011) point out that the student's academic success and motivation are increased by the ability of their teacher to efficiently interact with them and display positive traits like asking questions, understanding students' thoughts, and showing appreciation and interest. In Jamaica, for instance, Clarke (2005) explains that the extent and intensity of the interaction among the students and their

teachers in terms of classroom participation and feedback depend on the teachers' attitudes. Considering the negative attitudes that some teachers in this region have towards boys due to social connotations and their prevailing trends of underachievement, this negatively influences the academic behaviour of boys (Watson-Williams & Riddell, 2011). Another study coming out of Trinidad and Tobago by Edmund-Woods (2011) supports the perception that the practices and policies, teacher outlooks, and beliefs in many schools in the region are highly gendered and work against the general interest of boys, consequently impacting their participation and educational outcomes.

Studies such as that by Jha and Kelleher (2006) note that students perceive their teachers as role models through their attitude and behaviour. They further argued that within the Caribbean female teachers are more dominant than male teachers, thus girls are likely to pick up female teachers as role models while the boys often seek role models outside the school and often end up with chauvinist examples to fill the gap not found at school. Owing to the belief that a positive attitude subscribes to success whereas adverse perspectives often give rise to non-performance, Hunte (2002) explains that resulting from this gendered gap between male and female teachers is that girls end up performing better while boys are left with an emotional deficit that inhibits on their progress. Gecer (2002) further notes that if a teacher is huge on belittling compliments towards a student because they fail, the negative impact of this on their overall academic success will be inevitable.

In a meta-analysis study by Ulug and colleagues (2011) about how teachers' attitudes affect the personality and performance of students, the participants described the positive attitude of teachers as understanding, compassionate, helpful, viewing students as humans, interested and friendly, tolerant and genuine, communicative, encouraging and supportive. While negative

attitudes were listed as vengeful, uninterested, intolerant, discrediting, not caring, angry and unreliable. They also established that positive attitudes by teachers have great potential to improve the success of students. From the responses, the majority of the participants (91%) believed that an encouraging perspective increased performance, while 0.9 per cent believed that it could negatively affect performance. In regards to how teachers' negative attitude affects students' success, the study showed that more than 75 per cent believed that it lowered performance while less than 5 per cent claimed that negative attitude improved academic success. Thus, the consensus is that teachers' attitudes thus influence students' performance.

Different studies by Page and Jha (2009) and Stromquist (2007) that were centred on a global assessment of discourses based on classroom processes within several countries on different continents shared a similar conclusion about teachers' attitudes. The findings indicated that in regions where the educators did not hold lofty expectations for male students, they performed poorly. This inference is vital especially because the conclusions reached were drawn from many countries on different continents that have different cultural contexts.

2.7.2: Teacher's Perception and Student's Performance

Similarly, researchers have also created a lot of interest around the teachers' perception of teaching and learning as a possible explanation for the achievement gap between boys and girls (Sorhagen, 2013). Adediwura and Tayo (2007) describe perception as having to do with how people view or judge others, and mainly happens among individuals who are familiar with each other. This view was further supported by scholars who provided a perceptive measurement of opinion and described it "as the process by which people relate meaning to experiences" (Eggen & Kauchak, 2001, p.5). Thus, as they conclude, "it is clear that perception is the reaction that is provoked when an impression is perceived from outside after making a connection with

other material in the memory" (Eggen & Kauchak, 2001, p.6) and therefore there is an association between teacher's perception and students' performance.

In an attempt to explain the impact of teachers' perceptions on students' performance, it is vital to recognize the association between instructors' perceptions and expectations. Studies have noted that teachers rely heavily on their general perceptions of how students learn, classroom behaviour and motivation as they work on tasks, which in turn helps influence students' academic performance (Kelly & Carbonaro, 2012). The researchers further posited that teachers' perception of students further shapes their expectations, and this has been noted to have substantial influences on the academic success of pupils. Teachers' expectations are also linked to their opinions of students' characteristics and traits including self-confidence, working ethics, classroom behaviour and reputation, not just to the background characteristics of the interrelations between teacher and learners. Although empirical evidence examining the association between teachers' perceptions of teaching and learning in addition to students' attitudes and the academic performance of the students is quite rare, few pieces of research have been done with a focus on such association.

Researchers such as Bonvin & Genoud (2006) and Rubi-Davies (2010) have also found that teachers' overall expectations concerning academic success among primary school students are positively associated with students' perception of their independence, self-confidence, and assertiveness. The aforementioned research revealed that educators often held elevated anticipations for the overall attainment of the students they considered to be more confident and self-independent than the ones considered not to have these attributes. A study conducted by Driessen (2006) further discovered that teachers' expectations were related to the perception of a student's social behaviour and engagement in the classroom. For instance, in referring to an

experimental study conducted by La Voie and Adams (1973) among 350 teachers, Timmermans et al. (2016) reported that children who were perceived by their teachers as poor in work habits, social and personal growth and attitudes, were projected to have lower aspiration and less ability than those with commendable conduct. In re-examining the underachievement argument in the Anglophone Caribbean, Edmund-Woods (2011) argued that the measures used for underachievement are caused by gendered biases concerning the nature or type of work that can be and ought to be performed by either girls or boys. They further argued that no matter the cause for high or low expectations of either gender, it remains that perceived expectations about performance affect future performances for both males and females.

Kelly and Carbonaro (2012) in their study also reflected similar findings where the authors reported that after controlling for the difference in performance levels between students, the perception held by teachers on the engagement of their students in the class was consistent in explaining the difference between teachers' expectations between the students. They further posit that when teachers perceive student engagement to be high then their expectations for the success of their students are often high. A reasonable explanation for this outcome as stated by Rubie-Davies (2008) is that students who are engaged are often more compliant and reflect appropriate and desired classroom behaviour, and this may contribute to teachers' high expectations. Research shows a prevalence in the Anglophone Caribbean, the United States of America, as well as the United Kingdom where both female and male teachers often view girls as docile less oppositional or resistant to authority, and compliant making them easier to instruct in comparison with boys who tend to be more difficult and oppose authority (Younger and Cobbett, 2014). Younger and Cobbett further assert that the results from the research also imply that girls are held at a much higher eminence as compared to their male colleagues and are often more

chastised for going against gendered expectations, and teachers often reflect their negative perception between boys and girls more salient.

Additionally, Einarsson and Granstrom (2002) conducted a study that surveyed teachers on their perception of the ability of students and discovered that male teachers often viewed boys as visual and kinesthetics learners as opposed to female students who are seen as auditory and classroom helpers. On the other hand, the researchers argued that female teachers portray opposite beliefs, in that, they tend to perceive boys to have better quantitative skills. The authors further acknowledged that a distinct difference exists in teachers' approach to and how they perceive male students as compared to female students. Male students are mostly adjudged as a menace to the established dominance laid down by male teachers when they challenge or question their directives. Contrarily, girls are mainly perceived as proactive and outspoken students. The stated roles are reversed when it comes to female teachers, who believe that the male students are exerting their logical and critical intellectual abilities while the female students are deemed as being disrespectful and rude. Einarsson and Granstrom (2002) note that this differential treatment has some significant impact on the general students' performance.

2.7.3: Pedagogical Practices and Student Performance

The phrase pedagogical practice is frequently used when referring to the teaching knowledge possessed by teachers. Pedagogical practices are generally the instructional and educational activities, comprehensively as well as classroom interactions that support content delivery as well as the use of various learning theories (Tsegay et al., 2018). Cunningham and Sherman (2008) illustrate that "pedagogical practices include the planning of lessons and preparation of resources (p.310)" intended to enhance the overall educational attainment of learners. Researchers have for the past few decades been interested in how pedagogical practices

impact performance and how the practices can be effectively used to address the overwhelming performance gaps among boys and girls, the majority and minority, and learners from less affluent upbringings (Sorhagen, 2013). In particular, countries in the Anglophone Caribbean have been facing increased pressure to enhance the teaching quality and students' learning experience.

In his attempt to demonstrate the importance of effective pedagogical practice in the learning system, Guerriero (2014) points out that pedagogical practices significantly influence the academic success and personal development of students. Shulman (2004) further explains that gaining wisdom in the teaching practice calls for the trailing and evaluation of pedagogical knowledge towards achieving mastery experiences. The author also posits that pedagogical knowledge is vital in facilitating effective teaching practices in ways that aim to provide students with the best knowledge and boost their academic success and career in the future.

Furthermore, Guerriero (2014) makes the point that more than course content teachers' pedagogical practices often impact the academic success of learners. The author further argues that student success is mainly achieved by way of pedagogical practices that enable the students to be active participants in the acquisition of knowledge and the instructional process. Participatory pedagogy practice enables teachers to influence their student's academic performance in various ways. For instance, Hardman (2016) explains that a participatory learning environment leads to higher cognitive activation, improved relationships between teachers and their students, and better instructional pacing. The author further augments that this kind of learning approach encourages a safe, active, cognitively stimulating, and highly collaborative learning experience for the learners. Moreover, Naylor, and Arkoudis (2015) state

that participatory pedagogy enhances student satisfaction with their respective subject choices, course design, and classroom interaction.

Nonetheless, not every teacher uses the interactive teaching model. The choice of the teaching approaches employed by teachers is influenced by different factors and the level of student participation. Baik and his colleagues (2015) explain that the teacher's professional training and their ability to incorporate and assimilate technology throughout the learning and instructional process significantly influence course delivery, student participation, and the rapport between instructors and their learners. Temple et al. (2014), for example, noted that class interactions that are purposefully handled enable teachers to enrich positively students' experiences by ensuring efficient and effective service delivery. They also posit that teachers' innate motivation is important in enhancing students' experience. A similar study by Ojo (2018) on teachers' instructional communication abilities regarding the educational achievement of high school-level students revealed positive correlations between teachers' communicative and instructional abilities and students' academic performance.

Nevertheless, studies have cited a widespread issue with student disengagement and passivity, which is mainly caused by poor and restrictive interaction between teachers and their students (Hermann, 2013; Rocca, 2010). Freire (2010) explains that immediately after teachers cease interacting and communicating with their students, the students tend to become oppressive and authoritarian. Daschmann et al. (2013) in collaborating with the views of Freire note that learners' overall engrossment in the learning and instructional process often deteriorates when positive communication between themselves and their teachers breaks down. This consequently impacts negatively on the academic performance of the students. Freire (2010) and Hooks (2010) suggest that it is imperative for teachers to positively interact with students by having a constant

dialogue that is characterized by a "horizontal relationship" as this makes for a more complete interactive relationship where information is more easily transferred. This, they argue will allow for greater student participation which will expand their horizons.

In the Caribbean context, poor teaching methods have been blamed for the relatively pitiful educational attainment among students, especially male students (Jennings, 2001). The author argues that the deficit of qualified and well-trained teachers in most schools in the Caribbean regions has seen teachers employing the most common and traditional pedagogical methods like lecture method, and drilling and questioning, which have been reported to negatively impact learning achievement. Bartle (2012) explains that teachers in these regions lack the necessary training and skills to employ "authentic pedagogical practices" which are centred on students' active involvement in higher and lower-order cognitive skills, and real-life learning. In his study, Jennings (2001) insists on the significance of dropping the traditional teaching methods and adopting the emerging pedagogical models that promote critical thinking among the students and use new technologies to aid classroom instruction.

2.8: Teacher Training Programmes and Performance Enhancement

Teacher training is a continuous practice among teachers globally, and it is intended to offer teachers the requisite knowledge and skills for the provision of education to learners. A common assumption in academic achievement is that adequately trained teachers will disseminate the content of their subject not only efficiently but also in a professional manner. Dated studies conducted throughout Texas, observed that variances in educator efficiency and efficacy were a crucial contributing factor to the variances in learners' academic success (Wright et al., 1997). Learners who were assigned to untrained and unproductive teachers in successive

lessons registered significantly poor results and gains in performance in association with their counterparts who were apportioned to extremely trained and productive educators repeatedly.

Over the past few decades, the Anglophone Caribbean has been experiencing increased demands for better-quality and more efficient education, accelerated by the notable poor performance of students, especially among boys (Louisy, 2004). Students in the Caribbean, especially, those in public government schools are said to be learning at an average of half the expected levels (to those attained by students in good private schools) (De Lisle, 2012), and lower than students in OECD countries (Gonzales et al., 2004). Available empirical data examining the possible causes of the low quality of education and male underachievement in the Anglophone Caribbean have linked these trends to the absence of quality or well-trained teachers and poor teacher training programmes (Bruns & Luque, 2014; Cook, 2016; Jennings, 2001; Stone, et al., 2020).

In the global stage of teacher training, a survey conducted in the United States of America observed that more than half of the teachers who were being studied continued to upgrade their skills through training (Mahulo, 2012). In a separate study concentrating on teaching staff training and development by Wanzare and Ward (2020), the authors noted that to expand teacher efficacy and consequently learner success, it was vital to expand the professional training programmes completely to in-service educators. The study revealed that among numerous additional factors, most educators participate in preparation programmes to advance their pedagogical effectiveness. For example, in the United States of America, a lot of attention has been channelled toward the role played by the teacher in ensuring good performance among students. To ensure that this is possible, more and more states have ratified laws to help expand educator growth explained Darling-Hammond, (2002).

Governments in the Anglophone Caribbean countries have also followed suit and made significant signs of progress in the establishment of advanced teacher preparation, which has been attested to by the continued establishment, upgrading and expansion of new universities and colleges that make available teacher preparation facilities and programmes through varied educational courses (Acosta, 2005). These efforts are in line with the Caribbean nations' goal of providing trained teachers to their schools for enhanced performance among learners, in particular male students, in their terminal examinations.

The level of teacher training in the Anglophone Caribbean region is measured by the number of teachers who have attained certified training as per the requirements of individual countries. Comparable data from a study by OREALC/UNESCO (2014) revealed that 72 per cent of secondary educators and 81 per cent of primary educators in the region had attained certified teaching training by the year 2013. Acosta (2005) further, noted that at hand there are major territorial disparities in the proportion of teaching expertise. While in some of the Caribbean territories, it is just about 50 per cent of secondary and primary instructors that are certified, in a few regions the percentage of certified instructors is close to 90 per cent. Cook (2016) points out that the fact that a major proportion of teachers do not possess certified teaching training is more worrying considering that the requirements for teacher training and certification are significantly low overall in the Anglophone Caribbean.

Besides, teacher preparation programmes in the Anglophone Caribbean have been noted to be insufficiently delimited and are of low quality (Jennings, 2001). For instance, considering the issue of male underachievement, research has pointed out that the pedagogical strategies being employed by most teachers in the Anglophone Caribbean region continue to be traditional and do not make enough provision for differentiated instructions to benefit the male learners

(Jennings, 2001). Furthermore, the author notes that most teachers have been trained to use the frontal teaching model which has increasingly been reported to neglect the needs of academically weak students, as well as garbling the most vital learning objectives (Barkley, 2020).

There is substantial literature pointing to the correlation between good teacher training programmes and overall student performance. The productivity of teachers has normally been viewed as an association between their preparation and student educational outcomes, especially in their exit examinations. Studies have often linked student educational success with the efficiency of their teachers' training and instructional competencies. For instance, Sinurat, Ginting & Lubis (2020) observed that a lack of training skills leads to teacher instructional incompetence or malpractice. Generally, teacher preparation encompasses the expansion of the pedagogical, social and human expertise needed to propel students to high academic achievement. Effective teacher training mainly concentrates on the acquaintance and or expansion of particular skills, attitudes and requisite knowledge deemed necessary to become an educator, to ensure all students acquire content knowledge and achieve extraordinary academic achievements (Clifford, 2006).

Most prior studies touching on this subject have significantly concentrated on educators' academic credentials, the number of years of tutelage involvement, as well as pedagogical practices and instructional strategies utilized (Beteille & Evans, 2019; National Research Council, 2001; Rose, 2002). The conclusions drawn from these works are, however, diverse. Even though it is explicit that some instructors are more efficacious in comparison to their colleagues in enhancing students' academic success, the studies show a considerably high consensus on how steadfast teacher training programs can enhance pedagogical practices and

instructional strategies consequently improving classroom practice and the overall performance of learners.

Over the past decades, there has been a myriad of scholarly reports exploring the connection between learners' academic attainment and teacher training. According to Kim & Seo (2018), if all the other education factors remain constant, there is notably an affirmative link between well-trained educators and their pupils' academic performance on classwork and examinations. A different study seeks to comprehend the connection between teacher advancement and their effectiveness. Miguel-Revilla et al. (2021) observed that teachers employed by top-performing institutions were more interested in in-service professional development programs to further develop themselves in comparison to their contemporaries employed by middle-level and low-achieving schools. Teacher training programmes that promote both knowledge and operative instructional techniques significantly impact the efficiency of teachers, hence extraordinary student educational attainment (Morgan, 2010). Preparation offers teachers the ability to garner great skills and knowledge needed to enhance and encourage superior educational outcomes and excellent productivity.

Furthermore, several types of research conducted across the United States of America also concurred that teacher training had a visible impact on the educational attainment of learners. For instance, Ashton & Crocker (2000) noted that teachers' training positively influenced both the accountability and performance of students, which was reflected in their exam grades. Additionally, Wenglinsky (2002) studied a population of students and their teachers and noted a positive correlation between learners who registered high scores in science and math tests, and trained teachers. In a different but relative study conducted by Rivers and Sanders (1996) in an attempt to assess the degree to which trained educators influence learner's

academic attainment, the authors observed that trained teachers who take on learners from unqualified teachers can easily enhance outstanding educational achievements for the learners in a single school year.

Similarly, Porter et al, (2001) suggested that teacher preparation occupies a crucial position in student academic attainment. Ashton and Crocker (2000) further observed a teacher's degree of efficiency depends on their professional training. Considering that such experiments highlight the influence of teacher training and academic achievement, the United States, in particular, started taking more consideration of the part that teachers play in improving the overall performance of learners. Therefore, to improve students' academic success, the majority of the regions across the wider United States of America have now enacted legislation geared toward improving the development of teachers. By getting into training, teachers can explore new and improved instructional strategies. Teachers in the Columbia District are periodically allowed five in-service days within the academic year to attend in-service training. Such training has been found to improve their quality over time, as well as the performance of learners assigned to them (Porter, et al., 2001). The conclusions from this research indicate that intensive and sustained training would likely have a favourable influence on teacher expertise and knowledge, and consequently the academic performance of students, as opposed to short training activities (Porter, et al., 2001). The ultimate goal for teachers attending training programs is to improve their overall effectiveness and performance outcomes. Educators who are well prepared and proficient for their tasks are more efficient with classroom operations and thus have the most influence on the learners' academic success (Guskey & Clifford, 2003).

Gamoran (2006) observed in his study that teacher training contributed to enhanced content delivery among trained teachers in classrooms. This consequently enhanced the overall

classroom performance of students taught by well-trained teachers (Gamoran, 2006).

Furthermore, Gurskey (2000), discovered that teachers who went through proper teacher training

programmes effectively used instructional and edification materials in their lessons. Often

effective use of instructional and edification materials enables students to have a proper grasp of

the content being taught, which eventually enables them to perform well on classroom

assessments and major examinations (Gurskey, 2000). The author further observed that teacher

training positively impacts an educator's ability to manage time and enhance evaluation

methods, and the practices and feedback that they offer to students (Gurskey, 2000). These

studies show that skis acquired through teacher training are significant in influencing the

academic performances and achievement of learners.

Studies conducted in the Caribbean have revealed that highly qualified teachers and

good-quality teaching have the potential to close the perforation in the educational attainment

among female and male learners', even among the economically disadvantaged and their more

affluent counterparts (King & Newman, 2000; Sanders & Rivers, 1996). The significance of

well-prepared and trained teachers is also recognized by the public. In an earlier large survey

conducted by Haselkorn and Harris (1998), the authors revealed that out of every ten people in

the United States, nine believe that the most suitable approach to enhancing the academic

success of learners is through putting qualified teachers in all classrooms. Besides, this survey

revealed that the public also shared a great consensus that special skills and training ought to be a

requirement of all presumptive educators and not just a decent education.

Beteille and Evans (2019) explain that most teachers' characteristics including pre-

service education, experience beyond the initial years, and educational qualification do not

determine the effectiveness of teachers in helping students to learn, which is often termed as

teacher value-added. A study examining the correlation between the trait of teachers and their value-added in Pakistan revealed that there was hardly any association between the qualification of teachers and their value-added in both private and government schools (Bau & Das, 2020). These results were earlier mirrored in an Indian study conducted by Azam and Kingdon (2015) that found very little association between the qualification of educators working in private educational institutions and teacher value-added. The findings from both studies indicating no correlation between value-added and qualification are parallel to the global discourse which indicates that the relation between discernible teacher traits and their value-addedness is enervated if present at all (Straiger et al., 2010). While qualifications and experience are critical aspects of teacher selection, their pre-eminence is usually very moderate to strongly impact positively on students learning.

The above is, however, not true when it comes to unique teaching practices gained from quality teacher training programmes. Studies have reported that effective teachers share certain training practices that enhance their pedagogical and instructional strategies. Numerous empirical researches have observed that teacher training has an affirmative effect on how teachers deliver content in the classroom, which in return enhances student learning. Highly trained teachers often possess a robust understanding and knowledge of the subject matter that they are trying to disseminate to their learners. Such educators integrate different instructional strategies to enable them to improve their content delivery ability inside the classroom. A German study conducted by Gamoran (2006) showed that teacher training significantly improves students' achievement as a result of its impact on instructional strategies, and content delivery in particular. Similar research conducted by Bai and Yuan (2019) also indicated that teacher training significantly enhances the instructional strategies and ideologies of teachers,

consequently enhancing content delivery. Furthermore, Jackson and Davis (2000) through their study examining how adolescents are educated in New York have concluded that teacher preparation enhanced teachers' instructional knowledge and skills, consequently boosting their delivery of content. Additionally, Morgan (2010) studied the benefits of training on teachers' professional development and reported that educators gain a better understanding that helps them enhance and deliver content more effectively within the classroom through effective training programmes. Overall, researchers agree that successful content delivery is often heavily dependent upon the effectiveness and qualification of teachers (Garet et al. 2001). This essentially means that teachers for good and improved academic performance, teachers need professional training to adequately equip for successful content delivery within the classroom.

A study conducted by Brewer and Goldhaber (2000) supports the positive impact that teacher training has on educational attainment when prominence is placed on subject area comprehension in contrast to certification. The authors also observed a consistent trend among science and math teachers who have majored in their field of instruction. According to their study, these teachers had higher achieving learners than their counterparts who were teaching subject areas to which they were ill-qualified (Brewer & Goldhaber, 2000). Noteworthy, the influence of teacher training becomes more evident in advanced subjects where teacher content knowledge is presumably more vital, for instance, in the sciences and mathematics. Using a different set of data for an elementary school, Rowan (2002) observed no significant relationship between teachers who had a mathematics certification and their content delivery or how this impacted the learning process of the student. The author's findings suggest that the subject matter knowledge in technical subjects like math can only be strengthened through teacher training as opposed to simply certification.

Furthermore, studies conducted in East Asia revealed that a few things stand out in well-performing education systems- China, Vietnam Korea, Singapore, and China. First, the school system in these regions ensures that all its educators have the mandatory comprehensive subject area and pedagogic methodologies through well-formed and well-structured teacher training programmes. Chen (2020) notes that in Shanghai, for instance, educators come equipped with robust subject area awareness and understanding covering a wide variety of content often comprising Math and languages. Besides, a study conducted by the World Bank (2018) to assess different teaching dimensions relating to instructional strategies and pedagogical practices showed that teachers in Guangdong, China performed at great levels compared to teachers in other countries. Besides, both studies showed that within China's professional educational sector educators were not just equipped with the content knowledge or an enhanced understanding of the way students often absorb knowledge and prospective misapprehensions concerning learning, but educators were also able to give accurate and succinct elucidations of their subject areas and refine their rationalizations depending on different situations. Additionally, their pedagogic techniques were found to have some unique traits: for example, they identify unconventional methodologies for their learners to acquire and understand the subject matter as well as an emphasis on inspiring learning and thinking.

Studies have further reflected on the positive impact of teacher preparation and the utilization of instructional aids and learning materials. The appropriate utilisation of teaching materials in both the instructional delivery and the knowledge acquisition processes significantly augments learners' content knowledge, and consequently their performance (Mahulo, 2012). Strong proof has been brought forth by studies observing that changes in teaching resources such as textbooks make an irrelevant difference if the teacher does not know how to utilize such

resources (Rowan, 2002). The author further adds that it is through proper teacher training that teacher can enhance the proper use of resources. A similar study by Richardson (2003) showed that teacher preparation equips educators with better prospects of enhancing hands-on work, which is assimilated into day-to-day school life and can potentially influence student academic performance positively. A different study conducted by Wenglinsky (2002) in Virginia state within the United States of America examined the impact of teacher professional advancement about the utilization of emerging technologies in education: in particular teaching and learning. The study observed a strong effect of teacher development on the utilization of technological resources like projectors, and computers. Teachers who were professionally trained were more conversant and found it easy to effectively teach students using these technologies to promote better outcomes in general academic performance (Wenglinksy, 2002). Therefore, considering that effective use of resources positively influences students' academic achievement, training programs can play a vital part in enhancing performance.

Teacher preparation programme equips teachers with time management skills which are critical in both the instructional and learning processes. Also, effective management of time contributes to the enhancement of learners' understanding, eventually leading to better academic performance (Grissom & Loeb, 2015). Professional teachers who have undergone very vigorous training programs are better able to effectively manage their time when teaching to enable their learners the achieve the most important content at the most appropriate time (Darling-Hammong & McLaughlin, 2011). Morioconi and Belanger (2015) further support these findings in their study where they observed that teachers who lacked professional development always complained of working under constricted work schedules and were unable to effectively execute

their teaching duties. This misdoing consequently impacted the student's performance in a negative way (Morioconi & Belanger, 2015).

A slightly dated study carried out on Kentucky teachers by Darling-Hamond (1998) observed that teachers were better prepared when it comes to managing their time, content, and teaching effectively because they had undergone a more extensive training program compared to teachers in other US states. A more recent survey conducted on Kentucky teachers further discovered that approximately 80 per cent of in-service teachers who had trained and graduated from Kentucky Colleges of Education were well-prepared for almost all the aspects of their new job, especially time management as opposed to teacher education from the previous studies (Darling-Hammond & McLaughlin, 2011). In both studies, learners who were being educated by the trained teachers reported good or improved performance in their examinations.

Angrist and Lavy (2001) in another important paper find that there is a particularly strong impact concerning the augmentation of teacher preparation programs to enhance students' academic achievement. In their study, the researchers used matching and difference-in-difference approaches to evaluate the impact of enhanced teacher preparation on the reading and mathematics attainment of Jerusalem 's school students of elementary age. The findings reported that improved teacher preparation enhances the students' performance and attainment by an approximate standard error of 0.25.

Sanders and Rivers (1996) in an earlier study that was aimed at measuring the residual and cumulative impacts of educator training and skills on learner academic success collected data on assessment results for a group of schoolchildren from when these students were in the second grade until fifth grade. After disaggregating the data, the researchers discovered that there was an influence of superior instruction on each of the students progressively. The authors

further noted that the academic achievement of the students in each grade level was emphatically connected with the calibre of the instructors with whom those pupils were assigned (Sanders & Rivers,1996).

Besides, studies have furthermore revealed that the most effective teacher training programmes improve classroom practices and students' academic success. For example, in their evaluation of intermediations for middle and low-income states including those in the Anglophone Caribbean, Snilstveit et al. (2017) reported that augmented teacher-steered interventions including structured pedagogy programmes were found to improve the students' mathematics outcome by 0.14 standard deviations and language score by a standard error of 0.23. This result is comparable to an average of six months and nine months respectively. The programmes used included the learning trajectories for different lessons and preparation to enable instructors to disseminate new materials and content to learners, and some included feedback and mentoring. In contradiction, community-based observations that were based on enlightenment movements to enhance amenable and improved outcomes in language arts by a standard deviation of 0.12 margin, while computer-assisted initiatives led to an increase by a small margin of 0.11 standard deviation.

Furthermore, research has also revealed that successful or quality teachers have greater potential to produce a major transformation in the educational trajectory of learners (Chetty et al., 2014). According to Bau and Das (2020), moving from a "low-performing teacher to a high-performing" (p. 80) teacher dramatically improves students' learning. From their research Bau and his colleague note that the effects of successful teachers who have undergone enhanced teacher training programmes measured from a standard error of 0.2 and above throughout the country of Ecuador to a standard error slightly above 0.9 within India, which equates to

improved teacher preparation programmes. In comparison, to effective and well-trained teachers who have positive impacts on students' overall academic and lifelong achievement, mediocre teachers contribute little to their learners' success (Chetty et al., 2014).

Hanushek and Rivkin (2010) An earlier study posits that good teaching training programmes not only enhance student performance but can also be an apparatus for enhancing impartiality among students where years of successive and outstanding instruction can counterpoise the erudition deficiencies of underprivileged learners. This is particularly vital in the Caribbean region where boys continue to face challenges in their academic performance and are more marginalized than girls. A study by Slee (2018) noted that there was a high consensus among Jamaican educational authorities stating that before 2016 the curricula used at the secondary and primary levels were too old and did not make adequate provision for differentiated instructions that would benefit male students. One of the participants, who is a Senior Administrator, noted that boys need a more hands-on approach to the curriculum.

The hands-on approach model was further supported by a principal in Jamaica's Cane Belt High School who talked of the preponderance of boys in the high school, many of whom were unable to read during admission. The principal believed that the only way to add value to his boys was by employing a more hands-on approach to the curriculum. The strong view held by these principals is further supported by other theoretical literature which points out that boys have different learning styles than girls (Gurian et al., 2011). This according to Slee has made the Jamaican Teaching Council develop and integrate new teacher training programmes to enhance the engagement and consequently the academic success of boys. Besides, this move is expected to keep the male students and the weaker students in general, more engaged in their studies (Ilori & Ajagunna, 2020).

Besides, research has noted that teacher training programs based on the constructivist philosophy emphasize the centeredness of individual students. Under this system, teachers place more emphasis on project-based and problem-solving learning with STEM integrated at all learning levels (Ilori & Ajagunna, 2020). The authors note that this augmented approach has the prospective of empowering students through a more hands-on experience that mimics situations in the real world, making the learning experience less abstract and more concrete consequently enhancing the educational achievements of the learners, especially boys who are more likely to be attracted to this hands-on approach model.

Furthermore, research has consistently stressed the influence of teacher preparation on the subsequent inclinations and teaching practices of teachers (Nuttall, 2016). While such studies vary in scale, Nuttall (2016) explains that most studies attempt to make sense of the thinking and practice of the teachers before and after their engagement with the training programmes being investigated. Teacher attitude and expectations play a major role in students' achievement. Particularly, research has constantly stressed the association between teacher attitude and inclusive education (Kurniawati et al., 2017), which is vital when tackling male underachievement in the Caribbean. For instance, in a study conducted by Clarke (2005) in Jamaica, teacher and student interactions are different in terms of the quality of feedback and level of participation depending on the teacher's expectations. Furthermore, evidence from Watson-Williams et al. (2011) has shown that male students respond to their teachers' presuppositions regarding their low academic achievement and notes that it is more probable that male students who would like to study and improve their performances do not get the necessary support from the educational system and the grander regnant masculine dialogue that dominates the educational achievement and behaviours of the boys negatively.

Another report by the Ministry of Education and Youth (2002) of Seychelles confirmed the perception that males' behaviour and performance tend to be significantly poor as compared to the opposite gender which to some extent is indicative of the indifference shown by boys towards learning. A similar study conducted by Geisler and Pardiwalla (2010) supported the idea that most of the procedures and processes in school, teacher attitudes and expectations were highly gendered and mainly worked against male students, consequently impeding their classroom participation and academic achievement. The teacher held considerably higher expectations for girls and was the favourite gender, while male students were marked as irresponsible, lazy and unmotivated. Teacher training programmes designed to influence teachers' attitudes and their teaching practice can be vital in promoting a positive teacher attitude that is inclusive of all learners and places special attention on minority learners who require special attention.

In the same breath, various reports on teacher training have shown that effective teacher preparation curricula are designed to enhance the self-efficacy of educators (Shaukat & Iqba, 2012). According to the authors, teachers who have a high self-efficacy about their capability often view teaching as meaningful and highly rewarding to the overall success of their students. Research has widely reported on the significance of instructor self-confidence in tackling marginalization within the learning environment. This can be significant in tackling the issue of male underachievement within the English-speaking Caribbean region, where male students are stereotyped in the learning environment. In a study by Shahzad and Naureen (2017), the authors asserted that being that some subjects like math are highly stereotyped as the boys' domain, lower efficiency and confidence levels of both male and female instructors could contribute to the increase of these biases among the teachers and their students. This according to the authors,

can influence teachers to have a misconception concerning their capability to efficiently impart knowledge in particular subjects to a given group of learners. Considering that teachers' efficacy influences their professional ability, gender disparities concerning their efficacy beliefs can significantly impact classroom performance. Therefore, considering the prevailing stereotypes that teachers have placed upon male students in the Caribbean, effective teacher training programmes designed to boost self-efficacy can be important towards tackling male underachievement.

Rose (2002) drawing from a 1938 study by Druva and Anderson, noted that the authors uncovered several vital and statistically important positive associations that elucidate the differing adaptability of teaching eminence in science tutelage. The study examined various teaching aspects including teacher professional training background, teachers' classroom behaviour, and student academic achievement. The findings showed that instructors with enhanced subject area knowledge in specific subject matters and educators with longer instructional experience are often more likely to use superordinate, cognitive-based enquiries when teaching. Besides, instructors with greater subject area knowledge were more oriented towards interacting with the learners by asking questions and having discussions in the classroom in comparison to teachers who possessed lower subject area knowledge. This was especially important in the situation where these were educators who taught biology. The researchers also noted that the ability of the students to comprehend the fundamentals of the scientific methods was significantly linked with the overall sum of courses from the area of science that the teachers had taken both in biology and related science subjects.

Similarly, in their research, Ramnarain & Schuster (2014) concluded that the teachers' comprehension of the content area, as well as their decisions and pedagogical orientations,

critically influenced their teaching quality. The authors noted that the capacity of teachers to select tasks, make curricular decisions, pose questions and evaluate the understanding of their students greatly relied on how well they understood a particular subject matter. A recent relative study by Nind (2020) also demonstrated an affirmative association between the professional preparation of middle-school science and mathematics teachers and the academic performance of their students. These consistent positive associations seem to support the significance of reforming and restructuring teacher training programs to promote advanced levels of teacher training in both pedagogy and content knowledge to enhance student academic success.

Beteille and Evans (2019) further explain that teachers have to be proficient in both their pedagogic methodologies and content knowledge, as well as an impregnable comprehension of the core curriculum and the attainment targets for their respective discipline; which are elements that can easily be acquired through well-structured and formed teacher training programmes. According to the World Bank (2018), vibrant, well-disseminated and coherent syllabi that are well organized across and within class levels, and that are allied with proper instructional aids will make it more flexible for instructors to achieve the goal of raising top-performing students. In the case of most English-speaking Caribbean nations, these resources are scarce or sometimes not available to teachers. An effective teacher training programme equips educational instructors with explicit educational objectives for the relevant subject area that is correctly arranged and organized for the appropriate grade level and age ranges. These qualities will ensure that educators can allot more of their time to the accomplishment of and the preparation of other crucial activities that quality educators are expected to do.

As noted by Jennings (2001), Caribbean countries mostly depend on on-the-job teacher advancement as a method to enhance classroom instruction. A method that is meant to instruct

teachers in content and pedagogy but has so far not been effective in improving the academic

outcome of male students. Studies have found school-based interventions to have some negative

relation with test scores and overall student performance. According to Snilstveit and his

colleagues (2017), such interventions decentralized authority to the local levels including, the

community, parents, and school leadership, and the substandard outcomes may be related to

enervated execution and capacity limitations. Despite the poor outcomes linked to school-based

interventions, studies have revealed that most countries in the Anglophone Caribbean region still

put up with the traditional school-based practices that do not make adequate provisions for

differentiated instructions that would benefit male students and boost their overall performance

(Slee, 2018). This explains the consistently poor performance among the learners.

Well-trained teachers have been shown to have delivered the subject content both

efficiently and professionally. While this should be veracity by all protocols and fairness,

researchers have argued that aside from the skills attained by educators through training, other

dynamics like sociocultural, ecological and fiscal situations play major roles in influencing

students' educational outcomes (Jackson & Davis, 2000). Therefore, for improved scores, to be

achieved, it is paramount to have a proper linkage between these factors (Paauwe, 2004).

Teachers who have undergone training are usually able to analyse such factors and incorporate

them into their teaching practices. In the bottom line, the interventions with the greatest impact

on students' academic success work through augmenting the teachers' instructional strategies

and pedagogical practices.

2.9: Summary of the Literature Findings

The objective of this research was to examine the correlation between teacher training

programmes and male underachievement in the Anglophone Caribbean. Thus, the focal point of

the assessment of the literature was on exploring and expanding the discourse of teacher training and its influence on students' academic performance, particularly in the Anglophone Caribbean nations. While the scope of the study explored male underachievement and how it relates to teacher training programs in the Anglophone Caribbean, the literature review delved deeper by exploring different aspects of teachers and the training programmes and how they influence the performance of students. The review then narrowed down to explore how the Anglophone Caribbean teacher training programmes influenced the performance of boys in the region. The broadness of the review was aimed at introducing the audience to how different teaching variables impacted learners and their performance, before narrowing down on how and why male learners are the most affected lot in comparison to female learners.

The review included a wide range of studies from different periods. More than 350 resources were used for this review, with approximately 60 per cent of the resources, being less than 5 years old. Considering that the issue of performance and teachers' training has been a long and outstanding issue that has been a matter of public interest for decades, it was paramount to use both new and dated sources of information to capture the subject matter from both perspectives. The information sources used in this review were generally scholarly peer-reviewed journal articles, empirical or evidence-based articles, books, dissertations and theses, government publications and reports among others. More than 80 per cent of the resources were peer-reviewed. A greater fraction of the sources that are not peer-reviewed were mostly government publications and reports from the ministries of education from different countries.

Credible sources of review centred on the variables of the study were obtained through the use of UNICAF University's online library resources facilitated through ProQuest library eBooks and eJournals as well as resources from the online library of the University of the West

Indies using the EBSCOHost research databases. Other resources were carefully searched and extracted from different online databases including Google Scholar, Government and Institutional websites among others. Additional scholarly and influential research was obtained through search engines such as Sage Journals and Publications and, the Educational Resources Information Centre (ERIC). As well as current and relevant Educational and Social Sciences peer-reviewed journals including the Caribbean Journal of Education, Economics of Education Review, The Caribbean Curriculum, Education Policy Analysis Archives, Gender and Education Journal, Journal of Educational Research, and Teachers and Teaching were all searched as these journals primarily offered critical and analytical educational reviews and insights.

The sources were evaluated before usage to guarantee that the evidence presented as part of the review was accurate and dependable. The main considerations in assessing each source included: the author's credentials; whether or not the author used empirical evidence to support his or her arguments; the biases of the author's perspective; and whether the source contributed to a more profound understanding of the study's subject among others.

The literature review was sectionalized into 8 central sections. The first section was the introduction. The introduction vividly explained the overall research topic and the depth of the information to be represented in the literature review. It also touched on the type of information to be utilized for the review. The second section provided a detailed theoretical framework of the main theories surrounding the issue of academic performance. Thirdly, the literature review provided critical research-based evidence about the correlation between teacher training and learner educational performance. The next section focused on teacher training in general and in the Anglophone Caribbean and included a subsection exploring the importance of the training programmes in the development of students, their performance and the educational system as a

whole. The fifth section reflected the education context in the Anglophone Caribbean, with a dedicated concentration on the countries' training programmes and the performance of students. It also highlighted how the training programs in the region impact student performance and content delivery. This was followed by a section discussing scholarly arguments on the role that gender played in student performance. This section also reviewed in detail the issue of male academic low performance globally, and in the Anglophone region specifically. Factors affecting boys' performance, as well as strategies to address them were also addressed. Next is the section that provides a scholarly discussion on the link between teachers' attitudes, perceptions and pedagogical practices gained through training and students' overall performance. The final section of the review examined literature that discussed whether reforming and restructuring teacher training programmes will lead to pedagogical practices and instructional strategies thus augmenting male performances. Chapter 2 was concluded by way of a summary of what the literature offers to the research and the basic themes that need to be explored within the Caribbean educational context in general and the Anglophone Caribbean in specific. Here the overall findings and critiques of the literature will be discussed highlighting gaps and just how the present research will contribute to this discourse on boys' educational outcomes thus illustrating the overall necessity for the present study.

In the theoretical framework, three main theories. The Stereotype threat model and cultural-ecological perspective are educational psychological theories that have their roots in the symbolic interactionist perspective of social interaction, gender-role socialization and teachers' perceptions of students and how these affect performances (Ogbu's, 1992; Steele's, 1997). One of the general criticisms of them is that they concentrate too much on social interaction and neglect the role of other significant educational factors on boy's performance while Anderson's

(2016) optimal resource theory (ORT) is an educational theory analysing how the general design of the instructional structure to include teachers' training and pedagogical practices influence performance. All three theories explain that the way teachers perceive males within the classroom, their instructional practices and the overall structure of the modern educational system significantly hinder male academic performances (Anderson, 2016; Osborne,1999). The leadership for social justice and the critical theories both provided foundational arguments on how the educational systems in general and teacher training programs specifically can be augmented to raise boys' performance (Bogotch, 2000; Horkeimer, 1993). In essence, these theories speak toward the development of a cultural and gendered pedagogical curriculum where the learning environment is comfortable for boys as this might significantly improve their academic performances.

The consensus from the research literature is that educational instructors are one of if not the furthermost critical educational factors affecting learners' academic success or lack thereof. Overall, it has been argued that what teachers do and say within the classroom has significant consequences for students' academic performance and concluded that there is a substantial association between instructors' training, professional development, self-confidence and content delivery and this, in turn, determines the quality of the teachers. Several researchers have concluded that there are positive associations between students' academic performances and their overall classroom experiences underlined by teachers; perceptions, expectations, attitudes and pedagogical practices gained through training. These researchers also stress the influence of teacher preparation on the overall perspectives and teaching practices of teachers and claim that these often affect teachers' attitudes and expectations which are major contributing factors to male academic success. As such effective teachers tend to be those who acquire robust training

and development that equips them with particular skills and knowledge that inform pedagogical practice. (Althauser, 2015; Gershenson, 2016; Harris & Sass, 2011; Kurniawati et al, 2017; Ladd & Sorenson, 2017; Nuttall, 2016; Sowder, 2007; Wiswall, 2013).

The literature also indicates that teacher quality and pedagogical practices are often linked to their training and that quality teacher training leads to teacher empowerment and self-efficacy that often impact content delivery and student development (Angrist & Lavy, 2001; Bizimana & Orodho, 2014; Clotfelter et al., 2007; Guskey, 2000; Harris & Sass, 2011; Ikram, Hameed et al., 2020; Knoblauch & Chase, 2015; Roofe & Miller, 2013; Sowder, 2007; Walker et al., 2016). In addition, teachers, professional knowledge and experiences inform teachers' effectiveness and resultant student performance (Boyd et al., 2009; Darling-Hammond, 2000; Goe, 2007; Gustafsson & Nilsen, 2006; Rice, 2003; Sorour et al., 2017; Wayne & Youngs, 2003).

Nonetheless, a few notable studies offer exemptions to the aforementioned conclusions by arguing that teachers' training, professional knowledge and experiences do not necessarily affirm students' academic success and in some instances teachers' development through training programmes while often having a minute impact on high performances but does not necessarily affect low performers (Cohen & Hill, 2000; Hurd, 2008; Wiley & Yoon, 1995

In the Anglophone Caribbean context, a lot of reports have noted a wanting trend in terms of students' academic achievement (De Lisle, 2012; Bruns & Luque, 2014; Marta Ferreyra et al., 2017). Students within the region are learning at an average of half the expected levels and are registering lower performance levels as compared to students in OECD countries (De Lisle, 2012; Gonzales et al., 2004). Noteworthy, the performance of male students is worse: boys have continued to register lower levels of educational performance and are outperformed by girls in

particular academic subjects and overall performance (Clarke, 2005; Edmund-Woods, 2011; Jha & Kelleher, 2006). Data from the literature has overwhelmingly attributed the generally poor academic success in the Anglophone Caribbean, as well as the gap in educational attainment between female and male learners to the poor teaching attitudes, pedagogical practices, behaviour, and unhealthy perceptions in the classroom environment, which is attributed to the insufficiency of properly trained instructors and the poor quality of the existing teacher preparation programs in the region (Jennings, 2001; Bruns & Luque, 2014; Cook, 2016; Stone, et al., 2020).

Concerning teacher training programmes and performance enhancement within the Anglophone Caribbean, the literature revealed that empirical data linking poor male academic performance to the quality of teacher training programmes are generally limited. What is present instead is the notion that there is a preponderance of poor quality or ill-trained teachers and poor teacher training programs where inadequate and traditional instructional methods are utilized within the classroom leading to low male academic performance. (Bruns & Luque, 2014; Cook, 2016; Jennings, 2001, Stone, et al, 2020). Nonetheless, the Caribbean literature has highlighted that highly qualified teachers and good quality teaching resulting from effective and improved teacher training programmes have been able to improve the gap between male learners and their female counterparts (King & Newmann, 2000; Sanders & Rivers, 1996; Snilstveit, et al, 2017)) thus highlighting the need for continued educational reform to include quality teacher training and improve pedagogical practices.

On the other hand, global literature supported the claim that effective teaching practices gained through quality teacher programmes enhance pedagogical knowledge, enhance equity and inform instructional strategies that often augment students' performances. Therefore, raising the

standard and quality of teacher training will raise content knowledge, and improve instructional strategies and content which will positively connect to performance enhancement (Angrist & Levy, 2001; Bau & Das, 2020; Chetty et al., 2014; Cohen, 2020; Hanushek & Rivkin, 2010; Sanders & Rivers, 1996; Slee, 2018). Likewise, various reports indicated that effective teacher training programmes often enhance teacher's self-efficacy and confidence leading to an improved classroom environment and performance (Nind, 2020; Ramnarain & Schuster, 2014; Rose, 2002; Shahzad & Naureen, 2017; Shaukat & Iqba, 2012)

The literature also indicated that there are researchers who are oppositional to the claim that educational qualifications and teacher training are effective means of determining teacher quality, effectiveness and value-added (Azam & Kingdon, 2015; Bau & Das, 2020; Beteille & Evans, 2019; Straiger et al., 2010).

Therefore, the overwhelming data coming out of the literature highlights the substandard quality of tutelage and lower educational achievement in the Anglophone Caribbean, especially among male students which are linked to poor teacher quality, pedagogical practices and inadequate instructional strategies. As well as the lack of or limited empirical data examining the association between such poor male academic performance and the calibre of teacher preparation programs within the region, thus, the need for the present study to tackle such a knowledge gap becomes apparent. The available empirical data on the educational issues and trends within the Anglophone Caribbean has indicated that there is a general absence of quality or well-trained teachers as well as poor teacher training programmes leading to the utilization of instructional strategies that are often ill-suited for male learners. As such, considering the issue of male underachievement within the region the link between teachers' overall quality, pedagogical practices and training needs to be explored giving credence to the present study. The consistency

of the positive association between teachers' quality, their training and students' performance begs for an exploration of whether significant reform and structuring of teacher training programs within the Anglophone Caribbean to promote greater echelons of teacher training in both pedagogic and content knowledge will enhance male performance. Thus, the research hopes to explore these issues as well as to expand the discourse on male underperformance to include the subliminal factor of teacher preparedness. The research will also bridge the gap in Caribbean literature concerning the link between poor male academic performance and the quality of teacher training programmes.

3. CHAPTER 3: RESEARCH METHODS

3.1: Introduction

This section of the study outlined the different steps and phases followed by the researcher in completing the study. It outlined the different procedures and techniques used by the researcher to collect and process data including the study's design and approach, the targeted demographic and sample size, the investigation's materials and instruments or data collection tools, operational variables, data collection procedures, ethical considerations, and finally the procedures of data gathering and examination.

The main premise of the dissertation was that teacher training programmes remarkably affected the educational success of male learners within the Anglophone Caribbean region. This idea was partially supported by the literature, nonetheless, further investigations in the Anglophone Caribbean setting needed to be conducted. Notwithstanding the numerous amounts of studies on the apparent marginalization of male students and their underachievement within the Caribbean region, as well as the adoption of the 2030 United Nations Sustainable Development Goals, especially, Goal 4 that focused on eradicating gender disparity in education, the English-speaking Caribbean nations were still battling the deep roots of gender inequalities that have entangled the education system. Despite the overwhelming concerns placed on the issue of males' mediocre educational attainment in the Anglophone Caribbean, only a minimal quantity of research had been conducted focusing on male education, with even fewer focusing on the importance of teacher training preparedness and its influence on male learners' educational success. The dismal quantity of data examining the link between teacher training and educational accomplishment was unfortunate since this information was vital in expanding the discourse on male underachievement beyond peripheral factors. Besides, while several

researchers had outlined various psychosocial and sociocultural factors impacting educational outcomes including teacher and student attitudes, the social environment, socio-economic background, teachers' pedagogical styles, and the learning styles of students, none of these studies examined the connection between teacher training and how well-prepared teachers were in utilizing teaching strategies that were engaging to help improve academic performance. Furthermore, existing research on such a topic were done in developed countries in the metropolitan north, and on the European continent, thus might not be suitable in the Caribbean educational context. That created an important need to address the literature gap surrounding male underachievement in the Anglophone Caribbean. Instead of developing on the trajectory of the previous investigators, the present analysis attempted to research the curricula of teacher training programmes and the underlying pedagogical practices to establish whether the teachers in the Anglophone Caribbean were well prepared to educate male students.

The study, therefore, attempted to address the paucity of scholarly discourse regarding how male students grasped knowledge and the potency of the association between male underperformance and instructor training within the Anglophone Caribbean, with a biased interest towards Jamaica, Guyana, Trinidad, and Barbados. The study attempted to determine how teacher training and preparedness affected male academic achievement through a two-phase explanatory sequential mixed-methodology where quantitative data was collected from preservice and practising teachers while the qualitative section explored the programmes and policies of top teacher training institutions focusing on the programme directors from the aforementioned Anglophone countries. The quantitative data was collected through well-structured surveys with the intent of aiding in explaining the central research problem and depicting it in its current context, while the qualitative information collected via semi-structured

interviews aided in exploring the research problem further by examining why the situation was the way it was.

The research design section outlined the procedures employed to carry out the research. It outlined the methodology utilized for collecting and analysing the information collected. The target population subsection outlined in detail the particular population utilized for the research and from which information is desired, and the sample design described the sampling unit, frame, procedures, and size. Under the materials or instrumentation of research tools section, the researcher outlined how the research tools were developed, including their origin, reliability, and validity. The operational definition of variables section discussed and defined the operational variables and variable types such as independent variables, dependent variables, and predictor variables for the study. Under the study procedures and ethical assurances section, the researcher described the systematic procedures used to collect data and addressed how, where, when and from what or whom they were collected, before addressing the specific ethical concerns in the study. Lastly, the data collection section described the type of statistical and narrative data to be collected and the procedures to be utilized in collecting the information, how it was tabulated, and the tools that were utilized in analysing the data.

3.2: Research Approach and Design

A pragmatic research design was employed by way of an explanatory sequential mixed method to collect and analyse data via the combination of both qualitative and numerical methods as outlined by Creswell and Creswell, (2019), to provide a comprehensive understanding of the association between teacher training programmes and the academic accomplishment of male students in the Anglophone Caribbean.

The quantitative phase initiated the investigation by employing a structured survey questionnaire distributed among preservice and in-service teachers across Jamaica, Guyana, Trinidad, and Barbados. This phase was aimed at quantitatively assessing perceptions and gathering statistical data regarding teacher training programmes' alignment with the needs of male learners. Findings from the quantitative analysis were intended to highlight trends, correlations, and statistical associations between variables pertinent to the study.

Following the quantitative phase, the research advanced into a qualitative enquiry focused on the programmes and policies of top teacher training institutions. Through semi-structured interviews with programme directors, the qualitative phase delved deeper into the qualitative aspects of teacher training, elucidating underlying reasons, perspectives, and contextual nuances. It helped to capture rich, in-depth insights that supplemented and elaborated upon the quantitative findings. A pilot test was performed for both the quantitative and qualitative research tools before applying them. This according to Fink (2003) was vital to ensure that the research led to the intended results by securing the desired outcomes and making the necessary adjustments before its final implementation

Integration of the two phases occurred at the interpretive stage, where findings from both phases converged and complemented each other. The qualitative data gleaned from interviews served to explain and contextualize the quantitative results. By triangulating both sets of data, a more comprehensive understanding of the intricate dynamics between teacher training programmes and male academic achievement emerged. This integration was intended to enable a robust analysis that goes beyond mere statistical associations. The qualitative insights illuminated the intricacies, shed light on underlying motivations, and provided a nuanced explanation for the observed quantitative trends. This integrated approach ensured the credibility

and depth of the study's conclusions, presenting a holistic perspective on the relationship between teacher training programmes and the educational achievement of male learners in the Anglophone Caribbean. The section provided an outline of the mixed methods research approach, and the reasoning for choosing such a method, in addition to explaining the consecutive descriptive mixed methods approach and the rationale for its selection.

3.2.1: Overview of the Mixed Methods Design

Mixed-methods investigative technique often referred to the research procedure in social, behavioural, and health sciences used to gather, analyse and mix data from both numerical and qualitative methods in distinct investigations to aid in understanding an investigative issue in completion (Creswell, 2014). The investigation of mixed research methods continued to evolve, with contemporary literature extending the discourse beyond traditional frameworks. While Creswell's foundational work served as a launching pad, recent scholarly contributions offered deeper insights into the epistemological and ontological underpinnings of both qualitative and quantitative data integrations. This methodology has gained increased acceptance in different fields of study, nonetheless, Creswell (2014) postulated that the collection and combination of quantifiable and narrative data in research were not contemporary. However, researchers argued that what was fresh was the combination of different sets of data presented through in a distinctive investigative design (Creswell et al., 2007).

It was further posited by Creswell (2014) that with this type of methodology, the investigator amassed both quantitative information, which was most restrictive, and qualitative information, which was unrestrictive and integrated the two sets of data to draw on the strengths of the two to get a more extensive perception of the problem under review. Contemporary perspectives on mixed methods emphasized the nuanced interplay between these data types and

their alignment with differing paradigms. The qualitative approach often resonated with interpretivism, acknowledging subjectivity and multiple realities, while the quantitative methodology, associated with positivism or post-positivism, leaned towards objectivity and causal explanations (Johnson & Onwuegbuzie, 2004).

Creswell (2014) further argued that this methodology focused on worldviews and philosophical assumptions such as pragmatism to boost the complexity of a study. Pragmatism, a philosophical stance prevalent in mixed-methods research, embodied a pragmatic approach to knowledge generation. It acknowledged the utility of both qualitative and quantitative data in capturing diverse facets of a phenomenon. Pragmatism, as advocated by researchers, posited that integrating these differing data types served the overarching aim of comprehensive understanding, aligning with the pragmatic principle that what worked best in solving a research problem should be adopted (Creswell, 2014; Tashakkori & Teddlie, 2010). The authors went on to postulate that every study categorically had a dominant theoretical supposition or a worldview that underpinned the investigation, and for the mixed-methods design, this might be a single assumption or multiple assumptions (Tashakkori & Teddlie, 2010). As such, it was the methods and techniques involved in the gathering and analysis of the data that were vital in the mixed-method approach (Clark & Creswell, 2008).

Furthermore, the integration of qualitative and quantitative data exceeded mere combination; it necessitated a deep understanding of their epistemological and ontological differences. Qualitative data, rooted in interpretative models, captured nuanced meanings and subjective experiences. In contrast, quantitative data, with its emphasis on measurement and objectivity, sought to quantify relationships and causal links (Teddlie & Tashakkori, 2009). The integration process of the qualitative and quantitative phases involved reconciling these distinct

approaches by employing convergent, explanatory, exploratory, or transformative designs (Creswell & Plano Clark, 2011). For instance, an explanatory sequential design might commence with the collection and analysis of quantitative data, and followed up with qualitative data collection to elaborated on quantitative findings, allowing for a more comprehensive understanding (Creswell & Plano Clark, 2011).

Considering the provided definition, however, some types of research could not be considered a mixed method. For instance, research studies that simply combined numerical and narrative data but excluded the use of a distinctive scientific approach or an evaluation technique could not be considered a mixed methodology (Creswell & Creswell, 2019). In exclusion of such studies, the main traits of the mixed methodology as suggested by Creswell and Creswell (2019) included the gathering and scrutinizing of qualitative and quantitative data sets to explore outlined study questions; utilization of rigorous quantitative and qualitative methods; a combination or incorporation of both data sets by using a specific method of mixed methodology design and interpretations of such integration and might sometimes involve the framing of the design with a relatable theory or philosophy.

Furthermore, in designing a study using the mixed-method approach, Creswell et al. (2003) suggested three issues that the researcher needed to take into consideration. These included "implementation, prioritization and integration" (Creswell et al., 2003, p.112). According to the researchers, priority referred to the particular method either quantitative or qualitative upon which emphasis is placed in the study. Whereas, implementation had to do with how the data is collected and analysed and used whether sequential or chronological, one after the other, or concurrently or in parallel. Finally, the integration stage was the process that involved the connection or mixing of both statistical and descriptive information.

Integration between these phases were achieved at multiple levels of the research process. During that critical juncture, the rich qualitative insights derived from interviews served to contextualize, explain, and complement the numerical findings garnered from surveys. Moreover, the integration extended beyond mere juxtaposition of findings; it involved a complementary relationship wherein qualitative insights served to elucidate the "why" behind statistical trends observed in quantitative data. This reciprocal enrichment allowed for a comprehensive understanding of the intricate dynamics between teacher training programmes and male academic achievement within the Anglophone Caribbean. Additionally, the integrated interpretation enabled the synthesis of findings to address the research questions holistically. The qualitative data served to shed light on the contextual nuances and depth that might not be captured by quantitative analysis alone, enhancing the richness and depth of the study's conclusions. Figure 3.1 below shows an overview of how the mixed method technique would be applied in the study.

Figure 3:1

Mixed Methods Integration
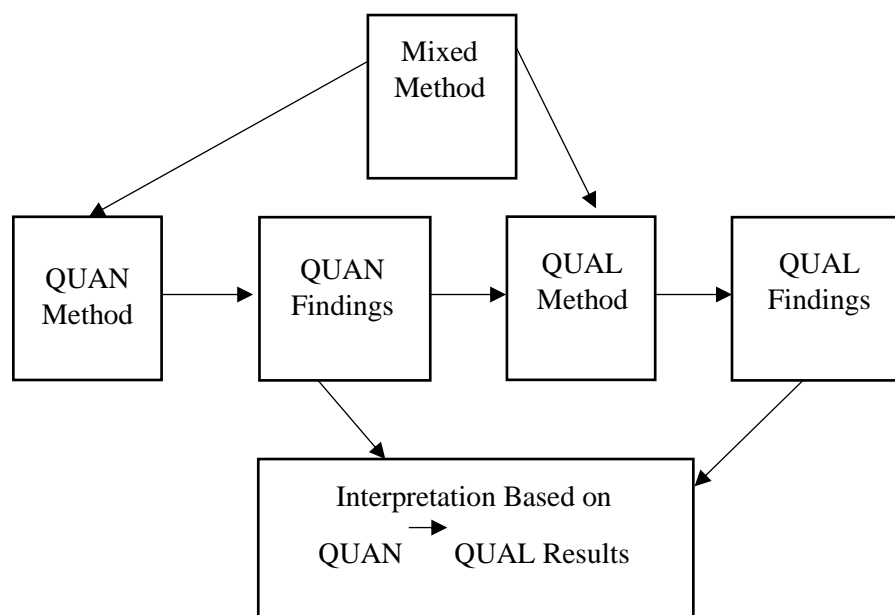
In the mixed methodology research design, researchers normally built the research knowledge on a logical basis since asserting truth was what worked best in solving a research problem (Creswell, 2014). Here, the researcher chose the approaches as well as the different types of variables for the research and units of analysis which were well suited for answering the prevailing study questions (Fàbregues et al., 2021). The primary premise of pragmatism was that the quantitative and qualitative models are harmonious, as such both textual and numerical information was collected from these respective models either concurrently or sequentially and can aid in gaining a better conception of the research issue.

3.2.2: Rationale for Mixed Methods

The utilization of a mixed-methods approach within this dissertation to investigate the effect of teacher training programmes on the educational achievement of male learners in Anglophone Caribbean countries was underpinned by the need for a comprehensive understanding of a complex educational phenomenon. In particular, the current dissertation proposed to address the insufficiency or the absence of academic discourse examining how male students learnt and the relationship between the way teachers were trained and male academic underachievement within Anglophone Caribbean countries, with a biased interest towards Jamaica, Guyana, Trinidad, and Barbados. The study attempted to determine how teacher training and preparedness affected male academic achievement. Therefore, the research called for a more comprehensive view of the area and required the collection of more reliable data regarding the phenomenon than either just a numerical or a qualitative approach. In this regard, the mixed-method take was selected since it had overreaching benefits including complementing both the qualitative and quantitative perspectives.

While the researcher could have employed the already existing rich traditions within each of the paradigms, the researcher chose to endure the trouble of using the mixed-methods design due to its inherent capacity to bridge gaps and generate a more holistic perspective on the intricate relationship between teacher preparation and male academic underachievement. Support for the central concept of mixed-method could be made in different areas. While some research problems could be adequately resolved by using a singular model of inquiry, others demanded the use of a mixed-method approach. For instance, determining some of the main reasons for male underachievement would not have called for the collection of quantitative data. However, determining the reasons for male underachievement and also understanding the teachers' perception through their experience with teacher training programmes and classroom preparedness and practices would have required a mixed-methods model.

Scholars such as Johnson, Onwuegbuzie, and Turner (2007) advocated for the mixed-methods approach, asserting that its integration of Statistical and qualitative methods offered a greater comprehension of complex research inquiries. In line with this perspective, the present dissertation sought to closed the gap in the academic discourse by analysing how male students learn and elucidating the link between teacher training and male academic underachievement in the context of Anglophone Caribbean countries. The decision to adopt a mixed-methods approach was not arbitrary but rather a strategic choice rooted in the type of research queries and objectives. The number one motive for the miscellany of a mixed-method technique for the present dissertation over traditional research designs included the fact that the overarching goal of the dissertation and the specified research objectives as outlined in the previous chapters required the combination of the quantitative and qualitative perspectives.

As highlighted by Creswell and Plano Clark (2011), the integration of qualitative and numerical data was imperative to delve into the complex aspects of male underachievement in education. While quantitative data alone might capture statistical trends, qualitative data provided depth, allowing for a comprehensive exploration of teachers' perceptions, experiences within training programmes, and classroom practices that influenced male students' learning experiences. The method proffered strength to the weaknesses of qualitative or quantitative research thereby suiting the current study since the researcher intended to ensure a rigorous approach to a complex issue.

Moreover, the incorporation of subjective and numerical data aligned with the study's objectives, aiming to quantitatively examine how educators' perceptions and policies influenced on male student learning while qualitatively exploring these phenomena through the lens of programme directors' experiences. This convergence of approaches strengthened the overall inquiry by capitalizing on the strengths of each method while compensating for their limitations (Teddlie & Tashakkori, 2009). The mixed-method approach aided in countering enquiries that could not otherwise be fully examined through a singular approach and it boosted the collaboration of researchers across two fields. Besides, there was insufficient research exploring how teacher training programmes and preparedness in the Anglophone Caribbean affected male academic performance.

Therefore, mixed-methods approach in research investigations were not merely a fusion of different investigation techniques but a deliberate strategy to gain a comprehensive understanding of a multifaceted issue. This approach enabled researchers to draw on a wide range of data collection tools to comprehensively study an issue; a vital consideration for a complex study like the one under investigation. Generally, the practicality of this approach was

grounded on the assertion that individuals are disposed to solve problems using both words and numbers. In essence, the pragmatic adoption of mixed methods in this dissertation underscored the recognition that a comprehensive understanding of educational phenomena often necessitated embracing both qualitative narratives and quantitative statistics. By aligning with this approach, the study endeavoured to contribute substantively to the discourse on male academic underachievement within the Anglophone Caribbean.

3.2.3: The Explanatory Sequential Design

The Explanatory Sequential Design stands was a methodological cornerstone in contemporary research, particularly in unravelling multifaceted phenomena, as evident in educational studies. This structured design involved an initial quantitative phase followed by a subsequent qualitative phase, each building upon the findings of the other. Utilizing a mixed-methods approach in research necessitated adopting one of three primary designs: explanatory sequential, exploratory sequential, or convergent design (Creswell & Creswell, 2019). The present study, therefore, incorporated one of such mixed designs in the form of the explanatory sequential design consisting of two main phases as posited by Creswell (2014). The explanatory approach intended to first conduct a quantitative strand and further conducted a qualitative component to elucidate the findings of the numerical data. The explanatory approach led with quantitative data compilation and evaluation to explore the research problems raised in the inquiry. The researcher then collected qualitative information to illuminate the conclusions drawn from the numerical data.

In recent scholarly discourse, Subedi (2016) underscored the indispensable role of Explanatory Sequential Design in educational research. They accentuated its capacity to provide comprehensive insights by strategically intertwining quantitative and qualitative data, making it a

powerful tool to explore complex educational phenomena. To further support this perspective, a recent study by Toyon (2021) elucidated the efficacy of discriminant functional analysis in educational research. Toyon emphasized its application in deriving insights from survey-based quantitative data, aligning with the study's quantitative phase approach (2021).

The study employed this design to interrogate the intricate dynamics between teacher training programmes and male academic achievement in the Anglophone Caribbean. On one hand, in a quantitative research model, the investigator depended on numerical data and used post-positivist assertions to develop knowledge (Bowen et al., 2017). The researcher separated the different variables and informally relayed them to get the frequency and level of their relations. Besides, the investigator independently determined the types of variables to explore and chose the research tools that will produce exceedingly consistent and binding outcomes.

On the contrary, qualitative enquiries in an explanatory sequential design acted as an investigative process of understanding. Here, the investigator created a multifaceted, rounded framework, examined literature, reported the comprehensive views of research respondents, and carried out the inquiry in a "natural setting" (Creswell & Creswell, 2019, p. 212). In qualitative investigation, information was gathered from informants who were involved in the ordinary life situation in which the research was formulated. The exploration of data was centred on the principles that the participants of the study ascertained about their world.

To maximize the potential benefits of this mixed-method approach, a web-based survey along with semi-structured interviews were administered with different respondents. In phase one of the study, the investigator strove to understand the deeper and wider replies from introductory and working teachers regarding their opinions on teacher training programmes and preparedness and the way they thought these influenced the academic results of male students in

the Anglophone Caribbean through a web-based survey that sought to collect first-hand experience and explanation of factors that might hinder boys from outperforming girls in the academic realm. This phase was used to gather quantitative numeric data through the survey where the information collected was exposed to a discriminant functional analysis to discern patterns and preliminary associations. Bakla, Çekiç and Köksal, (2013) championed the utilization of web-based surveys in educational investigations, noting their efficacy in capturing a wide spectrum of opinions and experiences. Their work aligned with the choice of survey methodology in the quantitative phase, emphasizing the relevance of such data collection strategies.

After getting a clearer insight from the survey, the factors of teacher training programmes and classroom preparedness determined were used to create the investigative framework for phase two of the research which utilized a qualitative approach. Here, the investigator conducted interviews using the semi-structured approach to explore the structures and policies of top teacher training institutions concentrating on the programme directors. Here, the focus shifted to textual data, contextual insights, and narrative accounts, a strategic shift stemming from the quantitative phase's emergent themes. In the case of this study, textual data was collected via the semi-structured interview process from the selected participants to aid in explaining why particular teacher training dynamics established in phase one might be vital pointers or determiners of male underachievement in Anglophone Caribbean nations. Bakla, Çekiç, & Köksal (2013) exploration of qualitative research methods in educational studies highlighted the important role of interviews in eliciting nuanced perspectives. This reinforced the significance of the study's qualitative phase, harmonizing with Morgan and Patel's (2003) insights into the depth and richness of qualitative data.

The explanatory sequential design employed in the study was fundamentally aligned with the intricate nature of the research objectives. It catered to the complexity of the investigated problem by amalgamating quantitative rigour with qualitative depth. This integration fostered a holistic comprehension of the factors influencing male academic achievement within the realm of teacher training programmes. Through the lens of contemporary literature and validated methodologies, our research harnessed the explanatory sequential design as a robust framework. This strategic methodological approach stood as a beacon, allowing us to navigate the intricate landscape of teacher preparedness, student engagement, and gender-based educational disparities in the Anglophone Caribbean (Bowen et al., 2017).

3.2.4: Rationale for Explanatory Sequential Design

The current study examined the relationship between teacher training programmes and male academic underachievement in the Anglophone Caribbean region. While research on boys' underachievement had been widely explored, there was a dismal amount of study exploring the effect of teachers' training and overall preparedness on boys' academic attainment, particularly in the Anglophone Caribbean region. Therefore, to address this issue more appropriately, the dissertation had to better explore the research problem through quantitative data, for instance, which factors within the teacher training and the preparative process influenced the academic performance of male learners. Besides, the information from the qualitative phrase and the analysis of such could further enhanced and elucidate the conclusions drawn from the numerical data. Through a more in-depth scrutinization and dissection of the acumens of the professionals that were intricate to the advancement and expansion of teacher preparation programmes and curriculums in the Anglophone Caribbean countries, the conclusions would have been less partisan.

Noteworthy, precedence in this Explanatory Sequential strategy was particular to the quantitative technique mainly on account of the quantitative approach epitomizing the main facet of data gathering and examination within the study and focusing on the detailed descriptions of quantifiable data and findings through the exploration of maximal variation cases. Most of the quantitative element first went into the sequence and were utilized to explain the predicting ability of the particular features of teacher training and preparedness that influence the academic outcome of male learners. Both the qualitative and quantitative research techniques are joined at the initial stage of the quantitative stage while deciding on the respondents in place of the assessment of the current case study of teacher training programmes in the Anglophone Caribbean and developing the questions to be included in the questionnaires with the questions for the interview constructed on the outcome from the numerical assessments. Besides, the findings from both sections were further combined in the discussion of findings section.

3.3: Population and Sample of the Research Study

Most mixed-method study designs often utilized the same participants throughout both phases of the study. However, according to Creswell and Plano (2007), this trend was not obligatory for explanatory designs. The authors noted that explanatory study designs utilized a different procedure where the respondents used in the initial stage of the collection of data were typically not the same individuals used in the subsequent stage(s) of the research. Since the quantitative stage of the investigation intended to generalize the result to a population, a new group of participants was utilized for the ensuing study stages (Creswell & Plano, 2007). Accordingly, the current study used different participants in both the qualitative and quantitative stages of the investigation.

3.3.1: Participants and Sampling in the Quantitative Phase

Groves et al. (2004) defined a study's target population as a set of units being studied, while a sampling frame referred to the cataloguing of all the components in a study's core audience. The research sought to identify the association between teacher training programmes and male academic outcomes within the Anglophone Caribbean region. Therefore, the targeted population used in this phase of the study would include in-service and pre-service teacher trainees from four Anglophone Caribbean countries. While there were up to 15 English-speaking countries in the Caribbean, the study would be carried out on participants across 4 countries within the Anglophone Caribbean region namely: Jamaica, Guyana, Trinidad, and Barbados. Considering the lack of highly trained teachers in most of the Anglophone Caribbean territories as discussed earlier in the previous stages of the current dissertation, these countries were particularly selected for the study due to their larger presence of trained teachers (Jennings, 2001). The sampling frame consisted of pre-service and practising teachers recognized as members or trainees through the teaching councils of their respective jurisdictions.

Some inclusion and exclusion criteria for creating the targeted demographic sample intended for the numerical stage of the research have been considered. In educational fact-finding, it was essential to pick a specific group of relatively homogenous populations (Siegle, 2015). The exclusive and inclusive standards dictated the type of respondents that were involved or kept out of the sample. Whereas, the inclusive standards distinguished the sample demographic in a constant, unvarying, objective, and dependable way, the exclusive criteria entailed features or traits that made certain members of the intended population ineligible for the research (Patino & Ferreira, 2018). The inclusive criteria considered were practising and trainee teachers from either the male or female gender and aged between 20 to 65 years to ensure that

the informants are good decision-makers for themselves. The in-service teachers were those who held an official teaching certification recognized by the jurisdiction of any of the four Anglophone Caribbean countries and had actual classroom teaching experience with both male and female students within the Anglophone Caribbean.

Pre-service teacher trainees, on the other hand, included teachers who were currently in the process of preparing to become teachers and were undergoing a teacher training programme in a recognized teacher training institution in any of the four Anglophone Caribbean countries. However, the study excluded first-year and second-year pre-service teacher trainees. The main justification for this exclusion criteria was that teacher trainees who were early in the teacher training programmes might not have had adequate practical knowledge and information on the important aspects of teaching and training, and some might have been too young to be able to make legal and binding decisions without parental consent. Table 3.1 below summarized the key criteria for including and excluding participants in each group of participants, facilitating a quick understanding of the eligibility requirements for both in-service and pre-service teachers in the study's quantitative phase.

Table 3:1

Summary of Inclusion and Exclusion Criteria of Participants in the Quantitative Phase

Participant Group	Inclusion Criteria	Exclusion Criteria
In-Service Teachers	Certified teachers in Anglophone Caribbean countries, aged 20-65. Teachers with classroom experience in the Anglophone Caribbean.	First and second-year in-service teachers. Teachers without official teaching certification.

Pre-Service Teachers	Trainee teachers in recognized institutions, aged 20 to 65.	First and second-year pre-service trainees.

Data from this phase was collected quantitatively using an online survey conducted with participants recruited through snowball sampling. Parker, Scott and Geddes (2019) described snowball sampling as a non-probability sampling technique where the researcher asked one or more of the available subjects to recruit other people whom they knew and might also have been interested in participating in the investigation and fit the inclusion standard to form part of the sample. Snowball sampling was among the different sampling techniques classified under convenience sampling, and just like any non-probability technique, snowball sampling greatly relied on the judgment of the researcher. This sampling method was especially useful when the subjects being studied were hard to reach (Polit & Beck, 2006). For example: in cases where the population of interest was hard to access; if the sampling frame was unavailable such as in cases of people with rare diseases; or if the study focused on sensitive topics like extramarital affairs (Parker, Scott & Geddes, 2019).

Particularly for this research, the researcher opted for snowball sampling because the intended participants for the study were not easy to access or locate for different reasons. The scope of the study would be the Anglophone Caribbean and the intended sample for the inquiry comprised entrants from four Anglophone countries namely: Jamaica, Guyana, Trinidad and Barbados. Within the time scheduled for data gathering, the researcher was in the United States of America, and her movement was limited due to the global travel restrictions that were imposed following the COVID-19 pandemic outbreak. Besides, considering the intended sample

size of the research, which was 100 people, the researcher could not manage to achieve the target without soliciting help.

The snowball sampling process consisted of two phases. In the first phase of the snowball technique, the researcher located the first few samples through convenience sampling and asked them to refer their acquaintances fitting the desired research sample (Parker, Scott & Geddes, 2019). Having been an examiner for the Caribbean Examination Council for more than a decade, the researcher had been able to interact with and was in contact with teachers across the regions selected for this study. Therefore, the researcher used this to her advantage and conveniently solicited the first few subjects for the study and requested their assistance in referring their colleagues who fit the study sample thus accomplishing the first phase of the snowball technique.

The second phase of the snowball technique involved using the subjects from the first phase to find the remaining subjects until the sample size was met (Parker, Scott & Geddes, 2019). Therefore, using the referrals secured from the first phase, the researcher started reaching out to the referred colleagues who also referred more colleagues. The process continued until the researcher had identified sufficient units to meet the desired sample size. As stated by Polit and Beck (2006), the snowball method was efficient and cost-effective. For these reasons, it conveniently aided the researcher in accessing participants who would otherwise be impossible to locate. Besides, this sampling technique took a little time especially while the referral was readily available. It also enabled the researcher to communicate better with the subjects because they were acquaintances of the first sample, who also had links with the researcher (Polit & Beck, 2006).

The total sum of respondents selected through the snowball sample is 100 informants. This number was specifically selected by the researcher for the study because it was deemed a

manageable and accessible number that could be located with a more significant guarantee of maximum return rate considering that a snowball sampling technique was used. The participants were categorized into two main categories as follows: in-service (practising) teachers (n = 60) and pre-service trainee teachers (n = 40). To guarantee that the information collected would be suitable for evaluating how teacher training impacted students' performance, the greater number of the participants had to consist of in-service teachers because, in comparison to pre-service teacher trainees, they could provide more information relating to training and practice. The sample further consisted of both female (n = 76) and male (n = 24) teachers. According to statistical data from the World Bank, the ratio of female to male teachers in the Caribbean was currently 4.3:1 (Bruns & Luque, 2014). This was the reason why a majority of the respondents who filled out the inquiry instrument were females. Besides, the participants were equally distributed from the four Caribbean countries as follows: Jamaica (n = 25), Guyana (n = 25), Trinidad (n = 25), and Barbados (n = 25), to ensure that the perspective of all the four countries selected to represent the Anglophone Caribbean was captured equally and accurately.

3.3.2: Participants and Sampling in the Qualitative Phase

The main intent of the qualitative phase of the research was to construct and validate questions for the semi-structured interview reflecting on the quantitative outcomes from the initial phase that could have been used to answer questions concerning the nature of teacher training programmes in the Anglophone Caribbean countries and about their efficiency or deficiency in influencing performance equality among students. Participants used in this phase were vital in providing the insight required to answer RQ3 and offered suggestions for addressing RQ4.

For this section of the study, the investigator employed the purposive sampling technique to recruit the contenders. Just like for the quantitative phase, contenders from the qualitative stage of the inquiry were selected from the four Anglophone Caribbean as per the scope of the study. Therefore, considering the travel bans that were effective during the period scheduled for data collection due to the COVID-19 pandemic as well as the information that the investigator aimed to collect, purposive sampling sufficed as the best method to locate participants. Through the gatekeepers' letters sent to the desired training institutions, the researcher was able to make contact with the referred participants who met the set sample criteria for the qualitative phase.

After getting potential referrals for the qualitative phase, the investigator utilized purposive sampling to select the participants needed for the sample size. The purposive sampling technique which was frequently utilized in qualitative research involved the intentional, subjective, or judgmental selection of individuals from a non-probability sampling where the researcher relied on his or her judgment when recruiting members of the population to take part in the study (Emmel, 2013). The main idea behind a purposive sampling technique was to recruit participants who had the characteristics needed in a study sample, who were well-positioned to best respond to the main research questions, and who were considered to be information-rich or think tanks in a given area of study (Emmel, 2013). In other words, the subjects in purposive sampling were selected on purpose. In the instance of this inquiry, the investigator purposefully intended to select individuals who were especially knowledgeable in the issues about the policies governing the Caribbean education system.

The participants selected for the qualitative section of this investigation included four informants, who were curriculum directors of the top training institutions from the four countries included in the study (Jamaica, Guyana, Trinidad and Barbados). The decision to utilized a small

sample size of four curriculum directors for the qualitative section of this inquiry was grounded in careful consideration of several key factors, prioritizing depth of exploration, resource constraints, unique population characteristics, and achieving data saturation. In regards to depth of exploration, the primary focus of this qualitative inquiry was to delve deeply into the experiences, perspectives, and practices of curriculum directors within the Anglophone Caribbean educational context. By intentionally limiting the sample size, the study aimed to ensure a thorough examination of each curriculum director's role, challenges, and strategies related to teacher training and its effect on male academic performance.

Besides, there was also the issue of resource constraints. Practical considerations, such as time, budget, and logistical challenges, played a significant role in determining the sample size. Accessing curriculum directors within the Caribbean region posed logistical complexities, and the global travel restrictions, particularly during the COVID-19 pandemic, further constrained the researcher's ability to reach a larger pool of participants.

Furthermore, curriculum directors represented a distinct and specialized population within the education system. Their role involved significant responsibilities related to shaping and implementing educational policies and programs. Due to the unique nature of this population, identifying and engaging curriculum directors was inherently challenging. Finally, the qualitative phase of this study aimed to achieve data saturation, where the collection of additional data ceased to yield new insights. By focusing on a small but diverse group of curriculum directors, the study anticipated reaching saturation more efficiently. This ensured that the depth of understanding gained from each participant contributed substantially to the overarching goals of the research.

Table 3.2 below detailed the qualitative population sample that was employed in the study. The contributors were selected for case study analysis that was conducted through rigorous informal interviews. Again, due to the disturbances to global affairs and travel restrictions brought about by the COVID-19 pandemic outbreak, the researcher conducted the interviews through online tools including Skype, Zoom, or over the phone depending on the convenience of the participant.

Table 3:2

Summary of Participants in the Qualitative Phase

Participants	Gender	Age	Origin	Qualification	Occupation
Participant 1	Male	34	Guyana	PhD	Deputy Dean of the Faculty of Humanities and Education at the University of Guyana for 6 years
Participant 2	Female	62	Barbados	PhD	School of education at the University of the West Indies for 18 years
Participant 3	Female	48	Jamaica	PhD	Assistant Secretary General of Professional Services at the Jamaica Teachers' Association (JTA) for 6 years Program Director MICO University College for over 10 years
Participant 4	Female	51	Trinidad	PhD	Teacher educator at the University of West for over 10 years

Owing to the sequential plan of the research, the selection of the four respondents for the qualitative part was dependent on the quantitative segment of the investigation. Grounded upon

the outcomes from the questionnaire, the criterion sampling method which was a judgmental sampling method was utilized. Criterion sampling implied the selection of a sample centred on specific pre-determined standards (Palinkas et al, 2015). This strategy was significant to the research since it helped the researcher to study very narrow criteria and understand their implications in a comprehensive framework (Palinkas et al, 2015). In the research, the predetermined criterion of importance was that all four participants were very respected experienced curriculum or programme directors from top teacher training institutions in their respective countries. This allowed the researcher to gather different perspectives from individuals who were more familiar with the complexity of male academic performance in the wider Anglophone context. The participants selected represented both genders, diversity within age and experience level, different demographic features such as the country of employment, and who identified with approximate level of displeasure with the condition of teacher preparation programs as well as the underperformance of male students.

3.4: Materials/Instrumentation of Research Tools

As mentioned in the earlier sections, the study utilized the mixed-methods design by way of a sequential explanatory design comprising two separate phases. In the primary stage, the investigator gathered quantifiable data using a cross-sectional web-based survey to identify how teachers' training influenced the academic attainment of male learners in the Anglophone Caribbean. Phase two of the investigation would be a qualitative study and would use a mixed case study approach through semi-structured interviews to explain why the factors identified in the first stage were vital pointers or determiners of male underachievement in Anglophone Caribbean nations. In this segment, the researcher furnished a detailed explanation of the

investigative tool and instruments used to collect both quantifiable and narrative information, including information regarding the instrument's origin, validity, and reliability.

3.4.1: Phase 1: Quantitative Data Collection Measures

The quantitative portion of this dissertation focused on understanding the deeper and wider responses from practising and trainee teachers regarding their views about teacher training programmes and preparedness and the way they think these influenced the academic outcome of male students in the Anglophone Caribbean through a cross-sectional web-based survey that sought to collect first-hand experience and explanation of factors that might hinder boys from performing as well as girls in academics. A cross-sectional survey according to McMillan (2000) collected information and data to make inferences relating to a given population by a given juncture. In a cross-sectional survey, the researcher observed the different research variables but could not influence them. This data collection tool was cheap and presented an easy method of collecting data and identifying the associations that could be investigated further. In the instance of the present investigation, the data collected from this segment of the investigation was used to guide the qualitative phase of the investigation. By way of this phase, the investigator was able to ascertained the main areas and factors of teacher training programmes and preparedness that impacted the academic performance of male students and create a research framework for the second phase of the dissertation. Connelly (2016) further noted that a cross-sectional survey allowed the investigator to gather information from a broader supply of participants and associated variances among clusters. Considering that the quantitative phase of the study sought to collect data from trainees and practising teachers in different Anglophone nations, this type of survey appeared to be more fitting.

The main technique employed to collect the quantitative data for the investigation was a self-constructed questionnaire that comprised items of diverse arrangements, inclusive of objective response questions; questions that call for dichotomous answers like 'Yes' or 'No'; questions asking either for a single selection or all that apply; questions measure using the Likert point scale; self-assessment questions; and open-ended questions. The study employed the help of a panel of professors and research teachers teaching in the Caribbean teacher training programmes as well as the dissertation supervisor to secure the content and face cogency of the assessment tool.

Questions geared at eliciting demographic information were included in the first part of the questionnaire. This section provided subjective data about the participants including their gender, age, employment, nationality, country of residence, region of employment, education background, teacher training background, and work experience. Some questions were included in the survey.

The subsequent section of the questionnaire asked questions relating to the teacher training programmes of the selected Anglophone Caribbean countries and the teachers' experiences of the programmes. This part included the selection of questions having to do with the status of the disciplines or subjects taught in the programmes. The questions here were surveyed using a 5-point Likert scale where 1 equates to "Strongly disagree" while 5 equates to "Strongly agree", and it provided data about how the training programmes, the training institution faculty, and the institutional-related factors impacted the quality of training and their experiences in the training programmes. This section was vital in answering RQ1 and RQ2b, by helping to connect teachers' training to practice and to identify the approaches that could be

implemented within teacher training institutions and by policymakers at large to enhance male academic performance.

Section three of the questionnaire measured the comfort level of the teachers with the current teaching environment of schools in the selected Caribbean countries and provided additional information regarding how the school environment impacted their service delivery. This phase was also measured using the 5-point Likert-type ranking extending from "Very uncomfortable" to "Very comfortable", as well as unrestricted questions to enable the teachers to give adequate feedback about the latter part. This part of the survey was vital in answering RQ2 and in particular RQ2a, where policymakers in the teacher training institutions helped with the identification of the prevailing learning conditions in schools and strategize how they could enhance the training programs to fit the current conditions.

The fourth segment of the survey concentrated on the experience of in-service teachers with teaching students and intended to provide data related to the experience of teaching male versus female students. Particularly, this section asked for the teachers' estimation of how the male students were motivated to pursue their education during classroom sessions as compared to female students. At this stage, a 5-point ranking that extends from "Strongly disagree" to "Strongly agree" was employed to measure their experience. Besides, the researcher used other varying types of questions, including questions that called for dichotomous answers like 'No' or 'Yes', and questions asking for either a single option or all that applied to show their experience of teaching the male versus female students. This was a broad question, thus the researcher intended to capture as much insight as possible into the learning experience of male students. As such this section was vital in answering sections for RQ1 and RQ2. By identifying the erudition trends of female and male learners, the researcher could establish whether these behaviours

impacted the attitude of teachers when teaching either male or female students, as well as identified whether the teachers are introduced to instructional strategies that could empower them to effectively teach the male students given their traits.

The fifth section concentrated on how several exterior and internal elements were impacting student learning and the service delivery of teachers with a biased focus on male students. Thus, helping to provide important information regarding the first investigative question (RQ1) of the dissertation. Similarly, the views of the teachers would be measured through different types of questions including the 5-point Likert scale, open-ended questions, multiple-choice questions, questions that call for dichotomous answers like 'No' or 'Yes', and questions asking for either a single option or all that applied. The sixth and final section asked for teachers' opinions about the current training programmes and whether the current teacher training practices could be augmented to increase gender awareness to improve male academic achievement. This section was vital in answering both the RQ2, RQ3 and RQ4 sections of the study. This section was measured using open-ended questions.

The survey used different question formats depending on the preceding debates including the 5-point Likert scale, open-ended questions, multiple-choice questions, questions that call for dichotomous answers like 'No' or 'Yes', and questions asking for either a single option or all that applied. Besides, the option of "Not Applicable" (NA) was also included wherever applicable.

The questionnaire used for the survey was web-based and was made accessible to the participants through a URL which was sent to all the qualified participants as identified by the researcher and respective colleagues across the various Caribbean countries. A major advantage of using web-based surveys was that the responses garnered from the participants can be stowed in a central file and could be effortlessly converted into quantitative numerical information using

Microsoft Excel and SPSS file compositions. An operational electronic mail address for all the potential respondents of the study was readily available. The participants' informed consent letter was also included on the first page of the questionnaire. After opening the document, the participants would have to choose between two options as followed: "I agree to complete this survey" or "I do not agree to participate in the survey". Choosing the first option would allow the participant to access the survey, while the latter option would immediately exit the participant from the survey page.

The six scales survey tool used to measure the different research variables was constructed and patterned a mixture of questions from previous research tools employed to measure the effect of a teacher's training on the learners' academic performance (Browder et al., 2005; Harris & Sass, 2011; Jacob & Lefgren, 2004) since there was no readily available tool examining the overarching aim of the research. Also, the instrument was trialled and verified using randomly selected participants fitting the exact criteria selected for the general participants of the research. The piloted questionnaire was also internet-based in format. The study was piloted to authenticate the research tool and to assess its consistency. Also, the piloting of the instrument was vital in determining the length of the data collection process and whether the tool assessed what it purported to assess. The analysis from the preliminary study aided in establishing constancy and interterm correlation, content validity, and logical cogency of the questionnaire. As per the preliminary test outcomes, the questionnaire items were amended, replaced, or eliminated accordingly.

The dependability and consistency of the research tool were vital in quantitative research. Generally, they aided in the reduction of inaccuracies that might emanate from mensuration issues in the investigation. The validity, according to Thorndike and Thorndike (1997), indicated

the degree to which an investigation accurately assessed or reflected the precise postulations or

constructs that were being measured by the researcher. They also postulated that reliability had

to do with the precision and accuracy of the measurement (Thorndike, 1997). Both the test-retest

consistency and inter-item correlation of the investigative tool were achieved through pilot

testing. The uniformity of the scales was ascertained by finding the measure of internal

consistency of the pilot study data. Aron, Aron and Coups (2005), noted that Cronbach's Alpha

was one of the most prevalent reliability measures employed to ascertained the inter-item

correlation of research instruments.

3.4.2 Phase 2: Qualitative Data Collection Measures

The qualitative stage of this dissertation focused on complementing the findings of the

quantitative phase and helping the investigator achieve a greater comprehension of the

quantitative phase. This phase collected textual information via semi-structured interviews to aid

in explaining why particular teacher training programme elements tested in the first stage might

be vital pointers or determiners of male underachievement in the Anglophone Caribbean.

Semi-structured interviews: semi-structured interviews were a qualitative research

method employed in this study, providing a flexible yet focused approach to gathering in-depth

insights from participants (Magaldi & Berler, 2020). In contrast to structured interviews with

predetermined questions and fixed responses, and unstructured interviews that allowed for free-

flowing conversations, semi-structured interviews struck a balance. They offered a predefined set

of questions while permitting the exploration of emergent themes through open-ended

discussions (Creswell & Maitta, 2002). Semi-structured interviews were employed as a

qualitative research method to delve deeply into the perspectives of introductory and working

teachers regarding teacher training programmes and their influence on male educational

achievement in the Anglophone Caribbean. This approach allowed for flexibility in questioning while maintaining a predefined structure to ensure that key topics were covered (Creswell & Maitta, 2002).

The interviews were done virtually via Zoom, a platform facilitating real-time interaction despite geographical distances. Virtual semi-structured interviews combined the benefits of face-to-face engagement with the convenience of remote participation. This approach allowed participants to express their views within the context of their professional settings, offering valuable insights into the research topic. Each of the participants was informed of the recording process and provided consent, adhering to ethical standards. Confidentiality measures were implemented to safeguard participants' identities, and the data were securely managed in compliance with ethical guidelines (Liamputtong, 2013).

Besides, participants were engaged in interviews during their working hours, ensuring discussions occurred in a natural and professional environment. Conducting interviews within the school setting provided a contextual backdrop, enhancing the authenticity of participants' responses. On average, interviews lasted between 40 minutes to 1 hour, striking a balance between comprehensiveness and participant engagement. The semi-structured format allowed for probing questions and follow-ups, enabling a thorough exploration of participants' experiences and viewpoints. The audio and video virtual interviews were recorded to capture nuanced details, including verbal expressions and non-verbal cues. Video recordings enhanced the depth of analysis by preserving participants' gestures and emotions. Subsequently, transcriptions were generated, ensuring accurate representation and facilitating rigorous analysis.

The interview tool included ten to fifteen unrestricted questions that were preliminary verified with randomly selected participants with similar criteria as the target respondents. The

questions for the interview were based on the outcomes of the survey which examined the relationships between teacher training programmes and the predicting factors that influence performance equality among students. The interview questions primarily focused on questioning the nature of teacher preparation programmes and their effectiveness or deficiency in influencing performance equality. This phase was vital in answering RQ3 and providing suggestions for addressing RQ4.

The measures used for gauging a qualitative investigation were different to that of a numerical study (Smith et al., 2014). Contrary to quantitative research, the aim of the researcher here was to seek believability based on insight, instrumental utility, trustworthiness, and coherence of the qualitative design using a verification process as opposed to the traditional reliability and validity measures (Fàbregues et al., 2021). Therefore, to authenticate the assumptions or established the credibility of the data gathered and whether it mirrors reality (Creswell et al., 2003), the researcher utilized three major forms for this second phase of the study. The first process was triangulation which involved combining different information sources, that is interviews, artefacts and documents. Second, member checking involved interviewing and gathering information from the four respondents regarding the accuracy of the recognizable themes and categories. The final step involved providing a rich description to convey the findings.

3.5: Operational Definition of Variables

Before the data collection and evaluation process, the research variables needed to be identified. In research, variables referred to a research phenomenon that differed in quantity, quality, form, and standard (Kaur, 2013). Variables have different values that could fluctuate depending on the form of the investigation, that is, qualitative or quantitative. The operational

definition of variables or operationalizing definitions were constructs that explained how the researcher defined and measured a given variable as it was applied in the study (Fisher & Marshall, 2009). Therefore, it was paramount for researchers to identify the research variables, especially for quantitative or mixed studies. This section showed how variables for this research were identified and the operationalization definition of these variables.

3.5.1: Identifying Variables

The overarching goal of the present dissertation was to investigate the relationship between how teachers within the Anglophone Caribbean are trained and how this impacted the academic performances of male students. Therefore, to satisfy this overreaching aim, the study was coined around two main objectives including to assess teacher training programmes within the Anglophone Caribbean to explore whether inadequacies in the overall structure of teacher training programmes were negatively affecting boys' academic performances; and to examined how teacher training programmes in the Anglophone Caribbean could be augmented to raise gender awareness and impact classroom practices thus improving male academic performances.

The aforementioned primary objectives and the research hypotheses outlined in Chapter 1 of the study predetermined several variables that could be applied to the present research. First, selected internal and external factors to the teacher training programmes that impeded on or played a part in the educational accomplishment of male learners in the Anglophone Caribbean nations were treated by the researcher as the independent or predictor variables. According to Kaur (2013), an independent variable was a stimulus variable that affected other variables and was the presumed causal factor in experiments. Since the nature of the study lent itself in the correlational direction as it was not an experimental one that examined cause and effect but the relationship between two factors the term predictor variable would be used instead of the

independent variable (Vonk, 2017). The study hypothesized that the quality of teacher preparation programmes offered within the Anglophone Caribbean countries had a direct relationship to the educational performance of male learners within the region and that once augmented they could positively impact the academic success of boys. Therefore, internal and external factors related to teacher training were categorized as independent variables since they act as stimuli variables that impacted another research variable (male academic underachievement), which would be discussed in the subsequent paragraphs.

The researcher identified the factors that made up the independent variables through an in-depth analysis of related literature (Carrington & McPhee, 2008; Clark et al., 2008a; Clark et al., 2008b) and theories related to male underperformance not only in the Anglophone Caribbean but in other regions of the world. These factors paralleled those of the study's research questions and hypothesis and were as followed:

- Training program-related factors: training quality and standards, teaching strategies, curriculum, strategies for professional development, testing, training support services, policymakers, and curriculum developers.

- Training institutions related factors: organizational culture, faculty, facilities for trainers and trainees, infrastructure and resources, governance,

- Learning institution-related factors: teaching support services, infrastructure, resources, number of learners, governance, and performance goals.

- Teacher-related factors: attitude and perception, pedagogical principles, relationship with staff and learners, workload.

- Factors related to the students' themselves: individualized goals, self-confidence and assuredness, passion and motivation, productivity, and self-discipline.

Drawing from these dynamics, the investigator was able to pinpoint 15 predictor variables: "training quality and standard", "training strategies", "curriculum", "professional development", "organizational culture", "faculty", "infrastructure and resources", "teaching support services", "governance", "attitude and perception", "pedagogical principles", "personal goals", "self-efficacy", "passion and motivation", and "self-discipline".

Male academic underachievement was the other matriculated phenomenon and was considered the dependent or outcome variable. Kaur (2013) defined a dependent variable as a variable that provided the response or reaction if it was connected with the independent variable. This variable was a presumed effect and was observed and measured to establish the impact caused by the independent variable, thus was influenced by the independent variables (Fisher & Marshall, 2009). Male academic underachievement represented the result or outcome from the influence of the independent variable, that was teacher training. The study hypothesized that the male academic underachievement witnessed in the Anglophone Caribbean nations was influenced by the calibre of teacher preparation programmes offered in the region. Thus, the depiction of the single association between the explanatory and the observed variables was illustrated in Figure 3.1 below.

Figure 3:2

Single Correlation Among the Independent Variable and Dependent Variable

Independent Variable	**Dependent Variable**
Teacher Training Programs *Internal & External Factors* • Training program • Training institutions • Learning institutions • Teachers • Students	Male Academic Underachievement
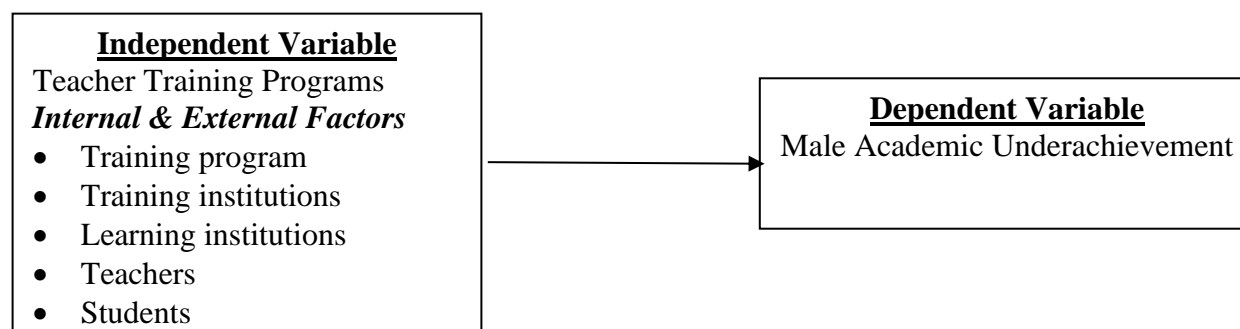
Finally, demographic characteristics including age, gender, nationality, academic achievements, amount of experience, and family and financial status functioned as moderator variables. According to Kaur (2013), moderator variables referred to variables that provide a causal link in the sequence between the independent and dependent variables and are vital in explaining the occurrence of a given behaviour. In the current research, this variable represented demographic characteristics that might altered the course or potency of the association between the explanatory and observable variables; that was, teacher training programmes and male academic performance in Anglophone Caribbean nations respectively, and aided in the explanation of 'when', 'why', and 'for whom a relationship existed. These traits were categorized as moderator variables because they influenced the explanatory variable and impacted the outcome of the observable variable. The demographic traits affected the strength and/or the direction and determined whether there was a link between the teacher training programme and male academic underachievement, as well as accounting for any interaction influence of the independent variable (teacher training program) and the elements that specify the best operational conditions (Fisher & Marshall, 2009). Based on this explanation, the correlation among the independent variable, dependent variable, and moderator variable was presented in Figure 3.2 below.

Figure 3:3

Correlation Among Independent Variable, Dependent Variable, and Moderator Variable
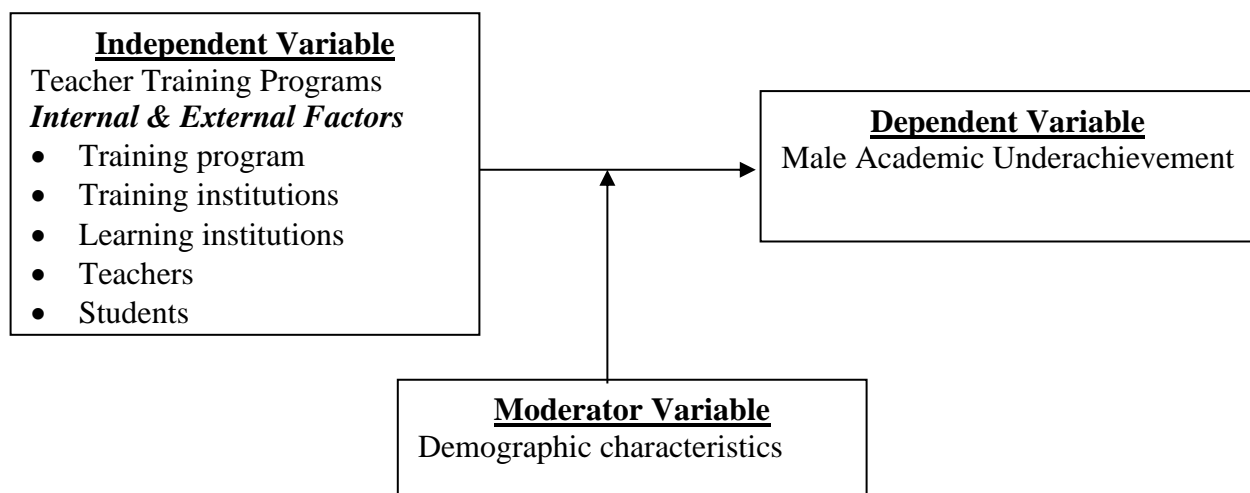
3.5.2: Operational Definition

To find the relationship between variables and easily measured them, variables must be defined operationally (Fisher & Marshall, 2009). The operationalization definition of variables aided the researcher in determining the correlation measurement between the different variables. According to Fisher and Marshall (2009), an operational definition was the definition of variables centred on some noticeable traits of what was being demarcated or altered concepts that form construct through words that defined an indication or behaviour that could both be observed and tested for truth by others. Thus, all operational definitions of the variables utilized within the current research were represented as followed:

3.5.2.1: Independent Variable: Teacher training program:

Teacher training programme referred to the method of edification and the expansion of skills that trainee teachers in the Anglophone Caribbean countries go through in the course of their ceremonial teacher preparation development and to improve their teaching practices. The programme involved a combination of practical training and course work provided for both in-service or future educators and was influenced by 4 main factors: training programme, training institution, learning institution, teachers, and students, which could be broken down into 15 predictor variables.

These predictor variables were assessed via a survey using a 5-point Likert continuous type scale in the survey using different survey items as shown in Table 3 below. The values of the variables would be measured using ordinal scales to represent the relative difference in the amount of some variables. In order to determine what statistical power, the test had, the variables

were scrutinised for validity by means of the Mann-Whitney test and the 2-sample t-test to produce nearly equal false-positive rates for the Likert scale data.

Table 3:3

Measurement of Predictor Variables

Teacher Training Program Factors	Predictor Variables	Survey Items
Training program	"Training quality and standard"	Parts 2 & 3
	"Training strategies"	Parts 2 & 3
	"Curriculum"	Parts 2 & 3
	"Professional development"	Parts 2 & 3
Training institution	"Organizational culture"	Parts 2 & 3
	"faculty"	Parts 2 & 3
	"Infrastructure and resources"	Parts 2 & 3
Learning institution	"Teaching support services"	Parts 2 & 3
	"Governance"	Parts 2 & 3
Teachers	"Attitude and perception"	Parts 3 & 4
	"Pedagogical principles"	Parts 2,3,4 & 5
Students	"Personal goals"	Parts 4 & 5
	"self-efficacy"	Parts 4 & 5
	"Passion and motivation"	Parts 4 & 5
	"self-discipline"	Parts 4 & 5

3.5.2.2: Dependent Variable: Male Academic Underachievement

Male academic underachievement referred to the lower levels of educational involvement and educational attainment by male learners in comparison to their female counterparts on the same education level. It was also coupled with the participation, enrolment, and completion of key education milestones in the Anglophone Caribbean.

This variable would be measured using archival data of students' performance on the regional Caribbean Examination Council's (CXC) annual exit examinations within the Anglophone Caribbean based on students' gender. The archival data would be derived from an

in-depth analysis of the annual reports of the examining body's annual reports for the past 5 years. Ordinal values would be used to measure the findings since student performance was a variable that could be ranked.

3.6: Study Procedures and Ethical Assurances

The researcher addressed ethical issues throughout all the phases of the study. First, in line with the requirement set by the Institution Review Board (IRB), the researcher sought permission to carry out this research through the Institution Review Board (IRB). A research ethics application form (REAF) for this doctoral research was filed and submitted to UNICAF University for review. The REAF submission included extensive details relating to the investigation inclusive of the primary researcher, project title, study timeline, funding information, the research project, execution of the project, participants, potential risks of the proposed research study, and approvals. In addition, information concerning the importance of the research, the research procedure, as well as the procedures to be used with the participants, were also included. Interviews with the participants were conducted via zoom and were recorded. The topic of the research study was not a sensitive one and the research subjects consisted only of adults who were able and capable of giving consent as participants.

The researcher also incorporated informed consent forms which were approved by the university that outlined the rights of the participants and stated the obligations of the primary researcher, as well as the agreement of the respondents to part-take in the research. The research applied a mixed inquiry strategy comprising two separate phases, a quantitative stage and a qualitative phase. Noteworthy, due to the travelling restrictions and related guidelines set by the World Health Organization (WHO) to curbed the spread of the COVID-19 epidemic, data from both phases were collected through a web-based survey for the quantitative phase and the

qualitative phase interviews were done via video conferencing platforms. Therefore, the informed consent page was affixed to the web survey while a softcopy was sent to the interviewees to reflect participants' compliance in the study.

The information amassed during the quantitative part of the investigation was confidential and anonymous. Likewise, the qualitative part of the study was also confidential and anonymous except to the researcher. This was because the researcher had to acquire personal details from the respondents such as email addresses to send the survey links, and telephone numbers where possible to send survey links via the WhatsApp platform and to follow up with the respondents. To protect the respondents' identity, the researcher used numerical coding and kept this information confidential. Also, the survey was conducted via google forms as such the researcher had no way of identifying which participant submitted which answers. Neither were participants' names, emails, or phone numbers included in the description and reporting of the findings. All feedback collected by the researcher was saved in password-protected files and was meant to be deleted one year after the study was published. Also, the data gathered would only be used for this study. Furthermore, as part of the informed consent process, respondents were further informed that a summary of the data might be availed to the public in the event of the publication of the research, but would not in any way be traced back to any particular respondent.

3.6.1: The Researcher's Role

The current mixed research study was divided into quantitative and qualitative phases. Therefore, the researcher played different functions in each stage of the study. For the initial, quantitative part of the investigation, the researcher administered the questionnaire to participants through email. The researcher used standardized procedures to collect the data

including snowball sampling and conducted reliability and validity checks for the data collection instrument. A rigorous statistical analysis was carried out by the researcher and the findings interpreted as per the set standards for the statistical significance of the functions (Creswell & Creswell, 2017). However, in the qualitative part of the study, the researcher played a more participatory role. Qualitative data was collected through interviews that were conducted via Zoom by the researcher (Creswell & Creswell, 2017).

A brief background about the researcher revealed that the researcher was a doctoral student at UNICAF University, UNICAF University Zambia campus undertaking a Doctoral of Education degree and has previous coaching in teacher education and a master's degree in Educational Measurement. Throughout the study, the researcher was and continued to be a practising teacher. Also, the researcher had been an examiner for the Caribbean Examination Council for more than a decade which enabled the researcher to interact with and keep in touch with teachers across the Anglophone region. This connection enabled the researcher to contact past colleagues who played a key role as respondents as well as in referring their colleagues to participate in the study as well. Therefore, considering that the researcher personally identified with a few participants in the study through professional circles, it introduced the possibility for bias (Locke, Spirduso, & Silverman, 2000). However, this level of interaction was not significant to colour the findings of the study.

3.6.2: Bias Limitation

While this study purposed to supply valuable knowledge into the relationship between teacher training programmes and male academic outcomes in the Anglophone Caribbean, it was crucial to acknowledge and address potential biases that may affect the explanation of the results. The main impediments of the inquiry included but were not limited to:

Sampling Bias: The use of snowball sampling, a non-probability sampling technique, might introduce sampling bias. According to Pace (2021), non-probability sampling methods, such as snowball sampling, were susceptible to biases, limiting the generalizability of findings. Considering the size of the study area, which was in four different Caribbean countries, and the travel bans imposed in most areas in the world as a measure to control the proliferation of the COVID-19 epidemic, the researcher chose a convenient sample to locate participants. Since participants were recruited through referrals from existing contacts, there was a possibility that the sampling might not be entirely indicative of the broader population of educators in the Anglophone Caribbean. While this approach was pragmatic given the constraints of the study, it's essential to recognize its limitations.

Self-Selection Bias: There was also the risk of self-selection bias. Johnson et al. (2014) highlighted that self-selection bias was a common concern in survey research, potentially influencing the external validity of study results. Participants who chose to take part in the study may have characteristics or experiences that differed from those who declined. This self-selection bias could impact the generalizability of the inquiry's conclusions to the broader population.

Response Bias: Participants might provide responses they perceive as socially desirable, affecting the accuracy of self-reported data. This potential bias could not be denied in this study especially considering that some of the participants were known to the researcher, thus they might have been tempted to give responses that aligned with the purpose of the study. Social desirability bias could lead to overemphasizing positive behaviours and downplaying negative aspects. Tourangeau and Yan (2007) emphasized the prevalence of response bias in self-report surveys, particularly when participants aimed to present themselves favourably.

Researcher Bias: As the researcher had a background in education and personal connections within the Caribbean teaching community, there was a potential for bias in interpreting and analysing data. Creswell and Creswell (2017) discussed the importance of researchers being reflexive and transparent about their backgrounds and potential biases to enhanced the credibility of qualitative research. Considering this, the researcher took steps to mitigate this bias, such as member checking, thorough case descriptions, and data triangulation.

Contextual Bias: The study focused on four specific Anglophone Caribbean countries, limiting the generalizability of findings to other regions. Each country had its unique educational context, and factors influencing teacher training and male academic outcomes may vary. Smith (2018) emphasized the need for contextual awareness, noting that educational practices and challenges could differ significantly even within the Caribbean region.

Addressing these biases required a comprehensive understanding of their potential impact on the study's validity and reliability. While efforts were made to minimize biases through rigorous research practices, readers should interpret the findings recognizing these inherent limitations.

3.7: Data Collection and Analysis

The primary function of this dissertation was to investigate whether teacher training programmes in the Anglophone Caribbean impacted male underperformance, which was paramount in the region. The researcher utilized the sequential explanatory mixed-method design to gather and analyse data through the combination of numerical and qualitative procedures. The collected information would then be evaluated by identifying the main constructs related to the research topic, problem, questions, and hypotheses. This subsection, therefore, offered a synopsis

of the information collected for both segments of the study and the data examination process utilized for both the numerical and qualitative phases.

3.7.1: Quantitative Phase

3.7.1.1: Data Collection

The quantitative phase was geared towards the collection of the primary information for the study. The main data collection tool utilized by the researcher to collect quantitative data was a cross-sectional web-based survey. This tool sought to collect primary data regarding teacher training practice and experience, and how it might influence learning in the classroom, particularly the educational outcome of male learners in the Anglophone Caribbean. Data collected in this phase was vital in identifying the major areas and factors of teacher training programmes and preparedness that impacted the academic performance of male students and creating a research framework for the second phase of the dissertation.

Prior to the collection of the actual data between July 15 and July 31, 2021, the researcher reached out to some of the intended respondents and was able to create an idea of the kind of questions to ask to frame the study appropriately and gather a sense of perspective of respondents' willingness and openness to share their insight. These conversations ultimately resulted in several alterations to the original data collection tool. The final survey consisted of six different sections that were strategically designed to answer RQ1 and RQ2, provide partial insight into RQ3 and RQ4, as well as test the hypothesis of the investigation.

The actual process of collecting the data began on August 1, 2021, when the researcher dispatched a link to the internet-based cross-examination to the emails of all the selected respondents. Entrants were given two to three weeks within which to complete the survey. Patton (2002) suggested that data collection triangulation should utilize different collection methods.

Therefore, to triangulate data from the cross-examination, the researcher utilized facts gathered from the interviews conducted in the second qualitative phase.

3.7.1.2: Data Analysis

Before conducting a comparative inquiry of the numerical facts result, the investigator screened the facts on the multivariate and univariate levels. According to Tabachnick and Fidel (2001), 'data screening' was vital in the identification of multicollinearity present in the collected data since multivariate tests tended to be highly sensitive to associations among predictor variables. The researchers further posited that the data screening process involved descriptive statistics for every variable of information regarding the linear measure and the homoscedasticity of variances, missing data, the normality of multivariate outliers, as well as the singularity and multicollinearity. All descriptive indicators derived from the questionnaire items were concise into textual form and later described through tables. A frequency examination was further administered to get a substantive percentage of the replies to the different questions included in the questionnaire.

The design of the investigative questions in the study predetermined the choice of statistical test and analysis that was utilized for the study. Since the main function of the quantitative analysis was to ascertained whether there was an association between teacher training programmes and male performances within the Anglophone Caribbean, the predictive discriminant function was used. According to Tabachnick and Fidel (2001), the main function of any discriminatory investigation was to find the main element that made two groups different, in the case of this study male and female performances, as well as to discover the 'classificatory functions' to predict the association between teacher's training and students' performance.

Data screening was often regarded as a vital phase in the analysis since the primary assumptions of discriminant analysis included homogeneity of variance, multivariate normality, and linearity. Therefore, if the collected data do not satisfy the underlying assumption, the statistical findings might represent an inaccurate reflection of reality. Given an instance where the data was not in line with the main assumption, the transformation procedure must be conducted.

The researcher presented the analytical findings through a discussion. All the statistical data processing of the quantitative findings was conducted via version 27 of the Statistical Package for Social Sciences (SPSS) software.

3.7.2: Qualitative Phase

3.7.2.1: Collection of Data

For the qualitative stage of the inquiry, the focus would primarily be on amplifying the outcome of the quantitative numeric data obtained from phase one of the study. For this section, information was amassed mainly by way of semi-structured interviews with the individual respondents. The gathering of facts for this narrative stage of the study was sequential from the first phase. As Creswell and Creswell (2017) posited sequential timing is commonly utilized in explanatory investigative techniques such as the current study and it often involved the collecting, analysing, and the interpretation of "one source of data before the collection, analysis, and interpretation of the other source of data" (Creswell & Creswell, 2017, p. 214). Similarly, in the current research, the investigation was led by the gathering and examination of facts from the quantitative part of the research which guided the construction of the interview tool used for the second stage.

The data gathering process was conducted between September 4 and October 6, 2021, through semi-structured interviews. The study utilized a semi-structured interview process as suggested by Seidman (2006). This interviewing process was particularly relevant to this study since the qualitative research questions required respondents to reconstruct past experiences and described present thoughts and actions (Seidman, 2006). Seidman (2006) particularly referred to this process as a three-interview series where the first series of questions was focused on history or demographics, the second part detailed the respondent's knowledge of the topic and the third concentrated on a reflection on the implications.

Throughout the period of data collection, interviews were administered by the researcher using the zoom online platform with participants who were purposively selected. The respondents were curriculum directors at top teacher training institutions within the selected Anglophone Caribbean countries. Besides, the information gathered by way of the interview documents throughout the second phase served along with the survey results to analyse and triangulate the final data.

3.7.2.2: Data Analysis

There were many ways to approach the narrative data analysis depending on the type of qualitative research being conducted. Creswell and Creswell (2017) however clarified that the major canons that applied across all the forms of qualitative data analysis included the preparation and organization of data to be analysed. According to Adu (2019), qualitative analysis involved a systematic approach to coding and forming themes to extract meaningful insights relevant to the study. The author further explained that qualitative analysis was fundamentally about data reduction, where the researcher sifted through the data to identify and extract information that was pertinent to addressing the research questions (Adu, 2019). This

included the categorization of the data into core themes through chunking, coding and summarizing the themes and finishing off with data representation through tables, figures and or explanations.

The qualitative analysis for this study was conducted using NVivo software. NVivo was designed to file sections of the qualitative raw data that the researcher intended to code into coding schemes. The analysis started with the transcription of each interview, ensuring an accurate representation of the spoken words. Following the transcription from the interview, the researcher thoroughly read through each transcribed interview to become familiar with the data. This initial step served to help the researcher gain an overall understanding of the content and context of the interviews before delving into the coding process. Coding entailed making notations from bits of data where themes that were pertinent to answering the investigative questions occurred (Merriam, 2009).

Codes were generated in three different ways including deductive (bottom-up), inductive (top-down), or iterative process, which was a combination of the two methods. A researcher who employed deductive coding produced codes following pre-specified criteria. This type of coding was predicated on the researcher's informed interpretations. On the other hand, a researcher who employed inductive coding developed codes primarily through the content of the data as opposed to any pre-specified framework or theories as in the case of deductive coding (Braun & Clarke, 2013). In this case, data was open-coded to best represent the actual meaning of what the participants were trying to communicate (Braun & Clarke, 2013). Braun and Clarke (2021) posited that deductive coding was likely to provide a limited description of the entire data, as it focused on analysing data as per the interpretation of a given theoretical lens.

According to Bryne (2022), qualitative analysis and coding did not usually exclusively fall into deductive or inductive approaches. Most analysis employed a combination of inductive and deductive coding. It was arguably impossible to use a purely deductive analysis because the researcher needed to understand how different pieces of information in the data related to each other to find common patterns that matched a specific theory or framework. Similarly, the analysis could not be purely inductive because the researcher needed some criteria to decide if a piece of information was relevant to answering the research questions and should be coded (Braun & Clarke, 2021).

Therefore, the qualitative examination for this dissertation followed an iterative process, where both inductive and deductive approaches were applied. A predominantly inductive approach to coding was conducted. This would involve open-coding, where patterns, themes, or categories were identified from the facts themselves, without attempting to fit it into preconceived categories, to emphasized the meaning of the raw data (Bryne, 2022). Some level of deductive analysis was also used to ensure that the open-coding process used for the inductive analysis developed meaningful themes for the inquiry's research queries.

During the coding process, the investigator carefully reviewed the raw data, identifying and extracting all relevant information that could help answer the research questions. This involved breaking down the data into meaningful segments, assigning descriptive labels (codes) to these segments, and organizing them into categories based on similarities and patterns. After coding the data as per the research questions, the researcher proceeded to categorize and sort the codes to develop overarching themes. The themes that emerged from the coded data were vital in providing a structured order for comprehending the findings and addressing the investigation queries.

Lastly, the researcher presented the facts in tabular form. Creswell and Creswell (2017) pointed out that while quantitative data is only presented after conducting the analysis, the presentation of data in qualitative investigation also served as the final procedure of analysis. Collecting, analysing and report writing in the qualitative study were all interrelated and were conducted simultaneously (Creswell & Creswell, 2017). The final portion of this analysis would, therefore, served as the outline for developing and presenting the narratives from the participants.

3.8: Chapter Summary

The general focus of this chapter was to outline the methodological design used to provide answers to the investigative inquiries for this dissertation. This chapter delineated in detail how the researcher utilized the explanatory sequential multi-methods approach via qualitative and quantitative measures to select participants and collect and analyse information to further the study. Included in the subsection was an outline of the explanatory sequential mixed approach and rationale for the selection of this investigative design, as well as the limitations and benefits of this investigative design; and elucidation of the population from which quantitative and qualitative information was collected and the sampling strategies employed. There was also an elucidation of and an outline of how the research tools used to facilitate and obtain the numerical and qualitative facts were developed, that is., a survey instrument and an interview protocol respectively. The identification of and operational definitions of variables; a description of the ethical procedures and assurance as well as bias limitations; and finally, a description of the data gathering and evaluation techniques employed for both the qualitative and numerical stages of the investigation covered the overall essence of the section.

4. CHAPTER 4: FINDINGS

4.1: Introduction

The overarching goal of this dissertation was to ascertain if there is an association between teacher preparation programmes and male academic underachievement in the Anglophone Caribbean cases. While the primary intent of this subsection is to discuss and outline the empirical discoveries derived at via the information gathered for this two-phase explanatory sequential mixed-method study. The results from the final set of data collected quantitatively and qualitatively in Chapter 3 are presented, analysed, and interpreted. The common themes or patterns that were identified from the findings and the results are presented in tables. Actual data elements from the analysis will be used to report the findings. This section of the thesis also seeks to tie the results of the research to the findings of other researchers whose works have been highlighted in the review of literature section as presented within Chapter 2. Both the expected, unexpected and conflicting results obtained from the study will be potentially explained.

The chapter sets off with the trustworthiness of the data section, where the investigator explains in what manner the data and findings from this chapter, including everything that the investigator has done in planning, conducting, and documenting the results, are tested to ensure overall quality research through credibility, transferability, dependability, and confirmability. In particular, this section details just how the trustworthiness of the data was secured through triangulation, audit, deep descriptions of the methodology used, the research setting and the particular context within which the investigation took place, the sample size, and demographics. In addition, the section explained how the parameters of the constructs meet the conventions of

the statistical tests and ascertain whether there are prospective deficiencies in the elucidation or cogency of the data acquisition and analytics.

This is succeeded by the validity and reliability assessment. Here the accuracy and the stability of the investigative tools and instruments are measured to make certain that the data and results collected are sound and replicable and that the results are accurate. In particular, in the validity section, the researcher will analyse both the internal validity to measure the appropriateness of the instrument and the test itself, and the external validity of the research study to measure its appropriateness, meaningfulness, usefulness and capability of generalizing the findings across the wider sample group. In contrast, the reliability section will address the overall consistency of the measuring instruments and tools used in the research investigation. In particular, the investigator will consider the dependability of the survey tool and the questionnaire. The researcher will critically identify and analyse the measuring instruments to ensure reliability and validity.

The researcher then conducts a thorough analysis of both the statistical and analytical data and presents the findings in the next subsection. The analysis of results is conducted and presented in a systematic order as per the study's research questions, as well as the research hypothesis. The investigator analyses the results according to the outlined research queries on both quantitative and qualitative levels and simply reports the results without discussing, interpreting, or making speculations about them. Before presenting the findings, a re-examination of the facts collection and analysis processes was thoroughly carried out for both the numerical and qualitative stages. For the quantitative, the demographic examination will first be presented. This will be followed by an assumption exploration of multivariate variance of analysis (MANOVA) that details the conventions of bivariate normalcy, the independence of the

units, homoskedasticity benchmarks, the linear measure, as well as the singularity collinearity

tests that were conducted. For the qualitative phase, a demographic enquiry was conducted

followed by the identification of the central themes for the qualitative data. The descriptive

statistics of the numerical data were conducted and the results we analyse before the different

variables were screened at the univariate and multivariate levels. The qualitative data analysis

was conducted and presented through common themes or patterns that highlight the data

gathered from the qualitative phase. The qualitative and quantative results were then reported

without providing any type of interpretation, discussion or speculation. The results were then

presented through text, tables, and figures as necessary per the research questions.

Once the data is analysed and presented, it is followed by an evaluation of the findings.

Here, the researcher will briefly report the findings derived from the previous section. Similarly,

this section will be organized as per the central inquiry themes and propositions of the

investigation. The findings were also interpreted by taking into consideration the theoretical

frameworks upon which the study was built, as discussed in the literature section. The researcher

then gives an account of whether the results obtained from the study were expected and

established on the re-examination of the scholarly writing presented in Chapter 2 and offers

potential explanations for any contrary or conflicting findings. All conclusions drawn at this

point will be limited to the findings derived from the study.

The final section of this chapter was the chapter summary. This ultimate section provides

a discussion summarizing all the main points and the most important outcomes presented in

Chapter 4. The main goal of this section is to give an interactive summary of findings to enable

readers to have a nutshell view of the research outcomes using less information about each

outcome derived from the investigation and how the study has contributed to the research objective.

4.2: Trustworthiness of Data

An explanatory sequential mixed design research includes not only a quantitative approach but also a qualitative endeavour. As such, the qualitative part of the enquiry incorporates a number of approaches for validation to make the data trustworthy. Reading a qualitative report often turns out to be a very capricious experience because the rhetorical structures that guide qualitative writing and the methodologies that organize qualitative findings are very many. While some qualitative researchers make lists, others make maps. Some even utilize an anecdotal approach to showcase a "good story", while others offer a "thick description," which according to Geertz (1973) treats readers with rich text in case the purpose of the description is profound.

As a result of such varieties in the technique, and with multidimensional genres that do not stick to any distinct structural arrangement, readers must often support their unique assertions concerning the perception of the writers' philosophy. These pontifications are continuous and deliberating dialogues that are always operative in any written communication. However, there is a standard format for writing quantitative reports upon which readers can rely when exploring these enquiries. In this sense, readers typically know what to assume in this type of account, at least in terms of organization. Thus, the huge query has to do with where the reader, scholars, educationalists and the various consumers of narrative enquiries lean. This is where the trustworthiness of the research, albeit a subjective issue takes precedence, where readers and writers might discover camaraderie in the constructive procedures (Stahl & King, 2020).

Contrary to quantitative research, qualitative studies do not seek replicability. Instead, the events and participants of qualitative research are expected to develop very unique circumstances (Stahl & King, 2020). Given different circumstances, such as if the researcher or place changes, and a different period, qualitative findings will always differ. Even if the data is jointly collected and shared, different researchers can produce distinctive conclusions (Stahl & King, 2020). Stemming from the fact that in qualitative enquiries researchers often construct the realities. Consequently, the quantifiable conceptualization of authenticity is clearly not an objective of the narrative enquiry. Instead, qualitative writers aim to achieve less explicit trustworthiness goals, meaning that when readers understand the study, they often develop a sense of assurance in the content that the investigator has presented (Stahl & King, 2020). Nevertheless, even with such confidence, the audience would not expect to get the same results when they conduct a similar study (Stahl & King, 2020).

Trustworthiness of data refers to the credibility of the findings of particular research, including the designing, the actual collecting and commentary of the data to ensure the study results are believable. There are new terminologies and modern terms that have come up regarding and constituting quality research with one of them being trustworthiness (Smit, 2001). Amankwaa (2016) points out that in each study, researchers are required to describe and discuss the techniques and conventions that would enable readers to deem the research worthy. Scholars in the social science discipline have tried describing what it means for a qualitative study to be good, valid and trustworthy, "to chart the history of and to categorize the efforts to accomplish such a definition and describe and codify techniques" (Sandelowski & Barroso, 2002, p.152) and for recognizing and ensuring good studies. Despite the many efforts by these scholars, the debate continues and a consensus on such quality criteria is yet to be established. Leung (2015) notes

that while experts in social science agree that data trustworthiness is important, there is still no consensus as to what this means.

Certain research methods and designs that researcher engaged in generate credibility within the enquiry and the conclusions are drawn. For instance, Creswell et al. (2007) enumerate eight main procedures for data trustworthiness including protracted commitment and tenacious scrutiny in the field; triangulation and numerous data collection sources; debriefing, peer review and external checks; deleterious case enquiry; declaration of researcher bias; participant scrutiny; profuse description; and external audits. However, Lincoln and Guba (1986) seem to have developed a set of criteria that has been widely acknowledged and will be the focus of this dissertation. The author employed the terms credibility, transferability, dependability and confirmability to group the different measures under a larger aim and to provide alternate terms for positivist perceptions (Lincoln & Guba, 1986). Lincoln and Guba (1986), therefore, posit that the credibility of the investigation and its discoveries are the key factors in positivist models of reliability and validity. As such, trustworthiness in the qualitative phase of this dissertation will concentrate on establishing the following four key components: credibility, transferability, dependability, and confirmability (Lincoln & Cuba, 1986).

4.2.1: Credibility

The basis of any claim to trustworthy knowledge is built on believability. Credibility satisfies the dispute concerning how compatible the conclusions of a study are with real-life actualities. This is a very subjective question and relies on individual judgements. Therefore, in research, credibility has to do with the assurance of the results of the research, with regard to the degree to which outcomes are accurate and grounded in data. Instead of assuming that there is a value of truth in a given research, credibility established that the representation created through a

study is certainly believable and valid. On the one hand, Polit and Beck (2014) postulated that credibility is the chief criterion for initiating the trustworthiness of data. Seale (2000), on the other hand, sees credibility as a phenomenon that replaces truth value through triangulation exercises, insistent observation, and persistent engagement, in addition to the disclosure of the investigation's discoveries to criticisms by a neutral peer assessor who can search and point out a negative instance that challenges the emerging hypothesis and request for their review to build up credibility (Seale, 2000).

Credibility in the qualitative investigation is often the same as internal validity in a quantitative study. Similarly, queries concerning the compatibility of the conclusions of a qualitative investigation are equivalent to reservations concerning internal cogency in the quantitative investigation. In qualitative studies, credibility addresses two major questions: First, whether the researcher observes what he or she thinks he or she observes, and second, whether the researcher hears the meaning that they think they hear. In this regard, the reader might be concerned with whether or not the researcher follows normal procedures in design, or whether or not an acceptable explanation was provided for discrepancies. However, unlike in a quantitative design, it is not expected that credibility would lead to similar results because it is mainly a creation based on part on the researcher's construction of realities as based on the participants' description of events. As posited by Polit and Beck (2014), once researchers select and apply correct and appropriate research procedures then credibility is often guaranteed. In simpler terms, in an empirical study, credibility is attained by implementing, selecting and applying measures that yield the desired results of the research.

Data collection triangulation. A major procedure for promoting the credibility of qualitative research is through a different process of triangulation. Generally triangulating refers

to the utilization of different information sources or experimental procedures to develop identifiable patterns. The different forms of triangulation stem from methodological triangulation and they include triangulation of data; triangulation by the investigator; theoretical triangulation; and environmental triangulation (Stahl & King, 2020). All the different types of triangulations utilize multiplicity to test the credibility of a given study.

Member checks. A second method of pursuing credibility is by involving informants in verifying the researchers' interpretation of facts and theories. This process is popularly known as member checking. Member checking can take different forms. In all of its forms, "member" is used to describe different participants who play different roles within a given study. Often, the members are provided with unpublished copies of the study to give feedback on the accuracy of the data used. Sometimes, it can be done through in-person meetings.

In this study, the trustworthiness of the qualitative stage was improved through the triangulation approach. As mentioned earlier, triangulation refers to a model that requires researchers to surpass personal prejudices that arise from the use of a lone research method. In particular, the study employed a methodological triangulation, which speaks to the utilization of multifarious research techniques. The mixed-method approach was applied with data collected both qualitatively and quantitatively. In the first phase, facts were gathered quantitatively through an internet survey, while the second phase utilized qualitative data collection through semi-structured interviews. For this investigation, the qualitative phase was concerned with amplifying the numeric facts obtained from the initial quantitative stage of the study. Besides, different types of population samples were used. Therefore, believability through extended assignation, triangulation and variety of information, and deleterious case enquiry establishes credibility in the depiction and conclusions drawn by this dissertation.

4.2.2: Transferability

A second step that is critical for ensuring trustworthiness in a qualitative study offered by Lincoln and Guba (1986) is transferability. According to the authors, qualitative research seeks transferability by giving a detailed report of the phenomenon and setting in formal accounts of a study (Lincoln & Guba, 1986). Transferability is, therefore, a comprehensive description of the processes and procedures utilized within a study to garner answers to the research question (Leung, 2015). Besides, it can be described as a condensed explanation of the research methods including triangulation, coding and re-coding. Triangulation can only be achieved through a thick description and rhetorical strategies that exhaustively describe the events of the study to give the reader the feeling that they experienced the events of the study. Ideally, the researcher needs to convince the readers that had they been there when the study was being conducted, they would have seen the study in the same way as the researcher, felt the same way, and made the same conclusions (Stahl & King, 2020). Transference accounts such as the huge descriptive data generated by qualitative research often depend on the careful replication of information. Such explanations would consist of corresponding evidence about the fieldwork setting. This involves the organizing and thorough description of the original participation and collected data. Likewise, any excluded participation would have prejudiced the collected data and coloured the generalizability of the results (Stahl & King, 2020).

Researchers in qualitative research are encouraged to articulate their findings in a way that the logical process that they have used is clear to the reader, and that "the claims made concerning the data set are rendered credible and believable" (Neuman, 2003, p.135). This implies that if the procedures and processes of the study are sequentially presented, trustworthiness will be ensured. Using transferability to pursue trustworthiness is somehow

difficult considering that by design, qualitative studies do not or cannot be replicated. Even so, researchers who lean towards the qualitative paradigm hold that the descriptive patterns from varying contexts may be relevant to one another (Stahl & King, 2020). Thus, the explanatory and expansive goals of quantitative studies can be achieved through transferability expansive with qualitative inquiries. Naturally, this cannot be assigned by the investigator but needs to be assigned by those who desire to liken the enquiry within their contexts.

Transferability for this study was achieved through the use of adequate and rich descriptive data including thick descriptions of the methodologies, the conditions under which the investigation was carried out, the setting, sample size, and demographics. Each of these sections was richly described in independent sections to ensure that readers have a vivid idea of what each section entailed. The study employed a sequential explanatory strategy which combines the two major research methods into one study. To ensure the richness of this section, the researcher exhaustively explained each method independently and analysed the data from each phase separately. Besides, the time span for the data collection within the primary research was thoroughly chronicled in addition to the complete prolongation of the investigation. The sample size of the study was also a perfect representation of the four main countries in the Caribbean. By doing this, the researcher targeted to produce results that are a true presentation of the Anglophone Caribbean. Besides, the research techniques were presented in detail to show how the study unfolds and indicate that the results and conclusions used are trustworthy following qualitative research techniques. Besides, openness was a principle employed throughout the study to develop trust with the informants and as a prerequisite for research ethics.

4.2.3: Dependability

The third viewpoint on the credibility of research as posited by Lincoln and Guba (1986), which helps to substantiate the reliableness of research evidence is dependability. In a narrative investigation, the researcher, who is both the producer and consumer of data, actively develops their faith in the procedures of the study as and when they are disclosed. Neuman (2003) explains that for qualitative research dependability is the same as reliability or consistency in quantitative data. Likewise, Smit (2001) posits that dependability is regarded as the balance between what the researcher records as evidence and what has occurred in the environment within which the study occurs. Moreover, the reliability of the study is often the same as dependability, meaning the extent to which the study's outcomes can be replicated by a different researcher. Therefore, several research practices produce trust including peer review or peer interrogation. Using a fellow investigator to peer review and comment on research notes, with the researcher's embedded elucidations is a validation process that helps create implicit veracity for the researcher. A professional peer review evokes a notion of self-credibility. Besides, since the reaction is being made by fellow researchers, it gives the investigator an interior exploration and comments before publishing it to the public, which in itself involves a gesture of confidence.

Dependability is also about the expectancy of the peer reviewer's interpretation and overall perception of research. When the researcher is aware that the field notes of the study will be inspected or scrutinized by a peer, it will make the researcher more careful when conducting the research. The anticipation would lead the researcher to record facts and accurate data. The practice of data dissociation into annotations and clarifications is known as grouping (Stahl & King, 2020). An important part of the bracketing process is researcher bias, which is inevitable in any interpretive repertoire. Stahl and King (2020) point out that for qualitative research to be

effective then researchers must develop certain values and passion and deeply engage with research data. The researchers further argued, however, that it is also essential for investigators to limit the effect of their beliefs and opinions so as not to influence the data. When researchers are able to become absorbed in the investigative progress while mitigating their biases it is indicative of another level of confidence.

The narratory segment of this investigation was an interactive process and considering that the research setting, in this case, teacher training programs, is evolving the replication of these results may not be replicated if the study is conducted by a different researcher. This point was also confirmed by Neuman (2003) who argues that the use of alternative measures by a qualitative researcher will yield different results. Furthermore, Saunders, et al. (2000) further endorse this by noting that the findings from using non-standardized methods like interviews should not be repeated as they only reflect the reality at that point in time when the data is being collected. Therefore, it was never the intention of the researcher to produce results for the qualitative section of this inquiry that can be replicated at some other time in the future.

Therefore, to ensure dependability, the researcher used peer scrutiny to identify the shared or common constructs of the research. The researcher shared the research notes with a fellow researcher who previewed and reacted to the inquiry notes. The major parts of the investigation that were reviewed for dependability were the literature review section including the thematic framework; data analysis; and the evaluation of results. The feedback derived from the peer review and scrutiny was then assessed and used to improve the study.

4.2.4: Confirmability

The final perspective of the trustworthiness of data is that of confirmability. This is an attempt to arrive near to impartial authenticity that qualitative research can get. Confirmability

thus has to do with the concept of impartiality. The researcher is required to secure the inter-

subjectivity of the data. The interpretation of the data should not be based on their viewpoint or

preference but should be based on the actual data. The principal emphasis is placed on the

interpretation process embedded in the analysis process. The main strategy often employed in a

qualitative study to safeguard confirmability is through the audit trail. This is where the

investigator's accountability comes in by providing a comprehensive narrative of the research

procedure, data collection tools, choices made in the study process, findings and information

management to enable the auditor to study the transparency of the path used in a study. To be

able to open up one's investigation to introspection and review, there must be a certain form of

impartial authenticity present. Thus, as posited by Stahl and King (2020) this means that the

qualitative researcher rather than striving for objectivity, in turn, constructs a social reality of the

findings. As such, this social reality should be based on the meticulousness and accuracy of the

research procedure and the complicity of other investigators.

For this investigation, the investigator chronicled in its entirety the procedures used for

scrutinizing and rechecking the data throughout the study. An external audit was then conducted

by a fellow researcher independent of the research process. The independent investigator

scrutinized the entire process to gauge its accuracy and evaluate whether or not the results and

the elucidations of the results, and the conclusion are reinforced by the facts.

4.3: Reliability and Validity of Data

The Reliability(consistency) and validity (Cogency) of the data collection tools are

pertinent issues that must be addressed in social research which will be discussed and reported

here. These issues are concerns for every type of research, both qualitative, quantitative, or

mixed, and are of great significance since the collection and analysis of data are often done by

the investigator (Merriam, 2009). Therefore, the credibility of a quantitative study pivots to measuring the instrument of the investigation. Particularly, the all-embracing power of an investigation is based on the fact that the research tool incorporates methodological, ideological, and epistemological beliefs (Creswell & Creswell, 2017). To this end, the investigator's mandate is to prove the trustworthiness of the instrument or investigative tools used in the study. For the current study, this was achieved through the assessment of validity and reliability as will be discussed in the following sections.

In research, validity describes how accurate the instrument used is and what it intends to measure (Frey, 2006). Validity ensures that individual scores collected by a research measurement instrument make sense and are presented in a meaningful way and aid the investigator in drawing conclusions about the population sample under review (Creswell & Creswell, 2017). According to Whiston (2012), validity pertains to the collection of appropriate data that is appropriate for the envisioned purpose of the quantifying tools. Therefore, tests of validity help to presume whether the terms in the measuring instruments make for appropriate measurements as per research determination.

While testing the validity of the evaluating tool is challenging, it is more vital than measuring its reliability. For a study to yield helpful outcomes, the evaluating tool must assess what it claims. A validated measuring tool ascertains whether the results attained via the research analysis are binding and can be generalized across the population. A study may be ruled invalid when it is poorly designed, when the information has little application, or when participants misunderstand the questions or are fatigued during the study (Creswell & Creswell, 2017). Confirming that the data collected was applicable, moral and measured precisely in the proposed content area was paramount in this study.

Literature has suggested different ways of determining the validity of a measuring instrument, which are used for different purposes (Oluwatayo, 2012). Validity may be determined by examining the information concerned with the objectives of the measuring instrument, content areas, and the level of difficulty of the questions by asking experts in the field to peruse all the items of the instrument (Creswell & Creswell, 2017). Therefore, different approaches were used to determine the validity of this inquiry as shown in table 4.1 below.

Table 4:1

Strategies for Establishing Validity

Strategies	Measuring Criteria
Content Validity	Taking expert opinions through evaluation by more than one referee.
Face Validity	Obtaining expert opinion on the purpose, clarity, and attractiveness of the measuring tool.
Construct Validity	Pilot study

Note. Reprinted from Research design: Qualitative, quantitative and mixed methods approach (4th ed., p.98) by J.W. Creswell and J. D. Creswell, 201, Sage. Copyright 2017 by John W. Creswell and John D. Creswell.

First, the content justifiability of the survey mechanism evaluated all the aspects of the assessment tool quality to ensure the accuracy of the survey instrument in measuring how teacher training programs impact the educational performance and attainment of male learners in the Anglophone Caribbean. Content validity assesses whether the instrument effectively covers wholly the content that it ought to, concerning the variables (Creswell & Creswell, 2017). In this study, content validity was determined by taking experts' opinions. Assessment by several qualified adjudicators is an important technique for procuring professional opinion for consistent and unbiased results (Ayre & Scally, 2014). The measuring instrument was submitted to three

experts: Dr. Chrysa Tamisoglou my supervisor and lecturer at UNICAF University in the field of educational research, Dr. Saran Stewart lecturer at the University of the West Indies, Mona in the field of academic research, and Dr. Margaret Chin, lecturer of teacher education and training as well as educational research at the Mico University College. Dr. Chin is also the Secretary-General at the Jamaica Teachers' Association where she is in charge of professional services and teacher development. The researcher contacted the experts through email with details explaining the intent of the study and requested detailed responses concerning the topic of study. The expert reviewed and evaluated each item of the research instrument for content validity. As a result, some items were revised through the commentary of the expert. The experts scored their reports as "appropriate", "appropriate but should be corrected" or "subtracted". From these scores, the researcher removed, added several new items, and modified some survey items accordingly.

Secondly, the process of validation was also accomplished using face validity. This refers to an idiosyncratic choice based on the investigator's opinions, intuition, and feelings in regard to the functioning of the measuring tool (Creswell & Creswell, 2017). While face validity is a considered weak form of structural validity (Kaplan & Saccuzzo, 2017), researchers claim that it can be alleged to demonstrate validity although the measuring tool does not measure what it's supposed to measure statistically. It is a personal judgement, therefore, must be backed with stronger validity approaches to be persuasive to other researchers. The assessment of face validity for this research was performed by the same experts that performed content validity as well as by members of the UNICAF Research and Ethics doctoral studies team. The criteria used to evaluate face validity included: the determination of each item as applicable to the measuring tool; the scale statements that are unmistakably comprehended by the respondents; and the

attractiveness of the questionnaire. For the present study face cogency of the research tool was confirmed to be acceptable by the specialists.

Finally, the research instrument was piloted on a subset of the intended population (25%). According to Simon (2011), a minuscule model or a practical test of a study known as the pilot study can be used in preparation for a major study. Therefore, the pilot study was meant to validate the logistic properties of the data collection tool, as well as the internal consistency, clarity, and ambiguity of the instrument to determine if it would produce the desired or intended results. A correlation of the feasibility study data was further performed to link the scores of the items in different sections of the survey.

Reliability is the constancy of the evaluating tool that is used, as well as its stability over time (Creswell & Creswell, 2017). Essentially, reliability measures the capability of a measuring instrument to provide parallel outcomes when administered at different periods. However, it is not likely that an instrument used in a given study would yield the same results all the time owing to differences at the time of measuring, and the variations in the sample populace. However, a solid and affirmative correlation among the findings of a given evaluation tool is a valid signal of its reliability. Ensuring a healthy study relies on the reliability of the measuring tool with valuable results which can be used to make recommendations. To this end, ensuring that the measuring tool is dependable is paramount within the current research.

There are different methods available for determining the scale's reliability in experiential research. However, the most regularly used techniques include test-retest, alternative forms, and internal consistency reliability tests (Patton, 2014). Noteworthy, the nature of the current study allowed for only the utilization of the internal consistency test. Reliability-based internal constancy concerns the consistency of the items contained in the research measuring instrument.

Besides, it hinges on the association of every item constituted in the evaluating tool. Different techniques have been used to determine reliability with the most preferred methods being alpha-coefficient (Cronbach's Alpha and Kuder-Richardson-20), item-total correlations, and split-half (Gay et al., 2006).

The present investigation examines the relationship between teacher training programmes and male performances within the Anglophone Caribbean by utilizing a mixed methodology technique. The utilization of mixed evidence offers a wealth of data, consequently increasing credibility and mitigating researcher bias (Creswell & Creswell, 2017). In the present investigation, internal consistency coefficiency of the survey tool used in the quantitative approach was determined using Cronbach's Coefficient Alpha to establish that the survey items correlate with each other and as a collective whole as well as to increase the overall reliability of the tool (Gay et al., 2006). Although there are different ways to interpret Cronbach's alpha, the study utilized the conventional method as illustrated by table 5 below.

Table 4:2

The Classification of Cronbach's Alpha Coefficient

Cronbach's Alpha Coefficient	Interpretation
≥ 0.9	The scale has a high internal consistency
$0.7 \leq \alpha < 0.9$	The scale has internal consistency
$0.6 \leq \alpha < 0.7$	The scale has an allowable internal consistency
$0.5 \leq \alpha < 0.6$	The scale has weak internal consistency
$\alpha \leq 0.5$	The scale has no internal consistency

Note. Reprinted from Educational research: Competencies for analysis and applications by Gay et al. (2006), Merrill Greenwood. Copyright, 2006 by Merrill Greenwood

The internal reliability coefficient of the survey was appraised along five categorizations in accordance with the survey instrument as follows: (1) Teacher Training Institution and

Program; (2) Teaching Practice Environment; (3) Learning Traits of Students; (4) Learning and Service Delivery; (5) Efficiency of Training Programmes. Table 6 presents the level of internal consistency for all five subscales, which represents a total of 32 survey items as follows: First, for the subscale "Teacher Training Institution and Program" (n=7), the coefficient alpha (Cronbach's alpha) determined reliability level of .70, which indicates that the scale has internal consistency. For the second subscale, "Teaching Practice Environment" (n=4), the coefficient alpha showed a reliability level of .74, also indicating that this subscale has internal reliability(constancy). The coefficient alpha of the third section "Learning Traits of Students" (n=9), produced a reliability of .68 which shows an acceptable measurement of internal consistency. Noteworthy, for this section one adversely expressed survey item (Item 3) was alternatively coded to avoid a negative alpha score. For the fourth section, "Learning and Service Delivery" (n=9), the rho-equivalent reliability revealed a consistency level of .60, which is deemed a satisfactory internal reliability. The rho-equivalent reliability for the final subscale "Efficiency of Training Programmes" (n=3), however, determined a reliability level of .7 meaning that the scale has internal consistency.

Furthermore, the researcher also composed the rho-equivalent reliability for the survey in its entirety (n=32) confirming that overall, the questions on the survey tool correlate to each other collectively. The rho-equivalent reliability indicated a strong reliable level of .72 for all items. This indicates that the survey items relate to each other, and thus are consistent and stable as shown in table 6 below.

Table 4:3

Reliability Test

Scales	Cronbach's Alpha	N of Items

Teacher Training Institution and Programme	.70	7
Teaching Practice Environment	.74	4
Learning Traits of Students	.68	9
Learning and Service Delivery	.60	9
The Efficiency of Training Programmes	.70	3
ALL VARIANTS	.72	32

4.4: Review of Data Collection and Analysis Procedures

4.4.1: Quantitative Phase

Data at this stage of the investigation was gathered quantitatively by way of a cross-sectional web-based survey that was developed independently by the researcher. To determine whether teacher training programmes in the Anglophone Caribbean impact the academic achievement of male students. A descriptive statistics analysis was conducted using SPSS 27 statistical software. Before reporting the results screening of the data was administered to determine both the univariate and multivariate strength as proposed by Tabachnick and Fidell (2000). The participants' demographic information and their answers to different question types on the different parts of the survey were then analysed using measures of central tendency, cross-tabulation and frequency counts.

4.4.1.1: Demographic Analysis

The following section shows the demographic profiles for Phase 1 of the study. Table 7 shows respondents' gender profiles for the quantitative phase. This study phase was conducted through a survey that resulted in 100 completed and valid responses (N=100), as anticipated by the researcher: there was no missing data. In line with the fact that most teachers in the

Caribbean are females, the majority of the participants for this stage of the investigation (64%) were thus females, while 33% were males and three participants (3%) preferred not to identify their gender as shown in Table 7 below.

Table 4:4

Gender

Characteristic	Frequency	Percentage (%)
Gender		
Male	33	33
Female	64	64
Prefer not to answer	3	3

Note. (N=100). Data collected by author July 2021.

In terms of age, the respondents' ages ranged between 20 and 62 years. The average age of the respondents was 36.82 and the median age was 36.00 as indicated by Table 8 below.

Table 4:5

Age Distribution Statistics

Statistics	N	Valid	100
		Missing	0
Mean			36.82
Median			36.00
Mode			23[a]
Minimum			20
Maximum			62

a. Multiple modes exist. The smallest value is shown

To create a generalizable balance of the sample's representativeness of the population, the participants were equally drawn from all the four nationalities that make up the scope of the study. As a result, Jamaica, Trinidad, Guyana, and Barbados each produced 25% total or 25 respondents each as is indicated by table 9 below.

Table 4:6

Country of Residence

Characteristic	Frequency	Percentage (%)
Country of residence		
Jamaica	25	25
Trinidad	25	25
Guyana	25	25
Barbados	25	25

Note. (N=100). Data collected by author July 2021.

In terms of educational level, the highest educational level attained by the majority of the participants was a first degree or a Bachelor's (60%), while 28% of the respondents indicated that they are the holder of a master's degree. Six informants representing 6% had attained High School education as they are still in training, two (2%) had reached technical training, and only one participant (1%) had attained a PhD. However, three participants (3%) preferred not to reveal this information as indicated by table 10 below.

Table 4:7

Education Level

Characteristic	Frequency	Percentage (%)
Level of education attained		
High School	6	6
Bachelor's Degree	60	60

Master's Degree	28	28
PhD or higher	1	1
Technical School	2	2
Prefer not to say	3	3

Note. (N=100). Data collected by author July 2021.

All 100 informants were either practising teachers, in-service teachers or retired teachers and therefore were well qualified to complete the survey by answering the questions regarding the different components of the teacher preparation programme and teaching experience in the Anglophone Caribbean. As is indicated by Table 11, more than half (51%) of the respondents were in-service practitioners most of whom had accumulated more than 10 years of classroom experience, followed by 20% who were preservice teachers. 16% were practising educators with not more than five years of classroom experience, 12% of the respondents indicated that they had teaching experience of five to ten years and only one participant (1%) had retired see Table 11 below.

Table 4:8

Teaching Background and Experience

Characteristic	Frequency	Percentage (%)
Teaching background and experience		
Preservice teacher	20	20
In-service teacher (1-5-year experience)	16	16
In-service teacher (5-10-year experience)	12	12
In-service teacher (Over 10-year experience)	51	51
Retired teacher	1	1

(N=100)

As shown in Table 12, most of the participants (79%) were employed full-time, 16% were seeking opportunities, and two participants (2%) were working part-time. However, three participants (3%) did not reveal their employment status.

Table 4:9

Employment Status

Characteristic	Frequency	Percentage (%)
Current employment status		
Employed Full-Time	79	79
Employed Part-Time	2	2
Seeking Opportunities	16	16
Prefer not to say	3	3

(N=100)

4.4.1.2: Assumptions of Multivariate Analysis of Variance (MANOVA)

Parametric tests such as Multivariate Analysis of Variance (MANOVA) are designed for data that fits several traits. Thus, it is paramount that one scrutinizes the dataset to examine whether or not it has met the assumptions suited for parametric tests before the tests are run to generate accurate results. Therefore, before running the MANOVA tests, the presumptions of multivariate or joint normality distribution, units of independence, the homoscedasticity matrices, linear measurements, and singularity and collinearity tests were run.

The first assumption for MANOVA is independence. A MANOVA assumes that each observation is randomly and independently sampled from the population. Because the statistics utilized within the investigation were gathered from varied groups of teachers (i.e., preservice, in-service and retired), with different degrees of educational attainment as well as different

ranges of overall classroom experiences from all four countries of study, it is correct to assume that the resulting data meets the assumption of independence. The groups of participants are independent of each other and categorical. Besides, the individuals took the online survey in individual sessions.

The other assumption for MANOVA is multivariate normality. For this assumption, the Mahalanobis Distance (MD) method was used, which is a very common measure for multivariate statistics. The model can be used to identify multivariate normality and determine whether a sample is an outlier or not. First, the MD of the factors in each of the five independent variables (training programme, training institutions, learning institutions, teachers and students) was determined and then used the cumulative distribution function for chi-square (Cdf. Chisq) against the degrees of freedom (df) to determine if there are any outliers in the variables using a significance value of (P=0.001). The multivariate normality was met by this data since all the p-values were more than the accepted standard value of .001 except for one case in each variable which is insignificant considering the size of the data being used. Therefore, the conjecture here cannot be repudiated since there exists evidence that the data comes from a normal distribution.

In scrutinizing the statistics to analyse the homoscedasticity matrices, the unequal variance t-test for equality of variance was utilized. This test examines whether the variances of samples are approximately equal. The assessment indicates that there was no substantial variance for all the items as the observed p-values were all greater than .05 as displayed in Table 13. Since there was no violation in any set of observations, the conjecture cannot be rejected since the divergence of difference between the subgroups of the survey tool was limited to nonexistence. Thus, it may be argued that the data, therefore, meet the assumption of homogeneity of variance see Table 13 below.

Table 4:10

Test of Homogeneity of Variance

	Levene's Statistic	df1	df2	Sig.
Variables				
Variable 1				
Item 1	.032	1	98	.859
Item 2	1.090	1	98	.229
Item 3	.055	1	98	.815
Item 4	3.907	1	98	.051
Item 5	1.397	1	98	.240
Item 6	2.925	1	98	.090
Item 7	1.214	1	98	.273
Variable 2				
Item 1	2.240	1	98	.138
Item 2	.897	1	98	.346
Item 3	.396	1	98	.531
Item 4	2.504	1	98	.117
Variable 3				
Item 1	.061	1	98	.806
Item 2	.106	1	98	.745
Item 3	.074	1	98	.786
Item 4	1.160	1	98	.284
Item 5	.100	1	98	.753
Item 6	.088	1	98	.768
Item 7	1.103	1	98	.296
Item 8	.643	1	98	.425
Item 9	1.360	1	98	.246
Variable 4				

Item 1	.739	1	98	.392
Item 2	1.418	1	98	.237
Item 3	.355	1	98	.552
Item 4	1.009	1	98	.318
Item 5	.023	1	98	.881
Item 6	.001	1	98	.979
Item 7	.147	1	98	.703
Item 8	.446	1	98	.506
Item 9	.265	1	98	.608
Variable 5				
Item 1	.105	1	98	.746
Item 2	1.159	1	98	.284
Item 3	.070	1	98	.792

The other notable assumptions considered for the Multivariate analysis are singularity and multicollinearity. Statistically, if singularity or multicollinearity exists in data it means that the independent variables (IVs) are redundant with one another, thus one IV does not add any predictive value over another IV. Having multicollinearity or singularity can therefore weaken the data analysis. To determine this, the collinearity statistics were where the variance inflation factor (VIF) value was observed. For all the independent variables, the VIF value was below 2. A VIF above 3 would indicate possible multicollinearity or singularity in the data. The data was not multicollinear, thus meeting the assumption.

The final assumption of the Multivariate analysis is the one-dimensionality test. There ought to be a linear association among the reliant variable for each group. MANOVA techniques are grounded on the linear amalgamations of the predictor variables. Hence, it is often presumed that there is a linear relationship between all sets of reliant parameters and all pairs of covariates

among every single set. The examination of the normal probability quantile plot (normal Q-Q

plot) discloses that the aforementioned supposition was satisfied because of the linearity of the

relationships among the variables.

Since all of the assumptions for conducting the MANOVA test were met, it was safe to

run the MANOVA analysis and draw conclusions from the results. The findings of the statistical

analysis are outlined and expounded in greater detail further within the chapter.

4.4.2: Qualitative Phase

Qualitative facts were gathered by means of partly structured interviews with unrestricted

question types to allow full insight into all the queries. A total of four interviews were conducted

from a convenient sample of participants consisting of curriculum directors who were

conveniently selected. The decision to utilize a small sample size of four curriculum directors in

the qualitative stage of this examination was strategic and driven by a commitment to achieve in-

depth exploration, navigate resource constraints, address the unique characteristics of the

population, and attain data saturation. Focusing on depth rather than breadth, the study wanted to

comprehensively examine the experiences, perspectives, and practices of curriculum directors

within the Anglophone Caribbean educational context. Practical considerations, such as time,

budget, and logistical challenges, particularly during the COVID-19 pandemic further

necessitated a pragmatic approach to maximize available resources while ensuring a rigorous

exploration of the research queries. Recognizing the specificity and expertise of curriculum

directors, the investigation justifies a smaller, more focused sample that can provide nuanced

insights into their roles, challenges, and strategies related to teacher training and its impact on

male academic achievement. Finally, the goal is to efficiently reach data saturation, where the

collection of additional data ceases to yield new insights, ensuring a robust qualitative analysis that contributes meaningfully to the research objectives.

4.4.2.1: Demographics

This phase of the study involved four participants, consisting of one male and three females. Participants were directors from prominent teacher training institutes in the Anglophone Caribbean, selected through convenient sampling. The decision to limit the sample size to four curriculum directors was deliberate, driven by the aim to conduct a thorough exploration, navigate resource limitations, address the unique nature of the population, and reach data saturation. Participant 1, a 34-year-old male, was from Guyana with six years of experience. Participant 2, a 62-year-old female, was from Barbados and had 18 years of experience. Participant 3, a 48-year-old female, was from Jamaica with six years of experience. Participant 4, a 51-year-old female, was Jamaican working at the University of the West Indies in Trinidad and Tobago and had ten years of experience. In keeping with anonymity, the selected demographic details for the participants in the qualitative phase are outlined in Table 14 below.

Table 4:11

Demographic Details from the Qualitative Phase

Participant	Gender	Age	Origin	Experience (Years)
Participant 1	Male	34	Guyana	6
Participant 2	Female	62	Barbados	18
Participant 3	Female	48	Jamaica	6
Participant 4	Female	51	Jamaica/ Trinidad	10

(N=4)

The selection of participants aimed to provide a diverse range of perspectives from different Caribbean countries and varying levels of experience within the education sector.

4.4.2.2: Analysis

The qualitative analysis for this study was conducted using NVivo software, to analyse raw data collected from the virtual interviews. NVivo is designed to file sections of the qualitative raw data that the researcher intends to code into coding schemes. Qualitative analysis is fundamentally about data reduction, where the researcher sifts through the data to identify and extract information that is pertinent to addressing the research questions (Adu, 2019). This involves a systematic approach to coding and forming themes to extract meaningful insights relevant to the research questions.

This qualitative analysis process started with the transcription of each of the four interviews derived from the pre-recorded online interview ensuring an accurate representation of the spoken words. Each transcribed interview was saved in separate Word documents. The researcher then thoroughly and repeatedly read through each transcribed interview word for word to become familiar with the facts. This initial step served to assist the investigator gain a general comprehension of the content and context of the interviews before delving into the coding process.

The coding process for this study followed an iterative process, where both deductive and inductive techniques were used. The best qualitative examination process, as Bryne (2022) suggests, often blends elements of both deductive and inductive approaches. A purely deductive analysis is deemed impractical because understanding the interrelationships among various data points is essential to identify recurring patterns that align with a particular theory or framework.

Besides, an entirely inductive analysis is not feasible because researchers require criteria to determine the relevance of information in addressing the research questions and its subsequent coding (Braun & Clarke, 2021). In this regard, however, the most predominant approach used in this analysis was inductive coding. This involved open-coding, where patterns, themes, or categories would be identified from the data itself, without trying to fit it into preconceived categories, to emphasize the meaning of the raw data (Bryne, 2022). Some level of deductive analysis was also used to ensure that the open-coding process used for the inductive analysis developed meaningful themes for the study's research questions.

The coding process started by uploading the four different interview transcripts on the NVivo platform. Bucket codes titled after each of the four research questions were then created: to help in categorizing the codes relevant to answering each research question. The researcher then carefully reviewed the raw data, identifying and extracting all relevant excerpts from the interviews that could help answer the research questions. This process involved breaking down the data into meaningful segments, assigning descriptive labels (codes) to these segments, and organizing them into categories based on similarities and patterns as per the study questions. The analysis resulted in a total of 36 codes. Research Question 1 had 16 codes, which is the highest. Research Question 2 had 5 codes. Research Question 3 resulted in 9 codes and Research Question 4 had 6 codes. This distribution highlights the depth and complexity of the insights captured across the different research questions, highlighting the diverse aspects of teacher training programmes and their impact on male academic performance in the Anglophone Caribbean. Together, the excerpts contained in these codes form the basis of the word cloud presented in Figure 4.1, providing a detailed framework for analysing and interpreting the qualitative data collected in this study.

Figure 4:1

Word Cloud Overview

Source: NVivo

After successfully coding the data as per the research questions, the researcher then

proceeds to review, list, and categorize the cords into clusters. Clustering was done separately for

each research question by grouping related codes to develop overarching themes. A total of eight

(8) themes emerged from the coded segments. Each theme represented a significant pattern or

concept that emerged from the responses of the participants. Research Question 1 yielded three

main themes, reflecting the diverse perspectives and experiences related to teacher training

programmes and their impact on male academic performance. Similarly, Research Questions 3

and 4 each resulted in three distinct themes, highlighting core beliefs, theoretical practices, and

potential changes in teacher training programmes. Research Question 2, focused on enhancing

gender awareness and impacting classroom practices, generated two key themes. These themes

summarized the essence of the qualitative data and provided a structured framework for

understanding the findings and addressing the research questions. The information for these

themes and their respective codes is represented in Table 4.12 below.

Table 4:12

Themes and Codes Presentation

Research Question	Themes	Codes	Rationale
RQ1	*1. Teacher Quality and Training Impact*	– Importance of teacher training – Teacher qualities – Quality of teacher training – Continuous professional development – Theory-practice gap – Application of theory – Teacher training needs improvement – Teacher selection criteria	This theme highlights the significance of qualified and well-trained teachers for impacting student performance. They point to potential gaps between theoretical training and practical application, suggesting a need for ongoing development opportunities.
	2. Teacher Perceptions and Attitudes	– Teacher challenges – Perceptions of learning – Attitude towards teaching	The theme touches upon teachers' personal experiences, challenges, and perspectives on teaching and learning. They hint at the potential influences of these factors on classroom dynamics and effectiveness.
	3. Pedagogy and Student Engagement	– Understanding gender differences in learning – Motivation for learning – Male students' engagement – Teaching strategies for engagement – Male teacher presence in the classroom	The theme focuses on specific teaching approaches and their influence on student engagement, particularly for male students. They underscore the need for teachers to understand diverse learning styles and tailor their methods accordingly.
RQ2	*4. Supporting Teacher Development for Improved Male Achievement*	– Professional development for teachers – Ongoing support for teachers – Reflective practitioners	The theme emphasizes the importance of providing teachers with adequate training and ongoing support to effectively engage male students and improve their academic achievement.
	5. Designing Gender-Responsive Strategies	– Gender-sensitive curricula – Teacher training for male engagement	The theme addresses specific issues that affect the education of male learners and suggests changes that can be implemented to address the specific needs and learning styles of male students.

RQ3	6. *Theoretical Models of Teacher Training*	– Academic model of teacher training – Challenges with practicum – Need for alternative models – Collaborative decision making – Curriculum Theories – Student-centred learning – Theoretical principles in training	This theme explores the foundational frameworks that shape teacher training models and practices, including the academic focus, challenges with practicums, and theoretical underpinnings of teaching practice.
	7. *Influences on Training Content*	– European influence – Caribbean-centric approach	This theme focuses on the cultural and regional influences shaping the content of teacher training programs. It highlights the tension between existing models and calls for a more localized approach.
RQ4	8. *Desired Changes and Outcomes*	– Adaptable curriculum for research – Curriculum adaptation for improvement – Flexibility in teaching practices – Increase Male Presence – Impact of changes in teacher training	This theme highlights the anticipated benefits of changing teacher training.

Note. Qualitative data was collected by the author in October 2021.

4.5: Results of Findings

This section discusses the mixed methods findings from both sets of data after analysis concerning the four research questions (RQ) and hypotheses. It utilizes qualitative methods in combination with quantitative methods to provide a more robust view of research and provides the opportunity to gather participant voices. The findings will be analysed using both quantitative data and qualitative data. Quantitative strand findings will be analysed through descriptive statistics, multivariate analysis of variance (MANOVA) or both. Qualitative strand findings will be analysed using eight (8) developed themes that emerged, each representing distinct features of

the data related to the investigative queries. The data will be presented in tables to show the descriptive analysis for each research question.

4.5.1: Research Question 1 Results

RQ1. What are the Significant Relationships Between Teacher Training Programmes and Male Academic Performances?

The foremost question of the investigation examines the association between teacher training programmes and the performance of male students. This main probing question was then further sub-divided into three questions as follows:

RQ1a. How do teachers' attitudes towards and their perceptions of teaching and learning relate to the theoretical foundations underlying their training?

RQ1b. What impact do teachers' pedagogical principles have on students' achievement?

RQ1c. To what extent are teachers exposed to a vast number of teaching strategies during the teacher training progress that will enable them to properly engage male students?

4.5.1.1: Quantitative Results

RQ1 queried whether there exists a substantial interrelation between an educator's training and male academic attainment. The research question was directly linked with one item on the survey tool (Part 5, Q2), which measured participants' thoughts on the connection between teacher training and learners' performance. The statement was measured using a 5-point hierarchical ranking ranging from strongly disagree = 1, disagree = 2, neither agree nor disagree = 3, agree = 4, and ending at strongly agree = 5. A descriptive statistic was conducted for this research item and the quotient was recorded in terms of percentage, mean, frequency, and standard error or deviation. The results disclosed that 63% (n=63) of the contenders concurred with the statement, and 14% (n=14) of the participants strongly agreed. Similarly, 14% (n=14) of

the participants held a neutral opinion. They neither agreed nor disagreed with the statement. On

the lower end, 8% (n=8) of the respondents disagreed, while only 1% (n=1) of the participants

strongly disagreed. The mean and standard deviation scores were also recorded as follows: (M =

3.8100, SD = .81271) and is illustrated in Table 4.13 below. This data illustrates that the widely

held opinion of most of the participants is that teacher preparation programmes have a huge

influence on male academic performance.

Table 4:13

Descriptive Statistics for Frequency of Teachers' Training Impact on Student Performance

N=100 Items	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	*M*	*SD*
Part 5, Q2	1	8	14	63	14	3.8100	.81271
	1%	8%	14%	63%	14%		

To further investigate this point, RQ1 was subdivided into three research questions

(RQ1a-RQ1c) to measure more specific factors concerning teacher training and classroom

application.

For RQ1a, respondents were asked to reply to one item of the survey (Part 5, Q3), which

asked whether the attitudes and perceptions of teachers relate to the theoretical foundations

underlying training. The query was evaluated using a 5-point ranking scale stretching from

strongly disagree = 1, disagree = 2, neither agree nor disagree = 3, agree = 4, through to strongly

agree = 5. In investigating the overall percentage, mean, frequency, and standard error of

deviation for this item, the results indicated that 54% (n=54) of the respondents agreed with the

statement, 18% (n=18) neither agreed nor disagreed and 17% (n=17) of the respondents

indicated strongly agreed as their statement of choice. On the contrary, 9% (n=9) of the

participants indicated that they disagreed and only 2% (n=2) strongly disagreed with the

statement as shown in Table 4.14. The reported mean and standard deviation for this data was (M

= 3.7500, SD = .91425) as shown in Table 4.14. This illustrates that more than half of the

teachers agreed there was an association between teachers' attitudes, their opinions of teaching

and learning and their training.

Table 4:14

Descriptive Statistics for Frequency of Teachers' Attitudes and Perceptions in Relation to Their
Training

N=100 Items	Strongly Disagree	about	Neither Agree nor Disagree	Agree	Strongly Agree	*M*	*SD*
Part 5, Q3	2	9	18	54	17	3.7500	.91425
	2%	9%	18%	54%	17%		

For RQ1b on whether teachers' pedagogical principles have an impact on student

achievement, participants were request to respond to one item in the survey (Part 5, Q4). This

survey item was measured using a 5-point Likert scale with an array of options from strongly

disagree = 1, disagree = 2, neither agree nor disagree = 3, agree = 4, to strongly agree = 5. The

results revealed that 64% (n=64) of the respondents concurred with the assertion and 15% (n=15)

strongly agreed with it. However, 9% (n=9) of the respondents disagreed while 8% (n=8) of

them held a neutral position. The least number of participants 4 % (n=4) indicated that they

strongly disagreed with the statement as is represented in Table 4.15. The average score and

standard error of deviation score were as follows: (M = 4.1700, SD = .87681) as seen in Table

4.15. The results show that most participants believed that pedagogical principles do influence students' performance.

Table 4:15

Descriptive Statistics for Frequency of Teachers' Pedagogical Principles and Students' Achievement

N=100 Items	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	*M*	*SD*
Part 5, Q4	4	9	8	64	15	4.1700	.87681
	4%	9%	8%	64%	15%		

RQ1c sought to find out whether the training programmes expose teachers to adequate teaching strategies to enable them to engage more with male students. This question was evaluated using one survey item (Part 5, Q5) that was measured using a 5-point Likert ranking scale where strongly disagree = 1, disagree = 2, neither agree nor disagree = 3, agree = 4, and strongly agree = 5 were the options. Descriptive statistics was run for this survey item to find the mean, percentages, frequency, percentages, and the standard error of deviation of the results. From the results, 40% (n=40) of the respondents agreed, while 33% (n=33) disagreed with the statement. 19% (n=19) neither agreed nor disagreed and 6% (n=6) of the respondents were in strong agreement. Only 2% (n=2) of the teachers strongly disagreed with the statement. On the contrary, the mean and standard error of deviation was recorded as (M = 3.1500, SD = 1.01876) (see table 4.16). While most participants agreed with the statement, the number of participants who disagreed was also significant, thus worth noting.

Table 4:16

Descriptive Statistics for Frequency of Exposure to Adequate Strategies in Training Programmes for Engaging with Male Students

N=100 Items	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	*M*	*SD*
Part 5, Q5	2	33	19	40	6	3.1500	1.01876
	2%	33%	19%	40%	6%		

MANOVA Result

A MANOVA analysis was also conducted on the data to measure whether there were significant differences between teacher training factors (teacher attitude, pedagogical principles, and teaching strategies) and teacher education (highest teacher training level) as well as to determine whether teachers' level of education and training significantly impacts on the educational performance and attainment of male students. The MANOVA analysis was used to corroborate the significant probability of the discrepancies that may exist. The results of the MANOVA showed that there was no substantial variance among the education (teacher training levels) when considered jointly on the variable factors of teacher attitude, pedagogical principles, and teaching strategies and male academic performance, Wilks' Λ = .871, F (15, 254) = .868, p = .601, partial $\eta2$ = .045 as is displayed in table 4.17 below.

Table 4:17

Multivariate Analysis of Variance on Teacher Training Level

Effect	Wilks' Lambada Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Education (Part 1, Q4)	.871	.868	15.000	254.379	.601	.045

A separate ANOVA test was then conducted for each of the three variables collectively to establish the relation between teacher educational level and male performance, with each ANOVA evaluated at an alpha level of 0.25, which is the Bonferroni adjustment of correlation. There existed no major variance among the teacher training levels on teacher attitudes, F (5, 94) = .671, p = .646, partial η2 = .034. There was also no substantial variance between the training levels and pedagogical principles, F (5, 94) = .780, p = .567, partial η2 = 0.40. Similarly, it was noted that there exists no notable variation between teachers' education levels, training and teaching strategies, F (5, 94) = 1.401, p = .231, partial η2 = 0.69 (see Table 4.18). Overall, these results indicate no substantial correlation between educators' level of training and male educational achievement. Therefore, regardless of the participant's level of training, their teaching strategies and pedagogical principles the performance of male students were often comparable as indicated by Table 4.18 below.

Table 4:18

Univariate Analysis of Teacher Training Levels

Dependent Variable		Sum of Squares	Df	Mean Squares	F	Sig.	Partial Eta Squared
Teacher Attitude (Part 5, Q3)	Education	2.852	5	.570	.671	.646	.034
	Error	79.898	94	.850			
Pedagogical Principles (Part 5, Q4)	Education	3.031	5	.606	.780	.567	.040
	Error	79.079	94	.777			
Teaching Strategies (Part 5, Q5)	Education	7.126	5	1.425	1.401	.231	.069
	Error	95.624	94	1.017			

4.5.1.2: Qualitative Findings

The quantitative data showed that teacher preparation programmes have a huge influence on male academic performance. It also proved an association between teachers' attitudes, their opinions of teaching and learning and their training. Participants also showed support that training programmes the training programmes expose teachers to adequate teaching strategies. To provide a more robust view of the research and provide an opportunity to gather participant voices qualitative findings were utilized. Qualitative analysis revealed several key themes as presented in Table 4.19 below. The themes collectively contribute to a more comprehensive understanding of the role of teacher training programmes in enhancing male academic performance, underscoring the importance of qualitative inquiry in RQ1.

Table 4:19

Themes in Responses to RQ1

Themes
Theme One: Teacher Quality and Training Impact
Theme Two: Teacher Perceptions and Attitudes
Theme Three: Pedagogy and Student Engagement

Theme 1: "Teacher Quality and Training Impact"

Theme 1 highlighted the significance of qualified and well-trained teachers for impacting student performance, indicating potential gaps between theoretical training and practical application. This theme suggests a need for ongoing development opportunities. It was especially instrumental in answering the main research question (RQ1) and (RQ1c). Findings from the quantitative data showed that teacher preparation programmes have a huge influence on male

academic performance. The finding was also apparent in the qualitative phase, with participants expressing how potential gaps in teacher training can impede performance.

First, in showing the state of the Anglophone Caribbean teacher training system, participants shared a few sentiments to clarify its current state. In particular, participant 3 (P3), emphasized the importance of teacher preparation, stating that "the preparation of teachers which is what we train teachers for is very important; it's a priority across the region." This comment highlights the significance placed on teacher training in the Caribbean. In supporting this, participant 2 (P2), commented that "the level and quality of training offered is adequate," which indicates a level of satisfaction with the current training system in the Caribbean as enquired by Research Question 1b.

However, in light of the comments about the region's training programs, the participants also had a lot to point out gaps within the training system that may be impeding the quality of teacher training, thus affecting the quality of education that is delivered to learners. One such gap was expressed by P2, who noted a challenge in retaining trained teachers, stating, "We are training enough teachers but we are not able to keep them." This observation indicates a disconnect between the training system's ability to produce qualified teachers and the region's capacity to retain them. Participant 1 (P1) also highlighted a challenge in the reduction in the duration of training programs, particularly the time spent on learning the content to be taught, saying:

> *In Guyana… when you come from CXC or CAPE into teachers' college you used to spend three years and that first year used to be spent learning the content to which you would be teaching. Now we've reduced that in almost all Caribbean. So, we drastically*

reduced the program but we expect them to still function at the same level or on par with

their colleagues who went and did that first degree before they did the teacher training.

The participant suggests a potential compromise in the depth and breadth of preparation for

teaching roles, which might have a direct impact on the quality of education delivered by the

teachers.

In the same breath, participant 3 (P3), highlighted a perceived gap between teacher

preparation and in-service training, indicating a disconnect between the theoretical aspects of

training and the practical application in real classroom settings by mentioning that "there is a gap

between what is happening in terms of teacher preparation in versus what is happening at the in-

service level." The participant further pointed out the gap between the knowledge and skills

acquired during teacher training and their application in real-world teaching environments by

stating "The disconnect for me has to do with the application of what they have learned in

college to the settings that the teachers find themselves in." The participant suggests that while

teachers may receive comprehensive training, they may struggle to effectively apply this

knowledge in the diverse and complex settings of their classrooms, which is yet another good

indication of the punctures in the Anglophone Caribbean's education system, and a potential

cause for underperformance.

In support of the disconnect expressed by P3 above, P2 commented "I think there

probably is room for a more focus approach on helping new beginning teachers to understand

these issues," suggesting that there is a need for a more focused approach to helping new

teachers understand various issues related to actual teaching practice within the classrooms. The

participant further supported these remarks by noting that "learning to be a teacher does not just

happen throughout your first teacher training; it's something that happens throughout your whole

career." This emphasizes the significance of ongoing professional growth to close the gap between theory and application and prepare new teachers for the classroom. Her sentiments align with a broader understanding of teaching as a continual learning process, indicating a recognition of the need for continuous growth and development beyond initial training.

Theme 2: Teacher Perceptions and Attitudes

The second theme touched upon teachers' personal experiences, challenges, and perspectives on teaching and learning, hinting at the potential influences of these factors on classroom dynamics and effectiveness. This theme was especially important in answering Research Question 1a, which explored how training may influence teachers' attitudes and perceptions. Quantitative results illustrated an association between teachers' attitudes, their opinions of teaching and learning and their training.

Findings from the qualitative data also provided a more robust view of this matter. A dominant issue expressed by the participants was the importance of selecting individuals with the right attitudes and perceptions towards teaching, as these factors can significantly influence the standard of schooling that scholars receive. The discoveries noted that individuals who are not dedicated to their teaching practice bear the wrong perception and attitude towards teaching which can be reflected in their actual practice. Participant 4 (P4) commented that:

> *I don't necessarily believe that everybody was cut out to be teachers…. there are certain dispositions… characteristics that ought to be there… it really should be reflecting in the way they teach, and it should be reflecting on how teacher educators prepare future teachers.*

The sentiment reflects a perception that teaching may require more than just academic qualifications or training; it also requires a genuine inclination towards the profession. The

participant underscores the belief that not everyone is naturally inclined or suited to be a teacher and that certain innate characteristics and dispositions are necessary for effective teaching, and while teacher preparation can help develop these qualities, they should already exist to some extent.

About the sentiments expressed by Participant 4, participant 3 explains that some individuals may choose teaching as a career path almost by default, without a genuine interest or passion for the profession by lamenting that:

> *...you find most time in Guyana the person who takes that strand are persons who did not directly choose to become teachers. They just decide to go to the university to do a content degree because they haven't made up their minds about what to do with their lives. Then after they have finished that content degree, they say ok teaching can probably work for me they go and do the one-year degree because they already have the content.*

The participant shows how the wrong attitude in training may contribute to the placement of incompetent teachers who are not fully committed or engaged in their roles in the classrooms, as their decision to become teachers was more circumstantial than deliberate.

Another concern that was identified within the qualitative data concerning the perception and attitude of teachers towards training was the absence of important resources, not only during training but also at practice: a factor that can negatively influence teacher perception and attitudes during practice, ultimately leading to poor performance. In this regard, Participant 1 mentioned "the unavailability of resources for teacher training and teachers in the classroom," suggesting that teachers may not receive adequate training or have access to essential resources in the classroom, which can affect their confidence and ability to perform effectively. The same

participant further expresses a lack of support, especially for newly qualified teachers by noting that "When they become newly qualified teachers and the realm of support, not just in terms of material support, in terms of mental support in terms of workload and all of that." This may contribute to feelings of isolation and inadequacy among new teachers, affecting their motivation and enthusiasm for the profession.

In addition, Participant 3 further highlights the changing dynamics that teachers face when they transition from training to actual employment in a school, which can significantly impact their perceptions and attitudes towards teaching. The participant mentions the expectations of the school, which likely include meeting curriculum standards and achieving certain academic outcomes, stating:

> *Now that they are actually, employed in a school the dynamics have changed and the dynamics change in regards to the expectations of the school… curricula expectations… the dynamics of the students they have to teach and the dynamics of the curriculum which they have to implement and a lot of it really has to do with support.*

These expectations may create pressure and stress for teachers, influencing their attitudes towards their profession. The findings generally show that being in the wrong career and lack of support or resources can lead to undedicated, overwhelmed and demotivated teachers ultimately affecting the quality of education provided to the students.

Theme 3: Pedagogy and Student Engagement

The final theme addressing Research Question 1 focused on specific teaching approaches and their influence on student engagement, particularly for male students, emphasizing the importance of understanding diverse learning styles. This theme was especially important in answering Research Question 1b, which enquired whether pedagogy impacts achievement.

Quantitative findings on the same enquiry showed that pedagogical principles influence students'

performance.

In the qualitative inquiry, the findings are equally parallel, with the participants in

particular emphasizing the importance of culturally relevant teaching approaches. The first

participant highlighted the need to align teaching practices with local culture, suggesting that

incorporating cultural context into lessons can enhance student learning, saying:

> *… for example, I am teaching mathematics… before I actually started teaching*
>
> *mathematics in any particular area in Jamaica, I try to understand the culture and*
>
> *everyday context of mathematics use in the area. My approach to teaching mathematics*
>
> *is more linked to culture than the general curriculum itself. I do this because I believe*
>
> *that if children are connected to what they are learning, they learn it better.*

The participant emphasizes the importance of incorporating cultural relevance into teaching

practices. By aligning the teaching approach with the cultural context, the participant believes

that students will be more engaged and learn better.

This sentiment was echoed by the fourth participant, who emphasized the use of

culturally appropriate pedagogies tailored to the Caribbean context noting that:

> *So, we use culturally appropriate pedagogies, because there are instances in which some*
>
> *of the things that you know from the main literature and the main theories that can't be*
>
> *used in Jamaica and can't be used in the Caribbean.*

The comment underscores the significance of culturally appropriate pedagogies in the Caribbean

context, with the participant highlighting the limitations of relying solely on mainstream

educational theories and practices, suggesting that they may not always be applicable or effective

in the Caribbean. In general, both perspectives underscore the value of recognizing and integrating local culture into educational practices to promote student engagement and learning.

Moreover, participants expressed concerns about the engagement of male students in the classroom, attributing the cause of disengagement to unfit pedagogical approaches. Participant 4 noted that boys may not be as excited about the curriculum, indicating a need for teachers to understand and address gender differences in learning.

> *They are not excited about the curricula… there's work that needs to be done to help*
>
> *teachers understand how boys and girls learn differently.*

This observation highlights the importance of recognizing and accommodating diverse learning styles, particularly for male students, to enhance their engagement and performance in the classroom.

4.5.2: Research Question 2 Results

RQ2. How Can Teacher Training Programmes and Practices in the Anglophone Caribbean be Augmented to Raise Gender Awareness and Impact Classroom Practices and Improve Male Academic Achievement?

The second investigative question concerned the general augmentation of the teacher training programmes to promote quality and improve performance. This research question in particular asked whether teacher training programs and practices can be augmented to raise gender awareness and impact classroom practice, consequently improving the performance of male students. To adequately address this general and broad question, this central investigative question (RQ2) was further subdivided into two more specific research questions as follows:

> **RQ2a.** How can teacher training programmes in the Anglophone Caribbean be enhanced
>
> to engage male students and improve their academic achievement?

RQ2b. What strategies can be further implemented by teacher training institutions, policymakers and curriculum developers to enhance male academic achievement?

4.5.2.1: Quantitative Results

To answer the main research question, respondents were requested to reply to three items on the survey (Part 6, Q1-Q3). The first survey item (Part 6, Q1) asked the participants about their satisfaction levels in regard to the query of whether the current state of teacher training programmes can sufficiently address the educational deficit among female and male students. The question was assessed with a 5-point Likert scale ranging from very dissatisfied = 1, not satisfied = 2, neutral = 3, satisfied = 4 to very satisfied = 5. After running a frequency test and measures of central tendencies the results revealed that 42% (n=42) were not satisfied, 33% (n=33) were neutral, and 16% (n=16) were satisfied. On the low, 6% (n=6) of the participants were very dissatisfied and only 3% (n=3) were very satisfied. The mean and standard deviation scores were (M = 2.6800, and SD = .91982) as shown in Table 4.20. The results show that most participants are not confident that the current programs can sufficiently address the apparent performance gap.

Table 4:20

Descriptive Statistics for Frequency of Adequacy in Addressing Performance Gap Between Male and Female Students in Current Teacher Training Programmes

N=100 Items	Very Dissatisfied	Not Satisfied	Neutral	Satisfied	Very Satisfied	*M*	*SD*
Part 6, Q1	6	42	33	16	3	2.6800	.91982
	6%	42%	33%	16%	3%		

The second survey question in this section (Part 6, Q2) aimed toward answering RQ2 asked the participants whether they believe that changes in the overall structure, theoretical beliefs and pedagogical practice underlying teacher training programmes in the Anglophone Caribbean will impact classroom practice and by extension male academic performance. The question was a multiple-choice type with the following options: Yes = 1, No = 2, Maybe = 3. Frequency test, mean and standard deviation scores were measured for this question and were thus reported. From the results, 70% (n=70) of the participants answered Yes, 25% (n=25) answered Maybe, and 5% (n=5) answered No. The average and standard deviation for this data was (M = 1.5500, SD = .86894) as illustrated by Table 4.21. The discoveries show that a considerable number of the participants believe that changes to the current programs would result in improved academic performance.

Table 4:21

Descriptive Statistics for Frequency of Perceived Impact on Classroom Practice and Male Performance with Changes in Overall Structure, Theoretical Beliefs, and Pedagogical Practices

N=100 Items	Yes	No	Maybe	*M*	*SD*
Part 6, Q2	70	25	5	1.5500	.86894
	70%	25%	5%		

The third question (Part 6, Q3) required the participants to express their confidence level in regard to whether they think changes to the existing teacher training programs can help salvage the current situation of male underperformance. This survey item was measured by use of a 5-point hierarchical scale ranging from not confident at All = 1, somewhat confident = 2, neutral = 3, confident = 4 to very confident = 5. The frequency and percentage test results

revealed that most of the participants 34% (n=34) indicated that they were somewhat confident and 24% (n=24) answered that they were confident that the changes would help salvage the current situation. 18% (n=18) of the respondents stated that they were very confident and another 18% (n=18) of the participants chose neutral. While only 6% (n=6) of the respondents indicated that they were not confident at all with the statement. On the contrary, the mean and standard error of deviation was recorded as (M = 3.1400, SD = 1.23926) (see Table 4.22). These results indicated that the participants had mixed feelings concerning whether changes could alleviate the performance gap. However, more of them were confident that changes could help salvage the current situation.

Table 4:22

Descriptive Statistics for Frequency of Confidence in the Potential of Changes to Current Teacher Training Programmes to Improve Male Underachievement

N=100 Items	Not Confident	Somewhat Confident	Neutral	Confident	Very Confident	*M*	*SD*
Part 6, Q3	6	34	18	24	18	3.1400	1.23926
	6%	34%	18%	24%	18%		

MANOVA Results

For RQ2, a MANOVA analysis was utilized to examine the probable existence of any substantial difference in the constituents of the survey concerning the need for change in the teacher training programme. Therefore, the MANOVA analysis was used to authenticate the statistical importance of the variation against participants' experiences. The results yielded by the MANOVA test indicated that there exists no substantial variance between preservice teachers, in-service teachers (1-5 years of teaching experience), in-service teachers (5-10 years of

teaching experience), in-service teachers (over 10 years of teaching experience), and retired educators based on the combined dependent variables Wilks' $\Lambda = .898$, $F (12, 246) = .852$, $p = .597$, partial $\eta2 = .035$ (see Table 4.23). Having performed a MANOVA, a univariate analysis was also performed on the findings. The univariate analyses indicated that there were no notable differences for all three variables. No significant differences were realized between teacher experience and satisfaction with current teacher training programmes $F (4, 95) = .548$, $p = .701$, partial $\eta2 = 0.23$. Besides, for teacher experience and the variable for the need for change, no significant differences were recorded $F (4, 95) = 1.043$, $p = .389$, partial $\eta2 = 0.42$. Similarly, no significant difference was noted between teacher experience and the variable of change in the existing teacher training programmes $F (4, 95) = .1.434$ $p = .229$, partial $\eta2 = 0.57$. This information is summarized in Table 4.23 below.

Table 4:23

Multivariate Analysis of Variance on Teacher Experience Level

Effect	Wilks' Lambada Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Experience (Part 1, Q8)	.898	.868	12.000	246.346	.597	.035

Table 4:24

Univariate Analysis on Teacher Experience Level

Dependent Variable		Sum of Squares	Df	Mean Squares	F	Sig.	Partial Eta Squared
	Experience	1.888	4	.472	.548	.701	.023
Part 6, Q1	Error	81.872	95	.862			
Part 6, Q2	Experience	6.397	4	1.599	1.043	.389	.042

	Error	145.643	95	1.533			
	Experience	7.126	4	1.064	1.434	.229	.057
Part 6, Q3	Error	70.494	95	.742			

These results indicate that an educator's years of teaching experience have no direct impact on their opinion concerning changes to the current teacher training programmes indicating a low level of contentment with such.

4.5.2.2: Qualitative Results

The quantitative analysis disclosed that a majority of the participants lacked confidence in the current programmes' ability to sufficiently address the performance gap. Besides, there was a strong belief among participants that changes to the overall structure, theoretical beliefs, and pedagogical practices of teacher training programmes could lead to improved academic performance. While participants had mixed feelings about whether these changes could completely alleviate the performance gap, the majority expressed confidence that such changes could help salvage the current situation of male underperformance. A review of the qualitative data therefore suffices to give a broader view of the challenges and explore possible solutions related to teacher training and male academic achievement. Two dominant themes emerged from the qualitative data analysis to help supply a more robust view of the research inquiries (see Table 4.25).

Table 4:25

Themes in Responses to RQ2

Themes
Theme Four: Supporting Teacher Development for Improved Male Achievement
Theme Five: Designing Gender-Responsive Strategies

Theme 4: Supporting Teacher Development for Improved Male Achievement

This theme emphasizes the significance of giving teachers adequate coaching and ongoing support to effectively engage male students and improve their academic achievement. After expressing an absence of confidence in the ability of the current teacher training programmes to address underperformance in the quantitative phase, this theme plays an important role in suggesting changes that can be made to raise gender awareness among teachers and in the classroom.

The first suggestion brought forward by the participants was to provide continuous professional growth and support for teachers to enable them to cater for the dynamic needs of students. Participant 2 emphasized the lack of education and training for teachers on how boys and girls learn differently, saying, "…there's work to be done in helping teachers understand how boys and girls learn differently… there isn't enough active and assertive education and training of our teachers in that sense." The participant suggests that current education and training efforts are lacking in this regard, highlighting a knowledge gap that could impact teaching effectiveness in meeting the various learning needs of masculine and feminine students.

Participant 1 stresses the importance of support, especially for newly qualified teachers, in managing workload and other challenges saying, "When they become newly qualified teachers and the realm of support, in terms of workload and all of that." This implies that without adequate support, these teachers may struggle to effectively manage their responsibilities, which could ultimately impact their ability to tackle the requirements of male learners. The same participant then goes ahead to compare the teacher training process in the Caribbean to that in the

UK, pointing out the need for a more balanced approach that includes both content training and pedagogical training as follows:

> *It is vastly different…, when you are trained to become a newly qualified teacher, let's say in the UK you first have to have that degree that particular undergraduate degree… So, if you spend four years in the university three years is for that content training and the last year will be teacher training, your pedagogical training year. In the Caribbean, I found it is the reverse. You can have your CSEC and your CAPE and you go straight into teacher training college…*

This sentiment suggests that the current approach in the Caribbean may not adequately prepare teachers for the complexities of teaching, including understanding gender differences in learning.

The second participant (P2) also contributes to this theme by calling for more support for teacher trainers themselves, highlighting the importance of resources and professional learning opportunities. The participant articulates, "…there could be more support given to the people who are training the teachers in terms of resources, in terms of their own training and professional learning." This indicates a recognition of the crucial role that teacher trainers play in shaping the skills and approaches of future educators.

Participant 4 then highlights the need to prepare teachers as reflective practitioners, open-minded and flexible, capable of interpreting research to guide their practice and continually improving. The participant suggests that:

> *…we are preparing teachers who we want to be reflective practitioners… Reflective practice is about preparing teachers who are open-minded, it is about preparing teachers who are flexible because we certainly don't want teachers who are inflexible and unrigid and who don't know how to interpret research to guide their practice. And it is about*

teachers who can look at their practice to determine what is good, what is bad about it

and to make improvements."

The same participant further emphasized the importance of incorporating changes in core

educational courses to address underachievement, particularly among male students. She

commented that:

… changes can be made anywhere, everywhere… it would need to go into those core

educational courses. It has to be taught deliberately, there is no other way around it

because teacher preparation is about teaching, about courses, and about delivering

particular content to impress upon the teachers we are preparing.

This comment stresses the significance of integrating strategies to address underachievement in

core educational courses. These suggestions reflect a recognition of the pivotal role that teacher

preparation plays in shaping educators' understanding and approach to teaching.

Overall, the insights under this theme suggest that providing teachers with continuous

professional development and support can lead to better gender awareness and may ultimately

improve the performance of male students by enhancing teaching practices and responsiveness to

diverse learning needs.

Theme 5: Designing Gender-Responsive Strategies

This theme highlighted important issues that affect the education of male learners and

suggested changes that can be implemented to address the specific needs and learning styles of

male students. It provides important insights for RQ2 regarding identifying issues and suggesting

strategies that can be used to neutralize the issues. The qualitative data brought to light important

issues faced by male learners, and the participants also had good suggestions on how to curb

these issues.

A prominent issue that arose in the study involved the availability of male figures not only in school but also in the lives of boys in the Caribbean. Regarding the presence of male teachers in the classroom, Participant 1 explained that:

> *It is not my pedagogical approach but my male presence… for every class that a male teacher is present… there is the male presence the performance goes up… the performance went up and that I almost doubled the performance level when a male was present in the classroom… But the underlying factor showed that the presence of a male in the classroom improved male performance in almost all the classes.*

The excerpt highlights a significant performance improvement when a male teacher was present in the classroom, regardless of the teacher's specific teaching style. The presence of a male teacher seemed to have a positive effect on male students' academic performance, indicating the importance of male role models in educational settings.

In addition, Participant 4 discussed the trend of more females entering the teaching profession, leading to a lack of male teachers in classrooms.

> *… we have more females entering university generally, and we have more females entering into teacher education. So, in a sense, we have no control over who applies to become teachers… when males come in, they may or may not stay or they tend to have to move up into the administration and so they are lost to the school. And so, we have a lack of male presence to provide that type of role model in the classroom.*

These sentiments suggest that the lack of male representation may contribute to male underachievement, as male students may lack male role models in their lives.

Another important point that appeared in the qualitative data aligning with this theme is the systemic issue of marginalization affecting young men within both the educational system

and society at large. To explain this sentiment, Participant 4 says, "… there is an awareness that a lot of our young men are being marginalized within the system… and I think just generally in the society." This suggests a recognition of systemic issues that hinder the educational experiences and outcomes of male learners.

To tackle this marginalization among young male learners, the participant provided a probable solution as follows:

… time has come for us to be more assertive in developing curricula that cater to boys and I think in helping teachers to be more sensitive to what would motivate boys to learn because it's not that we are actively discriminating against them it is just that they are not excited about the curricula.

These suggestions emphasized the need for a proactive approach to curriculum development that caters to the specific needs and interests of boys. The participant points out that the current lack of excitement among boys about the curriculum is not due to active discrimination, but rather a mismatch between the curriculum and the learning preferences of boys.

4.5.3: Research Question 3 Results

RQ3. What are the Core Beliefs and Theoretical Practices Underlying Teacher Training Programs within the Anglophone Caribbean?

The third research question was an enquiry on the core beliefs and theoretical practice underlying the Caribbean teacher training programs. The research question was further broken down into two research questions as follows:

RQ3a. How do policymakers and curriculum developers of teacher training institutes describe the core beliefs and practices underlying teacher training programs?

RQ3b. What theoretical principles are taken into consideration when determining the

content and fundamental theories underlying teacher training in the Anglophone

Caribbean?

4.5.3.1: Quantitative Results

MANOVA Results

For the quantitative results, a MANOVA was administered to examine the possible

significant variation between the constituents of the survey relating to the beliefs and theories

underlying teacher training programmes. The MANOVA was run to confirm if there was a

statistical significance of the variance against the gender of the participants. The findings from

the MANOVA analysis indicate that there is a notable difference between males and females

when considered jointly on two variables (Part 5, Q1-Q2) related to teaching beliefs Wilks' Λ =

.915, F (2, 97) = 4.513, p = .013, partial $\eta 2$ = .085 as indicated by table 4.26 below.

Table 4:26

Multivariate Analysis of Variance on Beliefs and Theories of Teacher Training

Effect	Wilks' Lambada Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Gender (Part 1, Q1)	.915	4.513	2.000	97.000	.013	.085

A separate univariate analysis was then done to analyse each variance dependently. Each

ANOVA was evaluated using an alpha level of 0.25 for Bonferroni adjustment of correction. A

notable variation was established among female and male participants in regards to the role of

gender in student performance F (1, 98) = 8.966, p = .003, partial $\eta 2$ = .084, with the females (M

= 2.8750) scoring higher than males (M = 2.1944). On the other hand, no notable difference was

observed to have existed between females and males concerning how teaching programmes
influence performance, $F(1, 98) = .046$, $p = .831$, partial $\eta 2 = .000$ as outlined in Table 4.29.

Table 4:27

Univariate Analysis on Beliefs and Theories of Teacher Training

Dependent Variable		Sum of Squares	Df	Mean Squares	F	Sig.	Partial Eta Squared
	Experience	10.671	1	10.671	8.966	.003	.084
Part 4, Q1	Error	116.639	98	1.190			
	Experience	.031	1	0.31	.046	.831	.000
Part 4, Q2	Error	65.359	98	.667			

The result from the MANOVA test supplies sufficient and solid evidence that indicates
differing perspectives that female and male teachers hold in regard to the principles and theories
underlying teacher training and in particular the role of gender in student performance.

4.5.3.2: Qualitative Results

Research Question 3 (RQ3) delves into the fundamental beliefs and theoretical
underpinnings that form the bedrock of teaching practice within the Anglophone Caribbean.
Given the exploratory nature of RQ3, a qualitative approach was deemed most appropriate,
allowing for a deep dive into the complexities of teaching ideologies and pedagogical
frameworks. Through qualitative analysis, a nuanced understanding of these core beliefs
emerges, shedding light on the deep-seated values that guide teacher training models. The
analysis revealed two overarching themes that illuminate the essence of RQ3: "Theoretical
Models of Teacher Training" which explores the foundational frameworks that shape teacher
training models and practices, including the academic focus, challenges with practicums, and

theoretical underpinnings of teaching practice; and "Influences on Training Content," which explores the factors shaping the curriculum and instructional content of these programs (see Table 4.28). These themes collectively provide a holistic view of the ideological and theoretical landscape that defines teacher training and education practices in the region, offering a comprehensive understanding of the principles that guide effective teaching practices.

Table 4:28

Themes in Responses to RQ3

Theme(s)
Theme Six: Theoretical Models of Teacher Training
Theme Seven: Influences on Training Content

Theme 6: Theoretical Models of Teacher Training

Theme 6, "Theoretical Models of Teacher Training," delves into the theoretical frameworks and practical structures that underpin teacher training programmes in the Caribbean. This theme emerges from a qualitative analysis focused on understanding the theoretical foundations of teaching practice in the region. Participants' insights shed light on the academic focus of these programmes, the challenges associated with practicums, and the potential for alternative approaches. Through these discussions, a deeper understanding is gained of how teacher training programmes are structured and how they align (or sometimes misalign) with the needs of teachers and students in the Caribbean context.

The examination of data revealed varying opinions about the theoretical models of teacher training. Participant 4 characterized the teacher training model as reflective. She describes how the reflective model underpins their program, highlighting a belief in teachers as creators of their own knowledge, saying, "The reflective model, the reflective model underpins

our programme, and we also believe in teachers as creators of their own knowledge." This view suggests a focus on encouraging teachers to critically examine their practices and beliefs, as well as a program philosophy that values ongoing self-assessment and professional growth.

In discussing the curriculum's framework, Participant 3 emphasizes a student-centred learning approach, saying:

> *...our curriculum is primarily based on the framework of student-centred learning. So, the theoretical underpinnings in terms of theory base come from the whole theory of student-centred learning. So that is what is driven in the colleges that the lesson plans must be student-centred, the delivery of our lessons should be student-centred, the planning of our lessons should be student-centred...but trainees are not taught in a student-centred way.*

This excerpt highlights the programme's theoretical underpinnings in student-centred learning, suggesting a strong emphasis on tailoring teaching to individual student needs and fostering student engagement. However, while the theoretical underpinnings prioritize student engagement and personalized learning, there appears to be a discrepancy between theory and practice.

Participant 2, however, describes the model as academic, emphasizing its content-heavy nature.

> *... the model that is used across the Caribbean is really what is called an academic model where the teachers go into a teacher training program and they are given a lot of content like they have to do subject courses and then they are also asked to follow the mastery of those content courses with what is call a practicum... they are then are assigned to go into real classrooms in the schools and start teaching under the guidance*

of a supervisor and then they are examined or evaluated and given a mark on a score

based on how they perform on the practicum.

In context, the participant explained that the model includes subject courses and practicums, with the practicum serving as a real-world teaching experience under supervision. This description highlights the academic rigour of the teacher training programme in the Caribbean, aiming to provide trainees with a strong theoretical foundation and practical teaching experience.

However, Participant 2, also expressed dissatisfaction with the current model, particularly regarding the practicum experience saying that:

… there is a lot of dissatisfaction with this process… many of the teacher trainees hate

the practicum, they are terrified of it and they don't feel like they are supported enough

and many of the supervisors and examiners will also say you know that they don't think

they are adequately prepared or they don't receive enough training.

These sentiments highlight trainees' fear and lack of support during practicums, as well as concerns from supervisors and examiners about trainees' preparedness for teaching.

To deal with this issue, the participant advocates for exploring alternative models of teacher training. She acknowledges the criticisms of the current model, particularly regarding the practicum experience, and emphasizes the importance of considering other approaches to teacher training, saying:

… there are a lot of other models that we could explore and that seems to be much more

popular, but this seems to be the model that we are sticking to despite the criticisms. I

think that the time is really coming when we have to think very seriously about

developing other models, and other ways of organizing the training of teachers.

These comments suggest a recognition of the limitations of the current model and a willingness to explore new ideas and approaches.

Theme 7: Influences on Training Content

This theme delves into the factors that shape the content of teacher training programs in the Anglophone Caribbean. It explores how cultural and regional influences impact the content of these programs, focusing on the dominance of Euro-centric practices and the call for more Caribbean-centric approaches. Here participants discuss the need to move away from theories and practices developed for the global north, emphasizing the importance of integrating indigenous theories and practices into teacher training. Additionally, they highlight the disconnect between the current curriculum and the cultural context of the Caribbean, advocating for a shift towards more culturally relevant and responsive approaches to teacher training.

Participant 1 criticized the Euro-centric nature of current teacher training models in the Caribbean, highlighting that most theories taught in teacher training programmes are developed for the global north and do not consider the specific context, culture, and needs of the Caribbean as follows:

> *Most of our theories are euro-centric they are global north-specific theories that we try to contextualize to the Caribbean. The theories are all developed specifically for the global north context. We here in the global south have our own specific context, specific to geographical location, demography, interest… None of our theories drives teacher training is globally south-specific. They are all adaptations or modifications of global north theories and that's what drives what goes on in our teacher training programs.*

These sentiments suggest that by incorporating indigenous perspectives and practices, teacher training programmes can better prepare educators to meet the needs of Caribbean students.

Participant 3, who eagerly demonstrated the anticipation to contribute to this issue, also expressed frustration with the dominance of European philosophical underpinnings in Caribbean education, saying that:

> *Now you have touched my hot button, put it this way… we are still in the era of some white old bearded European men who determine how we should approach teaching. So, we are still under the philosophical underpinnings of Piaget, Bronfenbrenner, Vygotsky…*

This frustration expresses the need for a decolonization of education in the region, moving away from European frameworks towards more locally rooted approaches. The participant mentions prominent European theorists like Piaget, Bronfenbrenner, and Vygotsky, suggesting that their theories continue to shape teacher training and educational practices in the Caribbean.

Participant 3 went further to advocate for a shift towards a more Caribbean-centric approach to education by suggesting that:

> *…we need to move away from framing our philosophy of teaching with our Caribbean children taking into account our own historical… we still see education from a European perspective and that could be the reason why we have this serious disconnect… we are taking a paradigm that is not Caribbean focus. …and putting it into a context that we cannot relate to.*

The participant emphasizes the importance of considering the Caribbean's unique historical and cultural context in shaping educational practices. This statement highlights the disconnect between the current educational paradigm and the lived experiences of Caribbean students.

While refuting the euro-centric theoretical practices, some participants offered suggestions for alleviating this century-old practice by integrating it into the indigenous theoretical principles to improve achievement, especially for male learners. Participant 1

recommended the integration of indigenous theoretical principles into teacher training

programmes to enhance their cultural relevance, saying:

> *Our teacher training programmes need that organic element and some would argue that*
>
> *organic element is there because we teach our Social Studies, our teachers are*
>
> *Caribbean and there are cultural courses in the program. But they are all still shaped by*
>
> *the global theories that underline what happens and shape the practice and if those*
>
> *theories continue to be euro-centric or global north specific and we just try to tailor them*
>
> *somewhat to our cultural specificity they still are going to be rooted somewhere else.*

The participant notes that current programmes, while attempting to be culturally specific, are still

rooted in Euro-centric theories, limiting their effectiveness in the Caribbean context. This

suggestion aligns with calls for decolonizing education and underscores the importance of

incorporating local knowledge and perspectives into teacher training.

Participant 4 also supported the idea of integrating indigenous theories into teacher

training programmes, suggesting that:

> *As a matter of fact, anywhere you go there will always be some established classical*
>
> *theories that you begin with and then you look to see how these theories can be made*
>
> *culturally relevant. So, I would never ever say that anything we do has no cultural*
>
> *relevance. There is cultural relevance and as a matter of fact, more so in Trinidad, I*
>
> *would say… we look at how we can use the larger well-known theories, and how do they*
>
> *relate to our situation.*

This statement discusses the importance of making theories culturally relevant and highlights

efforts in Trinidad to indigenize the curriculum and use culturally appropriate pedagogies.

4.5.4: Research Question 4 Results

RQ4. How Can Changes in the Overall Structure, Theoretical Beliefs and Pedagogical Practices

Underlying Teacher Training Programmes in the Anglophone Caribbean Impact Classroom

Practices and by Extension Male Academic Performances?

Research Question 4 investigated whether or not changes made in the overall structure,

theoretical beliefs, and pedagogical practices of teacher training programmes in the Anglophone

Caribbean impact classroom practice and by extension the performance of male students. This

question was measured both quantitatively and qualitatively as discussed below.

4.5.4.1: Quantitative Results

MANOVA Findings

A singular variable was used to assess the possible significant difference of the single

continuous variable. Therefore, a One-Way ANOVA test instead of a MANOVA assessment was

utilized to measure whether there exists a consequential difference between the participants'

gender and the variable on whether or not changes in teacher training programmes impact male

performance. The results derived from the ANOVA analysis indicated no consequential

difference between female and male participants and the variable of change in teacher training

programmes and how it affects performance, $F = (1, 98) = .448$ p $= .505$ (see Table 4.29), with

the females (M = 1.5938) scoring higher than males (M = 1.4722).

Table 4:29

ANOVA Test

Dependent Variable		Sum of Squares	Df	Mean Squares	F	Sig.
	Between Groups	.340	1	.340	.448	.505
Part 6, Q2	Within Groups	74.410	98	.759		

4.5.4.2: Qualitative Results

Research Question 4 (RQ4) delves into the potential impact of changes in teacher training programmes on classroom practices and the academic performance of male students. This question necessitates an exploratory approach, making qualitative inquiry the most suitable method for its investigation. The analysis for RQ4 revolves around one main theme "Desired Changes and Outcomes" as displayed in Table 4.30. This theme encompasses the identification of issues within teacher training programmes, the proposed solutions to these issues, and the anticipated impact of these changes on classroom practices and the academic performance of male students. By examining this theme, the findings offer insights into how alterations in teacher training programmes can lead to improvements in classroom dynamics and student achievement, particularly among male students.

Table 4:30

Themes in Responses to RQ4

Theme(s)
Theme Eight: Desired Changes and Outcomes

Theme 8: Desired Changes and Outcomes

Theme Eight, Desired Changes and Outcomes, delves into the anticipated benefits and transformations that changing teacher training programmes could bring. This theme emerges from a deep-seated recognition within the qualitative study of the urgent need for reform in teacher education.

Participants expressed a collective desire for a shift towards more learner-centred approaches, emphasizing the importance of teachers as creators of their knowledge. Participant 2 suggested that changing the academic model to be more learner-centred for teachers, with a

focus on mentoring, induction, and improving classroom practices, would enhance teacher readiness and effectiveness, saying:

> *If we change the academic model to one that is more hmm learner centred for the teachers themselves, if we have better mentoring and induction, if we have more focus on improving their classroom practice then learning on the subject matter then I think certainly there will be a serious improvement in our teachers' readiness to become quality teachers.*

These sentiments highlighted the importance of shifting the focus of teacher training to be more learner-centred, emphasizing the need for teachers to be equipped with the necessary skills and support to engage students effectively.

There was also a strong sentiment expressed by Participant 2 that current models, particularly the academic model prevalent in the Caribbean, are inadequate in preparing teachers for the complexities of the modern classroom. The Participant expressed the frustration of teacher trainees with this model and went ahead to suggest the need for alternative approaches to the current model, saying:

> *There are a lot of other models that we could explore and that seems to be much more popular, hmm but this seems to be the model that we are sticking to despite the criticisms. I think that the time is really coming when we have to think very seriously about developing other models, and other ways of organizing the training of teachers.*

This excerpt highlighted the need to consider alternative approaches to teacher training that address the limitations of the current academic model.

The issue of European influence was also irradiated as a potential area for change, with Participant 1 and Participant 3 criticizing the Euro-centric nature of current theories and

highlighting the need for a shift away from Euro-centric approaches in teacher training programs towards more localized, Caribbean-centric practices. Participant 3 particularly stated "…and I think we need to move away from framing our philosophy of teaching with our Caribbean children taking into account our own historical context."

Participants were also vocal about the challenges new teachers face due to a packed curriculum, which may hinder their ability to teach critical thinking and reflection. Participant 2 noted that "they say that the curriculum is so packed that the students are not even having the chance to really dig their teeth in to think critically or really reflect deeply." The participants went ahead to suggest the need for a more focused approach to teacher training, ensuring that new teachers are equipped with the skills to teach critical thinking and reflection despite curriculum constraints. The participant echoed, "I think there probably is room for a more focused approach on helping new beginning teachers to understand these issues."

Participants were also vocal regarding the lack of resources to support quality education. Participant 2 emphasized the significance of providing teachers with adequate resources and support, stating that even high-quality teachers may struggle without proper resources.

> *… there is a school of thought that you can have somebody who is a high-quality teacher but they may not be able to offer high-quality teaching if the resources and the context are not adequate… teachers need to get the resources to support what they are doing… you produce a lovely motivated young teacher and put them in a school where there are no resources, no support, nobody helps them, nobody wants them to do well."*

These sentiments prove the importance of creating a conducive environment for teaching and learning, where teachers have access to the necessary resources to implement effective teaching strategies.

Still, on the issue of support, the participant suggests that more support should be provided to those training teachers, including resources, training, and collaboration opportunities. Participant 3, in particular, noted that "…there could be more support given to the people who are training the teachers in terms of resources." The participant also went ahead to suggest what the support should be "…in terms of their own training and professional learning and there could be other things like helping them to have more support amongst each other in terms of more collaboration."

Away from the curriculum models and support, the issue of male figures in the classrooms was also emphasized as an area for potential change. The participants highlighted the positive impact of male teachers on student performance, suggesting the importance of male role models in education with Participant 1 pointing out that, "for every class that a male teacher is present whether the male is being an alpha male or the male has more feminine tendencies whilst there is the male presence the performance goes up." This emphasizes the need for more male representation in the teaching profession to serve as positive role models for students, particularly male students.

4.5.5: Summary

To sum up, the quantitative and qualitative results indicated an association between the current teacher training programmes in the Anglophone Caribbean and the substandard academic attainment of male students, with up to 77% of the participants agreeing with this statement. Most of the participants were confident that the poor performance of boys could be improved by implementing strategic changes, with up to 48% of the participants showing their dissatisfaction with the ability of the existing training programmes to address the prevailing academic deficiency among the male and female learners. The qualitative findings across Research

Questions 1 to 4 provided a comprehensive understanding of the challenges and potential

solutions within teacher training programs in the Anglophone Caribbean using eight themes.

Themes such as the theoretical foundations of teaching practice, the influence of European-

centric models, and the need for curriculum adaptation and flexibility highlight the complex

interplay between global educational theories and local realities. For Research Question 1,

participants highlighted the need for teachers to align their attitudes and perceptions with the

theoretical foundations of their training to improve student achievement. Research Question 2

explored strategies to raise gender awareness and enhance male academic achievement, with

participants suggesting changes to teacher training programmes and practices. Research Question

3 delved into the core beliefs and theoretical practices underlying teacher training programmes,

emphasizing the importance of culturally relevant and student-centred approaches. Finally,

Research Question 4 analysed the influence of changes in teacher training programmes on

classroom practices and male academic performance, with participants advocating for curriculum

adaptation, flexibility, and the inclusion of Caribbean-centric practices. These numerical and

qualitative findings collectively underscore the importance of culturally responsive and

contextually relevant teacher training programmes in improving educational outcomes in the

region.

4.6: Evaluation of Findings

The general goal of this investigation was to survey the relationship between teacher

training programmes and male performances within the Anglophone Caribbean. The

overreaching argument of the investigation is that inadequacy in the structure of teacher

preparation and training programmes within the Anglophone Caribbean as it relates to teachers'

pedagogical practices and instructional strategies as obtained through training has led to the

ineffectiveness across the school system that has exacerbated the problem of substandard male academic achievement. To this end, the data was collected both quantitatively through a survey instrument, and qualitatively using a semi-structured interview. The quantitative information was scrutinized through descriptive statistics and MANOVA, while the qualitative information was collapsed into eight themes, which were encapsulated and organized in compliance with the associated research queries. The following section, therefore, evaluates the meaning of the findings obtained from the Results of Mixed Methods Findings section and interprets the findings in light of the literature highlighted in the study, as well as provides detailed explanations for unexpected or conflicting results obtained from the study. For consistency and suitability, this discussion was organized by research questions and the hypothesis of the investigation and explained based on both the quantitative and qualitative findings.

4.6.1: Evaluation for Research Question 1

4.6.1.1: Quantitative Findings

The first research question queried about the association between teacher preparatory programmes and male programs. In this regard, participants were asked through the survey, their thoughts on the correlation between educators' training and learners' academic performance, in particular male academic performance. A majority of the teachers (63%) agreed that there is a connection between teachers training and students' educational achievement, thus teacher training programmes either positively or negatively influence student educational performance. This result is synonymous with the findings of past studies indicating associations between teacher training programmes and students' educational outcomes (Clotfelter, et al., 2007; Harris & Sass, 2011; Schroeder & Adesope, 2015). A teacher training programme that is consistent with the reality that exists within the general classroom aid in the development of student's

cognitive skills towards knowledge and learning (Batte, et al., 2003; Harris & Sass, 2011; Muralidharan & Sundararaman, 2011; Schroeder & Adesope, 2015; Sorour, et al., 2017; Webster-Stratton et al., 2011). Furthermore, past evidence has shown how teacher training impacts on content delivery abilities of teachers and, thus their ability to control the classroom environment (Bizimana & Orodho, 2014; Jackson & Andrews, 2000; Roofe & Miller, 2013; Zuzovsky, 2009). The lack of or improper training among practising teachers has been greatly linked to the non-performance of students (Clotfelter, et al., 2007; Harris & Sass, 2011; Schroeder & Adesope, 2015).

Delving deeper into the matter of teacher training and student performance, the first investigative question was further broken down into three questions (RQ1a – RQ1c) to enable the exploration of factors more specific to teacher training and classroom application. In regards to whether teachers' attitudes and perceptions of teaching and learning are connected to their training, participants were asked their thoughts on the same, and most teachers (54%) reported that their attitudes and their perceptions towards teaching are developed and influenced by the practices underlying their training. The results here are compatible with previous studies that have reported an unswerving association between the nature of teachers' training models and their effect on the teachers' attitudes and perceptions of teaching (Clarke, 2005; Geisler & Pardiwalla, 2010; Watson-Williams, et al., 2011). By extension, negative attitudes and perceptions towards teaching have been associated with negative academic traits and outcomes. For instance, when teachers carry negative attitudes and hold wrong perceptions toward students in the classroom it impedes teacher and student interactions in terms of student feedback and participation (Clarke, 2005; Watson-Williams, et al., 2011).

To further determine the relationship between training and performance, teacher pedagogical principals were assessed to determine how they impact students' achievement. A similar pattern was also observed in this case when the respondents were asked to appraise their level of agreement pertaining to this issue. Here most of the teachers (64%) agreed that pedagogical principles acquired in teacher training impact students' performance. This finding echoed the sentiments of previous researchers who supported that pedagogical practices often influence both the academic and personal success of learners (Guerriero, 2014; Hardman, 2016; Shulman, 2000). Likewise, (Baik, et al., 2015; Hardman, 2016) support the claim that pedagogy practice enables teachers to influence students' academic performance through cognitive activation and highly collaborative learning experience; enhancing student satisfaction in their subject choices, and courses, and during classroom interaction.

Furthermore, it was important to determine whether teachers are exposed to a broad range of teaching tactics during their training programmes to enable them to effectively engage with male learners. Drawing from the survey results, majority of the teachers (40%), agreed that the training programmes indeed equip teachers with an adequate amount of teaching strategies to facilitate a strong engagement with male students as much as the females in comparison with 33% of the teachers who disagreed with the sentiment. While 19% remain neutral on the issue. However, previous studies have noted a discouraging trend among in-service teachers in the Caribbean, where teachers are employed using the 'bright person' myth as opposed to employing professionally trained teachers (Jennings, 2001; Miller, 2000; Steinbach, 2012), teacher training institutions in this region have been credited for their enhanced quality comparable to other developed nations (Armstrong et al., 2005; Sorour, et al., 2017; Steinbach, 2012; Sylvester, 2008). According to the quantitative findings, the calibre of teacher preparation institutions was

reported in multiple ways. Most teachers (based on the frequency and mean scores of survey items measuring the variable of teacher training) agreed that the training programmes are adequately structured equipping them with instructional strategies and pedagogical practices to sufficiently deal with issues of classroom diversity; recognize the prevailing trend of male underachievement; provide good content knowledge, provide teaching style and methods directly linked to their training; support ICT based innovations, and to prepare them for the classroom.

To further cement these findings, the researcher conducted MANOVA and ANOVA tests as illustrated in Table 7 and Table 8 in Chapter 4.3. The results from the MANOVA and ANOVA analysis were intended to determine whether there were great disparities between key teacher training factors and teacher education and determine whether the teachers' level of education and training significantly impacted the academic performance of the male learners. The results illustrated that there was no great difference between teachers trained at different levels of teacher training institutions and their thoughts regarding the relationship between training and student performance. The teachers who participated in the study had different qualifications, with some of them being in-service and pre-service teachers. Therefore, what this finding essentially means is that while the teachers may have received different training and have different levels of experience, they all agree that teacher training provided in the Anglophone Caribbean shapes teacher's attitudes and perceptions, as well as pedagogical principles, and expose teachers to a vast number of teaching strategies, including issues of diversity within the classroom, throughout the teacher training progress that enables the teachers to properly engage male students. Contrary to these findings, studies have exposed that teacher training programmes do not equip teachers to be confident and competent enough, which can affect teachers' motivation and engagement in the classroom (Gecer, 2002). Besides, Caribbean teachers have

displayed a narrow and rigid approach to teaching, which may not be reactive to the necessities and interests of diverse learners. Also, the training programmes perpetuate ineffective and outdated pedagogical practices, which may not be aligned with current research and best practices in education (Guerriero, 2014).

4.6.1.2: Qualitative Findings

Qualitative findings gave a more robust view of the queries explored in Research Question 1, by gathering more detailed responses from the participants. The results from the qualitative stage corroborated those from the quantitative phase, providing a comprehensive and cohesive understanding of the research queries. The research question was answered by three subject matters that emerged from the examination of qualitative data namely: Teacher Quality and Training Impact; Teacher Perceptions and Attitudes; and Pedagogy and Student Engagement.

Findings aligned with the first theme, "teacher quality and training impact" were important in describing the state of teacher preparation within the region and how it affects performance. Participants highlighted the significance placed on teacher training in the Caribbean, suggesting a recognition of its crucial role in ensuring effective teaching practices and student outcomes. They also have a level of satisfaction with the current training system in the Caribbean, implying that it is effective in preparing teachers for their roles, but only after a few changes are implemented. For instance, participants reported a disconnect between the training system's ability to produce qualified teachers and the region's capacity to retain them, suggesting that while efforts are being made to train an adequate number of teachers, factors influencing teacher retention need to be addressed to sustain a qualified teaching workforce. Participants were also concerned about the short program duration during teacher practice in the

Caribbean, fearing that may lead to teachers being less equipped to deliver high-quality education, especially when compared to colleagues who underwent more extensive training. This sentiment aligns with the broader notion that the quality of teacher training can directly influence the effectiveness of teaching practices and, consequently, the learning outcomes of students (Harris & Sass, 2011). The participant's perspective adds depth to the discussion on how training, or the lack thereof, can impact the overall standard of education provided in the classroom.

Another key finding was the perceived gap between teacher preparation and in-service training, suggesting that there may be shortcomings in how teacher training programmes align with the actual needs and challenges faced by teachers in their day-to-day work. Such concerns demonstrate the importance of bridging this gap to guarantee that teachers are well prepared and supported throughout their careers. The participants also identified a gap between the knowledge and skills acquired during teacher training and their application in real-world teaching environments, thus highlighting the need for teacher training programs to not only impart theoretical knowledge but also provide practical, hands-on experience and support to help teachers translate their learning into effective teaching practices (Darling-Hammond, Hyler & Gardner, 2017). Concern was also raised regarding the effectiveness of new teachers in the classroom. This perspective underlines the vitalness of ongoing professional development and support spanning a teacher's career. It suggests that the quality of education delivered to learners is not solely dependent on initial training but also on the constant growth and development of teachers over time.

The second theme highlighted matters concerning "teacher perceptions and attitudes," leading to interesting revelations on how teachers' training and teaching practice can affect students' performance. This theme answered Research Question 1a, which explored how training

may influence teachers' attitudes and perceptions. Participants were very passionate about the criteria used to select teachers in the Anglophone Caribbean, saying that teachers must possess certain virtues to excel in their practice. The findings showed that individuals enter the teaching profession without having specific innate traits, which may make them struggle to connect with students, manage classrooms effectively, or adapt to the demands of teaching, leading to a suboptimal learning experience for students. On the same breath, participants noted that some people choose teaching as a career, without genuine interest in the profession: a trend that has seen individuals who lack the enthusiasm, dedication, and drive needed to excel in teaching join the career. This trend can ultimately impact the standard of education they deliver. These concerns shed light on the importance of attracting individuals to the teaching profession who are genuinely passionate about education and have a strong desire to make a good impact on students' lives.

The absence of teaching and training resources was also noted as a diminisher of positive attitudes and misguided perceptions toward the profession of teaching. Without resources, the teacher may not receive optimum training or access resources vital for their classroom practice, consequently affecting their confidence and performance. Besides, the participants called out teaching institutions for not supporting new in-service teachers, not only with materials but also mental support, saying that it may to feelings of isolation and inadequacy among new teachers, affecting their motivation and enthusiasm for the profession. The participants also identified a potential challenge facing newly posted teachers, particularly during the transition from training to actual practice, saying that the dynamics of students, and their host school can instil pressure to meet ambitious goals, thus creating pressure and stress for teachers, influencing their attitudes towards their profession. Dealing with diverse student needs and behaviours can be challenging

for teachers, affecting their perceptions of the teaching profession. Additionally, the mention of curriculum implementation suggests that teachers may feel constrained by rigid curriculum requirements, which can affect their sense of autonomy and professional fulfilment.

The final theme addressing the first research question was "pedagogy and student engagement," and just like in the quantitative phase, the qualitative findings showed and explained how pedagogical principles influence performance. Participants were particularly concerned about the use of culturally relevant teaching frameworks to boost students' engagement. They expressed the need to understand the local culture and encouraged a movement from a uniform curriculum to a more personalized and culturally responsive teaching method, which can enhance student learning experiences and outcomes. The findings also revealed a push towards using culturally appropriate pedagogies to tailor their teaching methods to better suit the cultural and social realities of the region. This approach acknowledges the diverse cultural backgrounds of students and seeks to create a more inclusive and relevant educational experience (Chu, 2011).

Another important observation made from the qualitative data was the campaign towards teaching practices that address the issue of student engagement, particularly among male students. Unlike female students, male students in the Caribbean are often unenthusiastic about education, especially if they do not relate to the teaching practice being used or the curriculum (Figueroa, 2007). By recognizing these differences and implementing strategies to accommodate them, teachers can create a more engaging and effective learning surrounding for all students. This suggests a need for professional development and training to help teachers better comprehend and tackle the diverse learning requirements of their scholars.

4.6.1.3: Summary

Overall, quantitative findings suggest a notable connection between teachers' preparation and training and students' performance in the Caribbean. Despite their different level of education or training, the teachers agreed in unison that the different teacher training programmes provided in the Anglophone Caribbean shape teacher's attitudes and perceptions, as well as pedagogical principles and expose teachers to a vast number of teaching strategies, including issues of diversity within the classroom, throughout the teacher training progress that enables the teachers to properly engage male students.

The qualitative findings explain various aspects of teacher preparation and its implications for teaching practices and student outcomes. The findings highlight the importance of aligning teacher training with the actual needs and problems faced by teachers, bridging the gap between theoretical knowledge and practical application, and providing ongoing professional development and support. Participants expressed concerns about the selection criteria for teachers, the lack of resources and support for new and in-service teachers, and the challenges of transitioning from training to actual practice. Additionally, the findings emphasized the importance of culturally relevant teaching frameworks and pedagogies to enhance student engagement and improve learning outcomes, particularly among male students.

Therefore, the sample evidence from the mixed-method findings is strong enough to warrant the refutation of the first null hypothesis ($H1_0$) which suggests that there is no link between teacher training programs and male academic performances within the Anglophone Caribbean. The investigative findings revealed that the educational performance of masculine scholars in the Anglophone Caribbean is related to the quality of teacher training programmes.

4.6.2: Evaluation for Research Question 2

4.6.2.1: Quantitative Findings

Research question 2 was concerned with overall changes in the teacher training programmes and whether they can be amplified to boost gender awareness thereby impacting classroom practices and overall academic achievement. Here, the study attempted to understand if and what changes are needed, as well as what changes should be implemented to boost male performance. This question was addressed by comparing teachers' responses in three main areas, that is the effectiveness of the current teacher preparation and training programmes in addressing the deficiencies between male and female educational outcomes; whether changes in the structure, theoretical beliefs, and pedagogical practices impact classroom practice and male students; and the confidence level of whether the supposed changes will improve male performance.

The majority of teachers (42%) reported that they were not currently satisfied that the teacher training programmes adequately address the performance gap between males and females. In essence, this result indicates that while the teacher training programmes often equip teachers to manage diversity in the classroom, they do not adequately respond to the issue of male non-performance hence the need for change. Past studies have reiterated this finding in different ways, by expressing some dissatisfaction with the way the programmes are preparing teachers to effectively handle male students given their notable weakness in the classroom. (Bruns & Luque, 2014; Chetty, et al., 2014; Hanushek & Woessmann, 2012).

To further support these findings, a majority of the teachers (70%) believed that effecting changes in the underlying theoretical principles, beliefs and structuring of teacher training programmes can boost classroom practice and male academic performance. While the respondents were not satisfied that the current training programmes sufficiently address the gender performance gap, and called for changes, they were not confident that the proposed

changes will improve male performance. From the survey, only 24% of the teachers were confident enough while 34% leaned more toward the opposite opinion.

Findings from the second research question were further analysed on both multivariate and univariate levels to find out whether there was a great difference in regards to the teachers' training and experience level and the need to effect changes in the current teacher training programmes. The analyses were important in showing that the need for change and the changes suggested above have been long overdue. The findings showed that there was no great difference between the number of years of experience of the teachers and the variable for change. This shows that teachers, regardless of the period they received their training, feel that there is indeed the need to effect certain changes in the prevailing teacher training programmes if any improvement should be expected from the male students. Studies have revealed the need to incorporate gender-sensitive teaching practices in the Caribbean, that are responsive to the needs and interests of male students (Lamptey et al., 2015). This can include strategies such as active and experiential learning, collaborative group work, and the use of culturally relevant materials and examples. There have also been reports that the training programmes do not provide training and support for teachers to address issues related to gender bias and stereotypes, and to promote more equitable and inclusive classroom environments (Wasserberg, 2014). Therefore, the MANOVA and ANOVA findings from this section are consistent with popular opinion and cement the need to introduce changes in the current training programmes in order to adequately address the issue of male underperformance.

4.6.2.2: Qualitative Findings

In line with the quantitative findings, qualitative results for the second research question showed doubt among the participants on whether the current programmes could close the

performance gap. As a result, participants called for changes to the program. These sentiments were explained through two themes: Supporting Teacher Development for Improved Male Achievement, and Designing Gender-Responsive Strategies.

The theme, "supporting teacher development for improved male achievement" brought forth suggestions for change in teacher practice and training to raise gender awareness in education. Participants acknowledged the need to understand gender differences in learning, encouraging the need for teachers to address these differences to better tailor their approaches to meet the diverse learning needs of female and male learners, potentially leading to improved educational performance, particularly among male students. Similarly, the findings revealed that new teachers are yet to understand how boys and girls learn differently, therefore, highlighting the need to provide the new teachers with targeted support and resources for newly qualified teachers to help alleviate these challenges, enabling them to focus on enhancing their instructional practices and fostering better outcomes for male students (Harris & Sass, 2011). Studies have shown the importance of teacher preparation curriculums that incorporate strategies to inculcate teachers with strategies that enable them to understand how both boys and girls are socialized would help them better understand sexuality and gender, and avoid stereotyping within the learning environment (Barriteau, 2004; Clarke, 2007; George et al., 2009).

In comparing the teacher training process in the Caribbean to other countries, the findings found a noteworthy difference in the emphasis placed on content training and pedagogical training. These sentiments show how the current approach in the Caribbean may not adequately prepare teachers for the complexities of teaching, including understanding gender differences in learning. By re-evaluating and potentially restructuring teacher training programmes to include

more balanced content and pedagogical training, educators can better equip teachers to address the needs of male students and improve overall teaching quality (Feiman-Nemser, 2012).

There was also a call to increase support for teacher trainers. By providing adequate support and resources to teacher trainers, education systems can ensure that they are well-equipped to adequately prepare teachers to address the diverse needs of students, including addressing gender differences in learning (Ayvaz-Tuncel & Çobanoğlu, 2018). Besides, Participant 4 highlighted the need to promote a reflective practice to train educators to be open-minded, flexible, and able to interpret research to guide teaching practice. By promoting reflective practice among teachers, education systems can encourage continuous improvement and adaptation to meet the needs of all students, including male students who may benefit from tailored teaching approaches.

The need to tweak educational courses to address underachievement among male learners was also raised. This suggestion reflects a recognition of the pivotal role that teacher preparation plays in shaping educators' understanding and approach to teaching. By advocating for deliberate and comprehensive changes in core courses, the findings highlight the need for a systematic and proactive approach to addressing underachievement, particularly among male students. This approach coincides with research that emphasizes the importance of embedding strategies for gender-responsive teaching and learning throughout teacher training programmes (Chapin, Skovgaard, & Warne, 2020).

Moving forward, the fifth theme, "designing gender-responsive strategies" highlighted issues specific to male learners and poor performance in the Anglophone Caribbean. Participant 1 was notably vocal on the premise that the presence of male role models in the learning environment can positively influence male performance. The participant's sentiments highlight

the importance of male role models in educational settings. It suggests that the presence of male teachers can have a considerable effect on the educational achievement of male students. The findings of the study indicate that male students may benefit from having male teachers who serve as role models, regardless of their teaching approach. This emphasizes the importance of addressing the lack of male teachers in classrooms to better the academic outcomes of male students. Participant 4 partially attributed the lack or shortage of male role models to the fact that there are less male than female teachers in the Caribbean. This concern highlights a systemic issue in education: the underrepresentation of male teachers. It suggests that the imbalance in gender representation among teachers may have negative implications for male students. The absence of male role models in classrooms could impact male students' motivation and engagement, potentially contributing to their underachievement (Martino & Rezai-Rashti, 2012). These findings are compatible with Jha and Kelleher (2006) who discovered that female teachers are more prevalent in the Caribbean classroom than male teachers. Thus, female students have more ready role models than boys who often seek such outside the school. Similar sentiments were alluded to by Hunte (2002) when he postulates that the gender gap between female and male teachers might be a causal element to the superior performance of girls, whereas boys often encounter emotional deficits that might be obstructing their success. Addressing this imbalance and promoting greater male representation in the teaching profession could help provide male students with the role models they need to succeed academically (Martino & Rezai-Rashti, 2012).

The issue of marginalization was also brought up, with Participant 4 pointing out cases of marginalization within and outside school. This concern shows a crucial comprehension of the challenges encountered by young men in educational settings. By acknowledging the broader

societal context of marginalization, the participant displays awareness of the aspects that play a part in the underachievement of male learners. This awareness is essential for developing targeted interventions to address these challenges. The participant went ahead to provide a solution to carb marginalization, suggesting the development of curricula that are more appealing and relevant to boys' interests reflects an understanding of the need to adapt teaching practices to address the varied needs of learners. Advocating for teacher sensitivity to what motivates boys to learn explains the role of educators in creating inclusive learning environments.

4.6.2.3: Summary

In general, quantitative findings for RQ2 show that the current training programmes do not sufficiently address the gender performance gap, and therefore there is a need to change the overall structure, theoretical beliefs, and pedagogical practices of the current practices. However, changes in the teacher training programme alone are not enough to improve the educational outcome of male learners. The qualitative findings explored the need for changes in different areas of teacher training and educational practices to mitigate the underachievement of male learners. Participants emphasized the importance of understanding gender differences in learning and the need for teachers to be equipped with strategies to address these differences. They also called for more support and resources for both new and long serving teachers to help them become better aware of and satisfy the needs of male students. Additionally, there was a focus on promoting reflective practice among teachers to encourage continuous improvement and adaptation to meet the essential requirements of students. The findings stressed the significance of male role models in education and the need to address the insufficient number of male teachers in classrooms.

From these findings, it is safe to reject the second null hypothesis (H2$_0$), stating that improvement in teacher training programmes and practices to raise gender awareness will not affect classroom practices or raise male academic performances within the Anglophone Caribbean.

4.6.3: Evaluation for Research Question 3

4.6.3.1: Quantitative Findings

The third investigative question concentrated on the core beliefs and theoretical practices underlying teacher training programmes within the Anglophone Caribbean. For the quantitative phase, the researcher sought to establish how policymakers and curriculum developers of teacher training institutes describe the core beliefs and practices underlying the training programmes, and the theoretical principles used to determine the content and fundamental theories underlying the training programs. A MANOVA and ANOVA analysis was first administered to ascertain whether the teacher's gender had significantly influenced the beliefs and theories underlying teacher training programmes. The results indicated a significant difference between gender and teachers' opinions on the theories governing teacher training programmes. The results supply sufficient and solid evidence that male and female teachers share different perspectives in regard to the principles and theories underlying teacher training and in particular the role of gender in student performance. These findings are consistent with a few studies that have shown that female and male teachers may have different experiences and perspectives related to gender, based on their own personal and professional backgrounds Zuzoysky (2009). Teachers may have different levels of exposure to research and best practices related to gender and education and may interpret this information differently Zuzoysky (2009). Besides, different beliefs and attitudes related to gender roles and stereotypes can influence their perceptions of student

performance and the role of gender in education (Ojo, 2018). Finally, they may have different

levels of engagement and participation in professional training and collaboration, which may

impact their potential to learn from one another and share best practices (Zuzovsky, 2009).

Therefore, as the study explores the beliefs and theoretical underpinning guiding the teacher

training programmes, it is essential to bear in mind that male and female teachers may hold

different opinions in such matters, which might be an important factor to consider when talking

about male underperformance.

4.6.3.2: Qualitative Findings

The third research question explored the main beliefs and theoretical framework in

teachers' training. This enquiry was largely exploratory, which explains why it was mainly

explored qualitatively. Using two themes: Theoretical Models of Teacher Training and

Influences on Training Content, the qualitative findings gave a broader perception of the core

practices and theoretical models relating to the training programs in the Anglophone Caribbean.

Findings connected to the theme, "theoretical models of teacher training" highlighted a variety of

theoretical models for the training programmes. The reflective model was identified among the

models underpinning the training programme. This view indicates a programme philosophy that

values ongoing self-assessment and professional growth. It suggests an intention to create a

culture of lifelong learning among teachers. However, it raises questions about how this

reflective aspect is integrated into practical teaching methods and whether it adequately prepares

teachers for the complex and diverse challenges they may face in the classroom.

The participants further reported that the curriculum followed a student-centred approach,

but went ahead to express that despite the framework being student-centred, "… trainees are not

taught in a student-centred way." While the theoretical underpinnings prioritize student

engagement and personalized learning, there appears to be a discrepancy between theory and practice. This conclusion is synonymous with Bruns and Luque (2014) who noted that Caribbean teachers are mainly trained to employ interactive student-centred activities. While the learner-centred approach is recommended for teaching in the Caribbean, most teacher hardly utilizes this method, therefore, denying students the benefits that accompany the approach. Instead, they utilize more traditional learning aids and techniques (Bruns & Luque, 2014). The participant's (P3) comment, that trainees are not effectively taught in a student-centred manner, raises questions about the application of these standards in the programme. It suggests a potential gap between theoretical knowledge and practical teaching skills. The curriculum model was also identified by Participant 2 as an academic model: a description that highlighted the academic rigour of the teacher training programme in the Caribbean, aiming to provide trainees with a strong theoretical foundation and practical teaching experience. However, the participant also expressed dissatisfaction with the current model, suggesting that there may be issues with how the program prepares teachers for the realities of the classroom. The concerns raised about trainees' fear and lack of support during practicums indicate potential areas for improvement in the program (Flasch, Bloom & Holladay, 2016). Policymakers in the education sector must ensure that teacher training programmes provide adequate support and guidance to trainees during their practical teaching experiences.

There was a call to push for better approaches to training, in particular the practicum experience. This perspective suggests a recognition of the short-comings of the present model and a willingness to survey new ideas and approaches. It aligns with the need for continuous improvement and innovation in teacher education as evident in previous research (Cohen-Vogel

et al. 2016). The participant's call for developing other models reflects a desire to address the challenges faced by trainees and improve the overall quality of teacher preparation.

The second theme, "influences on training content," focused on the cultural influences that affect the training programs. They vocalize the need to integrate a more Caribbean-centric approach and do away with the currently dominant Euro-centric practice. In criticizing the European-based teaching approach that guides most curricula within the Anglophone Caribbean, Participant 1 explains that such practice does not contemplate the context specificity, culture, and demands of the Caribbean. This adaptation suggests that there is a recognition among participants of the limitations of adopting theories developed for the global north in the Caribbean context. The critique opens up a dialogue about the importance of incorporating indigenous perspectives into teacher training programmes to make them more culturally relevant and effective (Webb, & Mashford-Pringle, 2022). The third participant (P3) also expressed frustration with the dominance of European philosophical underpinnings in Caribbean education by highlighting the challenge of decolonizing education in the Caribbean. This suggests that efforts to move away from Euro-centric perspectives are necessary to ensure that education is more relevant and meaningful to Caribbean students. It also emphasizes the urgency of centring Caribbean voices and experiences in educational discourse and practice. These findings are mirrored in different past studies that have postulated that the Caribbean learning traditions are still under the philosophical underpinnings of their colonizers (Coates, 2012; Peters, 2001; Schwarz, 2003). Coates (2012) also asserts that even after the British administrative rule, which lasted for over two hundred years, the educational context within the English-speaking Caribbean states still reflected the learning traditions of their previous colonist. Therefore, it is

important to acknowledge and challenge the historical legacies of colonialism in shaping education systems in the Caribbean.

The participants pushed for a change towards a more Caribbean-based approach by emphasizing the need to reframe the philosophy of teaching in the Caribbean to better reflect the region's historical and cultural context. There is a desire among participants to move towards a more culturally responsive approach to education that reflects Caribbean realities and perspectives. By embracing indigenous perspectives, education can be more inclusive and relevant to Caribbean students. The findings also suggested the incorporation of more indigenous theoretical principles into the training programmes to boost cultural relevance. The integration of local perspectives can drive education to be more meaningful and relevant to Caribbean students (Webb, & Mashford-Pringle, 2022). It may enable teacher training programmes to better equip educators to address the diverse needs of Caribbean students.

4.6.3.3: Summary

The quantitative phase used a MANOVA and ANOVA analysis to examine how policymakers and curriculum developers describe the core beliefs and practices, and the theoretical principles used to determine programme content. The results indicated a notable contrast between male and female teachers' perspectives on the theories governing teacher training programmes, particularly concerning gender and student performance. These findings align with existing research showing that gender can influence teachers' experiences, exposure to research, beliefs about gender roles, and engagement in professional development. Understanding these differences is crucial for addressing male underperformance and improving teacher training programmes in the region.

The qualitative findings revealed a variety of theoretical models, including a reflective model and a student-centred approach, embedded within the training programmes. However, there seemed to be a gap between the theoretical underpinnings and their implementation in practice, particularly regarding student-centred teaching. Participants also highlighted the dominance of an academic model in the curriculum, suggesting a need for improvement in preparing teachers for classroom realities. There was a call for better approaches to training, including the practicum experience, indicating a recognition of the limitations of the current model and a desire for innovation. Participants also advocated for the integration of indigenous perspectives to make training programmes more culturally relevant. These findings underscore the importance of aligning teacher training with the Caribbean context and promoting culturally responsive education. They also highlighted the need for ongoing efforts to decolonize education and ensure that training programmes reflect the unique needs and perspectives of the Caribbean region.

4.6.4: Evaluation for Research Question 4

4.6.4.1: Quantitative Findings

As an extension to the earlier research questions, RQ4 queried how the changes in the overall structure, theoretical beliefs, and pedagogical practices underlying teacher training programmes in the Anglophone Caribbean impact classroom practice and by extension male academic performance. A One-Way ANOVA test measures whether or not there is a notable difference between the participants' gender and the variable on whether or not changes in teacher training programmes impact male performance. The ANOVA results revealed no considerable distinction between male and female participants and the variable of change in teacher training programmes and how it affects performance. This finding indicates that both female and male

teachers believe that the current training system is flawed and could use some adjustments to improve classroom practice and boys' performance. These findings are supported by previous research that has illuminated the common dissatisfaction among all teachers with the current programmes and policies governing teacher training programmes in the Anglophone Caribbean. In their study, Younger, Warrington and McLellan (2002) observed that current training programmes do not adequately address the diverse needs and interests of students, particularly boys who may require different approaches to learning. The teachers may have identified gaps in the training related to gender and education and may feel that there is a need for more targeted and comprehensive training in this area. Besides, a frequency distribution test on the question of whether the changes will make a difference revealed that most of the teachers (70%) agreed that the change was needed.

4.6.4.2: Qualitative Findings

In exploring how changes in the teacher training programmes can boost the academic performance of male students, qualitative findings revealed some very important insights on the matter under the theme "desired changes and outcomes." As if speaking in unison, the participants expressed their support towards strategic changes in different areas of the practice to improve the outcome of learning. There was a call to change the academic model to a more learner-centred approach, with Participant 2 emphasizing the need for teachers to be equipped with the necessary skillsets and support to engage students effectively. The emphasis on a learner-centred approach aligns with contemporary educational theories that prioritize student engagement and active learning (Koehler & Meech, 2022). By focusing on improving teachers' classroom practices, this change could lead to more effective teaching strategies and ultimately improve student outcomes. Findings also revealed a strong criticism against the academic model

practised in the Caribbean region, with participants showing their dissatisfaction with the model, particularly with the practicum component. The findings suggest the exploration of alternative models, which could lead to developments in teacher preparation and support, ultimately enhancing classroom practices and student achievement.

The use of euro-centric practices was also frowned upon, highlighting the need to change towards more localized education practices that students can relate to better. The issue of Euro-centric influences on teacher training programs in the Caribbean is a complex one with significant implications. The reliance on theories and practices developed in global north contexts may lead to a disengagement between the training provided and the requirements of Caribbean educators and students Bailey, 2019). Furthermore, the perpetuation of Euro-centric perspectives may contribute to a sense of cultural inferiority or alienation among Caribbean educators, hindering their ability to connect with their students effectively (Menon, 2023). This issue accentuates the importance of incorporating Caribbean-centric perspectives and practices into teacher training programmes to ensure their relevance and effectiveness in the local context. Addressing this issue requires a re-evaluation of the theoretical foundations and pedagogical approaches used in teacher training. It calls for a more inclusive and culturally responsive approach that acknowledges and incorporates the rich diversity of Caribbean cultures and experiences (Menon, 2023).

The findings identified that new teachers experienced challenges as they made the shift from training to practice, for instance in cases where the newly absorbed teachers are tasked with executing a packed curriculum despite their minimal knowledge and experience. A packed curriculum can limit teachers' ability to implement effective teaching strategies. The findings advocated for a more focused approach to teacher training so that teachers get out of training

when they are well prepared. By addressing this issue, educators can better prepare new teachers to overcome these challenges and foster critical thinking skills in students.

Lack of resources to support quality education was also highlighted as a potential area for change. The findings suggested the need to support teachers during their practice, stating that even high-quality teachers may struggle without proper resources. Adequate resources are crucial for effective teaching and learning, and without proper support, even the most skilled teachers may struggle to deliver high-quality education. Providing resources can enhance teachers' ability to create engaging lessons and positively impact student learning outcomes. Furthermore, participants echoed the importance of not only supporting the teachers but also teacher trainees, highlighting the importance of ensuring they are well-equipped to produce quality teachers. Supporting teacher trainers is essential for maintaining the quality of teacher training programmes. By providing resources and training, teacher trainers can better prepare new teachers, leading to improved classroom practices and student outcomes (DeMonte, 2013).

The final call for change concerned the shortage of male role models to impart positive change to male learners. The finding regarding the positive impact of male teachers on student performance underlines the significance of male role models in education. The participants' emphasis on the presence of male teachers in association with improved performance suggests a clear need for greater male representation in the teaching profession. This aligns with existing literature that highlights the importance of diverse role models in educational settings (Martino, & Rezai-Rashti, 2012). Male teachers can provide valuable mentorship and support, especially for male students who may benefit from seeing themselves reflected in their educators. However, it is critical to note that the impact of male role models is broad and may vary based on individual teaching styles and approaches. Nonetheless, the findings suggest that increasing male

representation in teaching could be a positive step towards addressing performance gaps and enhancing the overall educational experience for students.

4.6.4.3: Summary

The quantitative results for Research Question 4 showed that there was no significant difference between male and female participants regarding the impact of changes in teacher training programmes on male academic performance. This suggests that both male and female teachers believe that current training programmes need adjustments to improve classroom practices and boys' performance. The findings align with previous research indicating dissatisfaction among teachers with current programs and policies, particularly in addressing the diverse needs of students, including boys. The majority of teachers agreed that changes are needed, indicating a consensus among educators for reform in teacher training programmes.

The qualitative findings provided valuable insights into potential changes needed in teacher training programmes to enhance the academic performance of male students in the Anglophone Caribbean. Participants unanimously supported strategic changes, particularly in transitioning from an academic model to a more learner-centred approach. This shift aligns with modern educational theories emphasizing student engagement and active learning. Criticism of the euro-centric practices in the region underscored the need for more localized education practices that students can relate to better. Participants also highlighted challenges faced by new teachers during the transition from training to practice, emphasizing the need for focused training to prepare teachers adequately. The lack of resources was identified as a significant area for improvement, with participants advocating for more support for teachers and teacher trainees. Additionally, the shortage of male role models in education was recognized as a factor affecting male students, highlighting the importance of increasing male representation in the teaching

profession. Overall, the findings suggest that addressing these areas for change could lead to improved classroom practices and student outcomes in the Anglophone Caribbean. These findings provide additional grounds to refute the second conjecture hypothesis ($H2_0$) in favour of the directional hypothesis ($H2_1$). The evidence from the investigation is compelling enough to substantiate that improvement in teacher training programmes and practices to raise gender awareness is related to improved classroom practices.

4.6.5: Evaluation of Findings with Theoretical Framework

The findings across the research questions can be aligned with the different theories relevant to the literature. As a whole, investigating the correlation between teacher training and students' performance hinged on the notion that teachers' instructional methods and perception of learners, as well as the basic structuring of the educational system, influence students' overall achievement and performance (Anderson, 2016; Osborne, 2001). In this sense, the study's findings support Anderson's (2015) optimal resource theory (ORT), which claims that informed teaching and best practices on the part of teachers will improve students' academic success. The findings reveal that while the teaching programmes equip the teacher with a vast number of teaching strategies, including issues of diversity within the classroom, the programmes do not sufficiently address the gender gap, thus the need for change in the overall structure of the programme. The findings from the study demonstrate that the core practices and theoretical frameworks underpinning the programs do not favour male students. The programme still employs a European style of learning which does not favour Caribbean students considering the cultural difference between the two geographical regions. The participants suggest that for improved performance, change should be implemented to the current program in these key areas.

This is in line with ORT which points out that for effective change in performance, the programmes need to be revamped with suitable additional resources.

In addition, John Ogbu's cultural-ecological perspective (Ogbu 1992), and the stereotype threat and intellectual test performance (Steele, 1995) were also paramount to this study. Ogbu's theory suggests that the poor performance of a minority group of students can be influenced by both teachers and society's perception of such group and how the group react to such treatment (Ogbu, 1992). An argument that was supported by Steele's stereotype theory. These two theories suggest that male performance may be affected by cultural stereotyping and discrimination against males. However, the findings drawn from the research questions suggest that the theory does not fully explain or account for the current conditions and circumstances for the teacher training programmes in the Anglophone Caribbean. Nonetheless, it is in line with Jennings's (2001) argument that boys in the Anglophone region often undergo pressure to be tough due to the social dynamics that are present in the region. These are often in total defiance of the goals of the school system leading to the alienation of boys and by extension poor performances. While the literature puts this as a possibility for the poor academic performance of boys, the study reveals a finding that is significantly incongruent with what the theory attempts to predict. The findings tie the poor performance of boys to other reasons not relating to how male students are perceived by the system. For instance, the current curriculum does not adequately cater for boys' academic needs. In this regard, the findings show that male students need a more hands-on approach curriculum. To further refute this theory, one participant mentioned that "… it's not that we are actively discriminating against them it is just that they are not excited about the curricula."

4.6.6: Summary

In summation, the findings of the investigation illustrate that there exists a connection between teachers' overall training and learners' educational outcomes. It was also clear from the findings that presently teacher training programmes do not adequately address gendered education as it pertains to teaching and learning thus exacerbating the gender performance gap, and therefore there is a need to change the overall structure, theoretical beliefs, and pedagogical practices of the current programmes. However, changes in the teacher training programme alone are not enough to improve the performance of male students. Thus, an overall change to the entire system of education and instruction, especially, the curriculum to augment gendered teaching and learning is necessary.

4.7: Chapter Summary

The focal aim of the chapter was to give the product of the analytic processes of this two-phase explanatory sequential mixed-method study. The chapter was the backbone of the study, and it presented the products of statistical analyses that have been conducted in the study. It also answered the probing questions and aligned the results to the purpose of the investigation offered in Chapter 1, as well as demonstrated why it was essential to undertake the research in the first place. The results of the investigation were also connected to the literature reviewed and the theoretical framework. To accomplish this objective, the study first assessed the quality and credibility of the instruments and tools utilized within the study to gather the data, including the survey instrument and the interview tool, to ensure that accurate and quality results are obtained before analysing, presenting, and discussing the empirical findings derived from the data that was collected from the previous chapter of the research. Six main topics were discussed throughout the chapter under the following subsections. The first subsection was the introductory section, followed by the trustworthiness of data section, the dependability and

correctness of data section followed by the review of the data gathering and analysis processes subsection coming next and the final subsection was the results of findings and evaluation of findings.

The Chapter set off with an introduction section which gave a recap of what the entire chapter will entail which was followed by an exploration of the trustworthiness of the data. Examining the trustworthiness of quantitative data ensured that the evidence and results presented herein, in addition to everything that the investigator had done in designing the research instrument and tools, coordinating the investigation, and promulgating the results of the research, were done correctly to ensure quality research. To confirm the trustworthiness of the process, the researcher used key components, including credibility, transferability, and confirmability. The credibility of the qualitative phase was ensured using the methodological triangulation approach, which comprises the collective use of multifarious research methods, that is, quantitative and qualitative data collection methods. The researcher ensured transferability by providing a rich account of descriptive data concerning the research design, sample size, and demographics. Confirmability was ensured through an external audit.

This was followed by reliability and validity measures, that is often a major concern for both numerical and narrative research techniques. First, the study's validity was measured using different strategies, including content validity, face validity, and construct validity. Reliability, on the other hand, was measured using an internal consistency test known as Cronbach's Coefficient Alpha. The coefficient alpha readings showed a strong reliability level between variables indicating that the measurements used have internal consistency reliability.

The resulting data from the study were analysed both quantitatively and qualitatively and presented systematically as per the research questions and hypothesis. Quantifiable data were

evaluated using descriptive statistics, and then the variables were also analysed at multivariate and univariate levels (MANOVA and ANOVA). Qualitative facts were coded and classified into 8 main subject matters addressing each of the research inquiries.

The present study sought to analyse research data to determine how teacher training programmes in the Anglophone Caribbean relate to the educational underachievement of masculine students in the region. The overreaching argument posed by the study was that the inadequacies in the current teacher training programmes within the Anglophone Caribbean contribute to the inefficiencies within the school system that have aggravated the issue of poor performance among male students. Using a population sample of 100 participants for the numerical phase and 4 participants for the qualitative phase, the mixed study produced several important results relating to the issue of teacher preparation programmes and male underachievement in the English-speaking Caribbean region.

In particular, findings for the first research question, which aimed at identifying the nature of association between teacher training programmes and boys' underachievement, revealed a strong correlation between the teacher training programmes and male performance. MANOVA and ANOVA tests performed to confirm significant differences between teachers' training or education level and their thoughts on whether the level of training they received influenced the performance of male students showed no significant difference between these variables. This result implied that at any level of training, the training programmes offered directly influence the way boys learn and perform. Qualitative findings explain various details of teacher preparation and its implications for teaching practices and student attainment. The results highlight the importance of aligning teacher training with the actual requirements and hindrances faced by teachers, bridging the gap between theoretical practical application and theoretical

comprehension, and providing ongoing professional growth and support. Therefore, the sample evidence was strong enough to warrant the rejection of the first null hypothesis ($H1_0$). These findings indicated that the educational performance of male learners in the Anglophone Caribbean is connected to the pre-eminence of teacher training programmes.

The second research question assessed what changes could be made in the current teacher training programs to improve poor performance among male students. Pertaining to the results from both the quantitative and qualitative data analysis the current training programs do not sufficiently address the gender performance gap. Therefore, there is a need to change the current teacher training programs' overall structure, theoretical beliefs, and pedagogical practices. Furthermore, a MANOVA test performed to assess whether there was a substantial distinction between the number of years of teaching experience and teachers' overall perception of the general need for change showed no significant difference between the variables. This result implies that the need for enacting change to the existing teacher training programs has been long overdue. The qualitative findings revealed the need for change, particularly in the curriculum, pedagogical strategies, and the number of male instructors within the classroom to motivate boys to learn and perform better. From these findings, it was safe to reject the second null hypothesis ($H2_0$) because, as far as these findings are concerned, improvement in teacher training programmes and practice to raise gender awareness is related to improved classroom practices.

Findings relating to the third research question revealed common frustrations from the participants regarding the current beliefs and practices underlying the existing Anglophone Caribbean teacher training programmes. The inferences from both the quantitative and qualitative data indicated that the current teacher training beliefs and practices in the region do not favour the learning style of male students, thus negatively impacting their performance. The

study concluded that the potential issues contributing to male underachievement lie in the euro-centric principles and pedagogical practices applied in most classrooms. They are currently not formulated to cater to the intricate exigencies of male learners in the Anglophone Caribbean region.

The fourth investigative question was intended to examine how the changes in the overall structure, theoretical convictions, and educational practice of the existing teacher training programs can positively affect the performance of male students. Following the quantitative and qualitative analysis of the respondent's impression of the proposed changes, the study found a few barriers relating to the structure, theoretical beliefs, and pedagogical practices in the current training programmes that prevent male students from reaching their full academic potential, thus leading to their poor performances. These findings provide additional ground to accept the alternative hypothesis ($H2_1$) thus refuting the second null hypothesis ($H2_0$) due to the overwhelming evidence supporting that improvement in teacher training programmes and practice to raise gender awareness is related to improved classroom practices.

The results from the research questions are tied with the optimal resource theory, which is based on improving learners' academic performance through informed teaching and best practices. However, cultural-ecological perspective theory and stereotype threat, and intellectual test performance theories that suggest that male performance may be affected by cultural stereotyping and discrimination against males could not be widely explained by the findings of the investigation. The final chapter five will illustrate the discussion, implications, recommendations, and overall conclusions drawn from the findings of this research.

5. CHAPTER 5: IMPLICATIONS, RECOMMENDATIONS, AND CONCLUSION

5.1: Introduction

Chapter five of the investigation concentrated on explaining the implications of the study's results while tying them to the literature covered in Chapter 2. It also gave suggestions for prospective inquiries into the issue and a general summation of the entire dissertation. On the whole, the statement of the problem for the investigation arises from the scarcity of data exploring the correlation between teachers' training and learners' overall academic attainment in the Anglophone Caribbean. Despite a plethora of studies concerning the presumed male marginalization and educational underachievement within the Caribbean, the region is still struggling with the issue of gender inequalities within education. Notwithstanding such overwhelming concerns regarding boys' lower academic performances, the dismal number of studies examining how males learn is quite shocking, with even fewer studies that have focused on the role that teacher training and preparedness might have on boys' educational outcomes. The lack of such information is unfortunate because such data could expand the discourse on male underachievement beyond peripheral factors. Therefore, not addressing such a gap in the literature surrounding male underachievement within the region would be social injustice.

Therefore, the central objective of this two-phase explanatory sequential mixed method study was to collect quantitative data from preservice and in-service teachers from four Anglophone Caribbean countries (Jamaica, Guyana, Trinidad and Barbados) and qualitative study exploring the programs and policies of top teacher training institutions focusing on the programme directors. Though the overarching goal or aim of the study lends itself to a

correctional quantitative approach as a result of its relational tendency between the two, the mixed-method approach is more suitable for a study of this nature making it more integrating.

The quantifiable data was amassed by way of a web-based survey that was intended to explain the issue depicting it as it is in its current state. While the analytical (qualitative) data was gathered by way of a semi-structured interview to further explore the issue by attempting to explain why the situation is the way it is. The study directly examined service and preservice teachers' perception of how boys learn and whether or not teacher training programmes are geared towards equipping them with the necessary strategies needed to engage male learners thus enhancing boys' educational outcomes. By so doing the study intended to build on as well as advance the prevailing literature and cognitive content on male underachievement while widening the discourse.

The study's main limitations encompassed potential biases that may impact the validity and generalizability of the findings. Utilizing snowball sampling introduced a sampling bias, with the convenience sample possibly not entirely representative of the broader population of teachers in the Anglophone Caribbean. Self-selection bias was a concern, as participants who chose to engage might differ from those who declined, influencing the external validity of the study. Response bias, a common concern in surveys, was acknowledged, given the possibility of participants providing socially desirable responses, particularly when known to the researcher. To address potential researcher bias, steps were taken, such as member checking and data triangulation, to enhance credibility. Contextual bias emerged from the study's focus on four specific Caribbean countries, limiting generalizability to other regions due to unique educational contexts. Acknowledging these biases is crucial for interpreting and applying the study's findings accurately. To manage this limitation, the researcher carried out extensive verification

procedures such as member checking, extensive description of cases, and triangulation of data sources to limit the issue of bias.

Several ethical principles were used to help establish the ethical recommendations of the investigation. First, in accordance with the requirement put in place by the Institution Review Board (IRB), the researcher sought permission to carry out this research through the Institution Review Board (IRB). A research ethics application form (REAF) for this doctoral research was filed and submitted to UNICAF University Zambia for review. The researcher also incorporated informed consent forms which were approved by the university that outlined the rights of the participants and stated the obligations of the primary researcher, as well as the agreement of the respondents to part-take in the inquiry. The gathering of the data during the quantitative part of the investigation was confidential and anonymous. Likewise, the qualitative part of the study was also confidential and anonymous except to the researcher. To protect the respondents' identity, the researcher used numerical coding and kept this information confidential. All feedback collected by the researcher was saved in password-protected files and is meant to be deleted one year after the study is published.

This chapter sets off by explaining the implications of the investigation study, followed by the implications for practice. The discussion was thus organized around each research question and the hypothesis, where appropriate. Each research question was answered and discussed separately as well as the inferences that were drawn. Evidence from the actual research findings was provided to support all the conclusions drawn. Whenever appropriate, the prospective weaknesses that might have influenced the interpretation of and the research findings were also discussed. Besides, the results of the investigation and the inferences drawn were also situated into their appropriate framework through a description of how they respond to the

study's general problem, and how they fit with the objective of the study, the overall alignment

with the theoretical frameworks, how they demonstrate the applicability of the study and advance

the prevailing writing as was discussed earlier under the review of literature section. A discourse

was also centred on whether the results were expected given the previous literature. The

unexpected or conflicting results will be discussed. The section will then discuss the implications

of the practice, and discuss in the setting of the re-examination of the previous literature, how the

current study contributes to and makes advancement to the prevailing body of information on

this problem under review. The chapter will then proceed to discuss the recommendation for

application, followed by the recommendations for future research. All the recommendations

suggested will be underpinned by the findings of the research and framed within the literature

from Chapter 2.

Finally, this chapter will close with a concluding paragraph, to sum up, the entire

investigation. The conclusion will essentially provide the take-away message of the whole thesis

and place much importance on the findings of the investigation and what the findings mean

concerning the theoretical framework guiding the study and aforementioned studies or methods

grounded on the nature of the investigation conducted. The researcher will then situate the

findings into the appropriate framework through a description of how they respond to the study's

general problem, and how they demonstrate the applicability of the study and advance the

prevailing writing or contribute to practice.

5.2: Implications of Research Study

The main reason for conducting this investigation was to examine the connection

between teacher training programmes and male performances within the Anglophone Caribbean.

While many studies have looked at the issue of male marginalization and educational achievement within the Caribbean, there is a scarcity of research exploring the issue in conjunction with the region's teacher training programmes. Therefore, the overreaching argument of the study was that inadequacies in the current teacher training programmes within the Anglophone Caribbean contribute to inefficiencies within the school system that have exacerbated the issue of poor performance among male students. To satisfy this objective the study intended to respond to the following four main inquiries 1) Are there significant relationships between teacher training programmes and male academic performances? 2) How can teacher training programmes and practices in the Anglophone Caribbean be augmented to raise gender awareness and impact classroom practices and improve male academic achievement? 3) What are the core beliefs and theoretical practices underlying teacher training programmes within the Anglophone Caribbean? 4) To what extent will changes in the overall structure, theoretical beliefs, and pedagogical practices underlying teacher training programmes in the Anglophone Caribbean impact classroom practices and by extension male academic performances? As such the section will focus on the repercussions of the results centred specifically on the main investigative queries as well as provide a run-through of how the inquiry contributed to and built on the present body of literature on the subject as well as the implications of the results for practice.

5.2.1: Research Question 1

Concerning question 1, the investigation establishes that there exists an association between teacher preparatory programs and male educational performance. The entire premise of the research was based on exploring the connection between training programmes and male performance. Thus, it was hypothesized that the performance of male students was related to

teacher training programmes. Different researchers agreed that teacher training programmes are uniquely designed to ready students for their future by equipping them with the important knowledge needed to excel academically (Clotfelter, et al., 2007; Harris & Sass, 2011; Schroeder & Adesope, 2015). The orchestration of teacher training programmes is based mainly on the creation and reception of knowledge inside the classroom through teacher and student actions as well as instructional and learning resources. (Harris & Sass, 2011). To grasp the essence of how the action of teachers and how teacher training programmes in the Caribbean impact the teaching practice and students' performance, the study answered the following three sub-questions: How do teachers' perceptions towards and their points of view about the teaching and learning process connected to the theoretical foundations underlying their training? What impact do teachers' pedagogical principles have on students' achievement? To what extent are teachers exposed to a vast number of teaching strategies during the teacher training progress that will enable them to properly engage male students?

As expected, when comparing teachers' responses about whether their attitudes and perceptions of teaching relate to the theoretical foundations underlying their training, respondents answered affirmatively. The findings highlighted challenges in the teaching profession, including teachers lacking innate traits for effective classroom management and some entering without genuine interest. These factors impact the quality of education delivered. Participants noted the importance of attracting passionate individuals to teaching and highlighted the lack of resources, institutional support, and pressure faced by new teachers. These challenges influence teachers' attitudes and perceptions, emphasizing the need for improved support and flexibility in curriculum implementation. These results indicate that teachers' attitudes and their perceptions towards teaching, as evident inside their classroom and their general teaching

practice stem from the theoretical foundations of their teacher education. In general, student participation and feedback inside the classroom are directly affected by the attitudes and perceptions of their teachers (Clarke, 2005).

These findings contribute to the previous studies where it was noted that second-order barriers like teacher attitude, beliefs, confidence, and knowledge directly impact teacher productivity (Burns, 2011; Ojo, 2018; Wirth & Perkins, 2013). Ulug, et al. (2011) note that the educational achievement of scholars is not solely contributed to by the result of their industriousness, but is also influenced by a myriad of circumstances and primarily the teacher's attitude. Effective teacher training does not merely concentrate on the familiarity with or comprehension of content and the prowess of the teacher, but likewise on the teachers' overall perspective as this is vital to ensuring that all learners gain the requisite insight necessary to achieve elevated levels of academic performance (Clifford, 2006). Teachers' attitudes determine how they consult with their students and the extent to which they value the consultation. This is in return reciprocated by a favourable attitude from the learners towards their teachers, consequently leading to improved academic performance. Presently, educational achievement is not only a matter to be resolved by good pedagogy but also revolves around the perceptions of the teacher concerning instruction and the students, hence the teachers' approach and overall perspective contribute very prominently to the educational outcome of learners (Shah, 2009). Teachers' positive attitudes often influence the inspiration and attitude of the scholars towards school work, their self-confidence, personality development, and consequently their performance (Ulug et al., 2011). Ataunal (2003) further supplements these claims by explaining that teachers, through either negative or positive attitudes in communicating with students impact the students' creativity and consequently impact their academic performance.

The other question enquired whether teachers' pedagogical principles have an impact on students' achievement. An important factor that is enmeshed with teacher training and student performance is the pedagogical approach applied in classroom practice. Pedagogical practices are generally the use of different learning theories and teaching activities that support content delivery and are acquired by teachers during their teacher training. To this end, the quantitative enquiry of the study revealed that pedagogical principles acquired in teacher training impact the performance of students. Key studies referenced in the literature review showed that the components of pedagogy determine the content delivery abilities of teachers, which in turn determines how well their students perform inside the classroom (Hardman, 2016). Guerriero (2014) observed that pedagogical practices significantly influence the academic success and personal development of students. He further pointed out that more than course content teachers' pedagogical practices often impact the academic success of learners (Guerriero, 2014). Shulman (2004) also explained that gaining wisdom in the teaching practice calls for the trailing and evaluation of pedagogical knowledge towards achieving mastery experiences.

In the case of the Anglophone Caribbean, the study showed that the pedagogy practices are inadequate, thus negatively impacting students' performance, particularly the performance of male learners. The findings underscored the vitalness of culturally relevant pedagogy in enhancing student engagement and learning outcomes. Participants advocated for a shift from a standardized curriculum to a more personalized and culturally responsive take to address the diverse ethnical backgrounds of learners and create a more all-encompassing learning environment.

The study further highlighted the need to address the issue of student engagement, particularly among male students who are often disengaged from education. By recognizing

these differences and implementing strategies to accommodate them, teachers can create a more

involving and effective learning environment for all learners. These results suggest that student

success is mainly achieved by way of pedagogical practices that enable the students to be active

contributors in the instructional and learning process. Participatory pedagogy practice enables

teachers to influence their student's academic performance in various ways. Nonetheless, not

every teacher uses the interactive teaching model. The choice of the teaching approaches

employed by teachers is influenced by different factors and the level of student participation.

During the interviews, the participants reported that the Caribbean teacher training

programmes do not recognize students' diversity. In line with previous works, a major form of

pedagogy frequently used in Caribbean classrooms is "back to the basics: a didactic, skill, and

drill curriculum that jams content knowledge to fit the tests" (Bartle, 2012, p.152). Boys have

different learning styles than female students. Particularly in the Caribbean, studies have found

male students to thrive better in hands-on learning where students learn by participation and

engagement with the subject matter as opposed to simply listening to a teacher or instructor (Ilori

& Ajagunna, 2020). The best approach towards such students would therefore be participatory

pedagogy, which practice enables the teachers to influence their students' academic performance

in important ways. The deficit of qualified and well-trained teachers in most schools in the

Caribbean regions has seen teachers employing the most common and traditional pedagogical

methods like lecture method, and drilling and questioning, which have been reported to

negatively impact learning achievement. Bartle (2012) explains that teachers in these regions

lack the necessary training and skills to employ "authentic pedagogical practices" which are

centred on students' active involvement in higher and lower-order cognitive skills, and real-life

learning. This explains why male learners keep on lagging in performance in comparison to their female counterparts.

The research question further queried whether teachers in the Caribbean are exposed to a vast number of teaching strategies throughout the teacher training progress that will enable them to properly engage male students. In this regard, the study found mixed reactions concerning whether or not teachers in the Anglophone Caribbean are exposed to a wide variety of teaching strategies during their training programmes to enable them to effectively engage with male students. While a good number of participants (35%) expressed little faith in the current teacher preparatory programmes in regards to equipping educators with the requisite strategies needed to engage male students, most participants (46%) expressed their agreement on the issue, and 19% remained neutral. Qualitative findings revealed a disconnect between training and teacher retention, indicating a need to address factors influencing teacher turnover. Concerns were raised about the short duration of teacher practice, potentially affecting the quality of education. Participants also highlighted a gap between teacher preparation and in-service training, emphasizing the need to align training programmes with teachers' actual needs. They called for practical, hands-on experience and ongoing professional development to support teachers throughout their careers, ensuring the quality of education delivered.

From these findings, the study concluded that while the training programmes might be exposing teachers to a vast number of teaching strategies during the teacher training process to enable them to properly engage with male students, some teachers may not be effectively utilizing their knowledge to impact learners. Noteworthy, past studies have shown a worrying trend as it relates to the value of educator preparation and educational training in the Anglophone Caribbean, as it pertains to whether they are adequate to tackle the prevailing performance

disparity between male and female learners (Jennings, 2001; Miller, 2000). Steinbach (2012) notes that despite the individual and collaborative reform efforts among Anglophone countries and agencies, teacher preparation and educational training within the Caribbean's sub-regions has hardly developed much since their colonial days. The author best describes the region's teacher education system as an amorphous array of policies and programmes that reflect its evolvement over the years but coherence to encourage a holistic comprehensive systemic identity. Armstrong et al. (2005) note that despite the frequent expression of concern over the standard of education offered in the Anglophone Caribbean and the call to professionalize teaching, issues, and concerns about teachers are mainly addressed from the perspective of wages and the terms and conditions of service instead of on the functional perspective of the teachers' professional development. This confirms the common view that reforms in teacher education in developing countries are stalled by the legacy of colonial pasts.

The researchers also note that a lack of teacher training indeed influences content delivery abilities and the overall performance of students and that teachers with minimum or no training had limited content area knowledge of the subject matter that is taught by them, consequently repudiating learners the full potential of performing well in those subjects. This explains why despite going through training, teachers in the Caribbean region are still not well-prepared to deal with the low academic performance of boys.

While most participants indicated that the teacher training programs in the Anglophone Caribbean are well structured to prepare teachers for the classroom, a good number of the participants still refuted these claims. However, in correspondence with some recent studies, as discussed in Chapter 2, more and more teacher training institutions are now on par with other training institutions in the developed world (Sorour, et al., 2017). However, teachers in the

Caribbean region persist in using the most common and traditional pedagogical methods such as chalk and talk, lecture method, and drilling and questioning, which have been reported to negatively impact learning achievement. These findings demonstrate that the low academic outcomes of male learners in the past cannot be entirely tied to the quality of teaching strategies that teachers are exposed to during their training.

Overall, due to the narrow scope of this study, it did not capture whether the attitudes and perceptions of teachers were detrimental to student performance, particularly for male students. However, Ertmer et al. (2012), posited that teachers' perspectives and perceptions are influenced by "first-order barriers such as the availability of resources and appropriate training" (p, 58). While the findings point toward pedagogy as one of the principal barriers to male academic achievement, teachers indicated a positive attitude towards the quality of teaching strategies that teachers are exposed to during training.

5.2.2: Research Question 2

The subsequent investigative question enquired how teacher training programmes and practices in the Anglophone Caribbean can be augmented to raise gender awareness and impact classroom practices and improve male academic achievement. Despite the significant improvements made in teacher training programmes (Sorour, et al., 2017), some key areas affecting male performance in the Caribbean remain unexplored. In harmony with existing research, the result of this investigation supported the necessity of augmenting teacher training curriculums in the Caribbean to positively impact male academic achievement (Bruns & Luque, 2014; Hanushek & Woessman, 2012). This means that the current programmes could use some improvement if they were to help in increasing the performance of male students. In line with this conclusion, previous research has noted that the calibre of training and trained instructors in

the Caribbean is low. A study conducted by Sorour, Goda and Mine (2017) and Sylvester (2008) concluded that countries in the region have been reporting poor quality programmes and low success rates among students. Sylvester (2008) proceeds to use the example of Jamaica, where physics and mathematics are reported to suffer mainly due to the shortage of qualified and well-trained teachers. The researchers also note that a lack of teacher training indeed influences content delivery abilities and the overall performance of students and that teachers with minimum or no training had limited content area knowledge of the courses that they taught, consequently repudiating learners the full potential of performing well in those subjects (Sylvester, 2008). The findings and the results from the cited studies show that the Anglophone Caribbean teacher training programs are inadequate to solve the issue of low performance among male students. The study, therefore, concludes that there is a need for augmenting the programmes in order to improve male academic performance.

Apart from exploring how teacher training programmes impact male academic performance, the study also aimed at identifying how the current systems can be augmented to improve performance among male students. Consequently, the investigation sought to explore the following propositions under the second research question: how can teacher training programmes in the Anglophone Caribbean be enhanced to engage male students and improve their academic achievement? The descriptive findings indicate that teachers demonstrated confidence that an improvement in the training programmes and practices to promote gender responsiveness can improve student achievement. In this regard, the qualitative findings identified two main first-order barriers that impede the performance of male students namely the pedagogical approach and lack of male teachers within classrooms.

Consistent with the results reported under the first research question, a major barrier that prevents teachers from producing top performers is the approach used to teach students, otherwise known as pedagogical approaches. Participants expressed that the pedagogical approaches applied in the classroom impacted students' achievement. While the descriptive analysis did not highlight the inadequacy of the pedagogic technique utilized in the Caribbean region, the qualitative data allowed educators to clarify the issue. The teachers reported that the approach used does not favour the male students who thrive in a more engaging and participatory environment. Thus, building on previous literature, where it was highlighted that, unlike female learners, male learners are more passive in the classroom (Bartle, 2012; Ilori & Ajagunna, 2020) and require a more participatory environment. A participatory learning environment leads to higher cognitive activation, which improves the teacher-student relationship and provides better instructional pacing. As researchers (Coates, 2012; George, 2016; Miller, 2000; Steinbach, 2012; Thompson, 2017) concluded in their studies, the lack of empirical, enquiry-based and participatory learning received by preservice teachers leads to limited pedagogical differentiation which is then transferred into the classroom setting and might be directly undermining academic achievement. Clark et al. (2008) further suggested that teachers ought to promote and advance more active, engrossing, and proactive strategies for classroom erudition. Participatory pedagogy practice enables teachers to influence their student's academic performance in various ways. For instance, Hardman (2016) explains that a participatory learning environment leads to higher cognitive activation, improved relationships between teachers and their students, and better instructional pacing. The author further augments that this kind of learning approach encourages a safe, active, cognitively stimulating, and highly collaborative learning experience for the learners. Moreover, Naylor, and Arkoudis (2015) state that participatory pedagogy enhances

student satisfaction with their respective subject choices, course design, and classroom interaction. The study findings indicate that teachers are concerned about the limited potential of the current pedagogical approach in engaging male learners inside the classroom, making it a major contributing factor to the poor performance portrayed by male learners in the Caribbean.

The other barrier to male academic achievement in the Caribbean was highlighted as the lack of male teachers within classrooms. The results from the investigation indicated that students' classroom engagement could influence their performance within the classroom. For example, teachers were concerned about the lack of enough male presence in the classrooms. Several previous studies have resonated with this finding by positing that classrooms in the Caribbean are mostly taught by female teachers, with only a few male teachers represented in each school (Hunte, 2002; Jha & Kelleher, 2006). The findings reveal that the current gender mismatch between students and teachers plays against male students. A dated study by Gibbs (1994) also pointed out teachers' gendered behaviour where the teachers were found to favour female students more compared to male students. Another study coming out of Trinidad and Tobago by Edmund-Woods (2011) supports the perception that the methods and techniques, the teacher approaches, and presuppositions in many schools in the region are highly gendered and work against the general interest of boys, consequently impacting their participation and educational outcomes. Hunte (2002) further explains that the consequence of the gendered gap between female and male instructors is that girls end up performing better while boys are left with an emotional deficit that inhibits their progress.

Several factors have been put forward as reasons or have been argued as leading contributors to such findings. One such major reason that has been argued may be due to the cultural and contextual disparities of the region where the study was conducted. However, in the

Caribbean context, female students are accorded more attention and sympathy not only because of cultural underpinnings but also due to religious values. Teachers are gendered beings and carry with them gendered norms. Therefore, while female students in Caribbean classrooms find it easy to relate with and emulate their female teachers, males seek figures to emulate outside the classroom. The study found that when there is an increased presence of male teachers in the classroom this significantly boosted male performance. Thus, this is an important strategy that can be implemented to positively impact male performance.

5.2.3: Research Question 3

The third investigative question enquired about the core beliefs and theoretical practices underlying teacher training programmes within the Anglophone Caribbean. Teacher training programmes are guided by certain beliefs and theoretical practices that make them unique in terms of how they cater to the needs of learners in their geographical regions (Stone, et al., 2020). Besides, these beliefs and practices applied in different jurisdictions play a chief influencer in the educational outcomes of learners. The results of this research question revealed two main practices that are dominant across teacher training programs in the Anglophone Caribbean, both of which have to do with the curriculum taught by the training institutions, which is further trickled down into the classroom. Drawing from the literature as discussed in Chapter 2, these results present potential issues that impede the performance of boys in the Caribbean.

First, the study described the curriculum as learner-centred, which is also consistent with the literature review. According to Bruns and Luque (2014), the training programmes in the Caribbean train teachers to employ interactive student-centred activities: a method that is found to be effective in the teaching practice. Previous studies also suggested that learner-centred

curriculum design allows learners to shape their education by empowering them through choice-making (Bruns & Luque, 2014). This is so as a learner-centred curriculum catered to differentiated instruction and allowed learners to vigorously partake in the teaching and learning experiences or undertakings. In expanding the literature, the results from the research indicated that Caribbean teacher training programmes somewhat train teachers to use a student-centred curriculum in the classroom. However, while this is true, the study also indicated that this is not modelled by the trainers and as such trainees have difficulty visualizing what this is like within the actual classroom. Thus, this curriculum is often not effectively applied inside the classroom, and instead, teachers continue to use more traditional teaching techniques. This is supported in the literature, particularly by Bruns and Luque (2014) who assert that 80 per cent of the time the blackboard is the instructional method of choice by teachers as opposed to more student-centred and interactive activities. Creative teaching methods such as this, if harnessed, could be an important nuanced contributor to the academic achievement of boys. The conclusion made here is that although the core curriculum that is currently being used in the Anglophone Caribbean is effective for male learners, the teachers are not well-equipped to execute it within their classrooms.

Secondly, the study found the curriculum taught by Caribbean teachers is derivative of the European style borrowed during the colonial periods. Similarly, this conclusion is mirrored by previous researchers that have argued that the Caribbean education systems still heavily rely on the philosophical underpinnings of their colonizers, many decades after the British ended their colonial rule (Coates, 2012; Schwarz, 2003). This presents yet another impediment to male performance in the Caribbean. While the Eurocentric curriculum has been central in developing the Caribbean's education system, results from this study show some dissatisfaction with this

theoretical approach among teacher training practitioners. The participants reported that the practice reproduces social class inequalities and reinforces outdated social roles. Anglophone Caribbean societies have undergone significant social and cultural shifts since colonial rule. Therefore, it requires a curriculum that recognizes and effectively responds to these sociocultural changes and classroom strains that leads to a rather complex teaching environment. The Caribbean needs to move away from framing its philosophy of teaching as that of its colonizers. The Caribbean still see education from a European perspective and that could be the reason why the region has a serious disconnect since they are taking a paradigm that is not a Caribbean focus. What the Caribbean is doing is basically taking the European curriculum and putting it into a context that the learners cannot relate to. Therefore, the research established that the continued use of the European-based curriculum is a critical issue that discounts the educational attainment of male learners within the Caribbean.

5.2.4: Research Question 4

Research question 4 was assessed whether the changes suggested for the current Caribbean teacher training programmes can improve classroom practices and by extension male academic performance. The study hypothesized that improvement in teacher training programmes and practices to raise gender awareness are related to improved classroom practices and increased male academic achievement. Relating to this anticipation, the study found several reasons why the current program warranted change. The teachers agreed that while the programmes were well structured to produce quality teachers, adjustments were needed to make the programs more suitable for male students. The study indicated that the current pedagogical approach is less engaging and does not encourage student participation, thus it must be restructured to encourage classroom participation of male students who are more active

compared to females as postulated by Ilori and Ajagunna, (2020). Similarly, findings advocated

for a shift to a learner-centred approach in the academic model, emphasizing the need for

teachers to be skilled in engaging students effectively. This aligns with modern educational

theories that prioritize active learning (Theobald et al, 2020). Participants criticized the current

academic model in the Caribbean, especially the practicum component, suggesting the

exploration of alternative models to improve teacher preparation and support, potentially

enhancing classroom practices and student outcomes.

There was also a call to drop euro-centric curriculum practices and instead adapt one that

encourages the integration of the Caribbean culture and strategically reflects better upon the

needs and situations of the Caribbean as opposed to Western knowledge. The use of theories and

practices from the global north may create a gap between the training offered and the needs of

Caribbean educators and students. This reliance could also lead to feelings of cultural inferiority

or alienation among educators, hindering their ability to connect with students effectively.

Incorporating Caribbean-centric perspectives and practices into teacher training programmes is

crucial to ensure their relevance and effectiveness. This requires a re-evaluation of the theoretical

foundations and pedagogical approaches used in training, advocating for a more inclusive and

culturally responsive approach. Such a system would improve the performance of male students.

Therefore, putting forth strong evidence to support that improvement in teacher training

programmes and practice can raise gender awareness and by extension male performance.

Findings highlighted challenges faced by new teachers as they transition from training to

practice, especially when tasked with implementing a rigorous curriculum despite their limited

experience. This challenge aligns with previous research by Osborne (2018), which emphasized

the need for targeted training programmes to prepare teachers more effectively for the classroom.

Additionally, the study underscored the critical role of resources in supporting quality education. This resonates with Johnson et al. (2020), who emphasized the importance of adequate resources in facilitating effective teaching practices and improving student outcomes. Moreover, the findings emphasized the need to support both teachers and teacher trainees, a sentiment echoed by Anderson (2019), who highlighted the significance of comprehensive support systems in developing effective educators. They argued that such support is essential for ensuring teacher readiness and enhancing classroom practices.

Furthermore, the evaluation highlighted the importance of increasing male representation in the teaching profession to serve as positive role models for male students. Consistent with Stah and King's (2017) research, the study emphasized on the positive impact of male teachers on student performance, particularly among male students. Their research highlighted the importance of diverse role models in promoting student success. However, it is essential to recognize the diverse impact of male role models, who emphasized the variability in teaching styles and approaches among male educators (Frey et al., 2020), Nonetheless, the findings underscored the potential benefits of increasing male representation in teaching to address performance gaps and enrich the overall educational experience for students.

5.3: Implications for Practice

The mixed-method research explored how teacher training impacts student performance. The research has implications for how teachers can integrate their practice into the classroom to produce admirable results in terms of academics. By analysing the data collected, the study reached several conclusions that can enhance the literature focusing specifically on the ways by which teacher training programmes in the Anglophone Caribbean region impact the performance of male students. As previously described, the study participants reported many barriers that

hinder male students from registering competitive academic results when compared to their female counterparts including the pedagogical approaches, the curriculum, and the lack of male engagement in the classroom. These findings corroborate the findings of preceding research as was explored in Chapter 2. Ascertaining how the inadequacies of teacher training act as barriers to male academic excellence, and how it would benefit the efforts to promote strategies that focus on improving the performance of weaker or minority students as well as reducing and eliminating such barriers in Caribbean schools which are of importance for the teacher education reforms (King & Newmann, 2000; Snilstveit, et al., 2017).

Previous works have noted that teachers' preparation programmes in the Caribbean must recognize the significance of providing pre-service teachers with enough effective strategies to tackle the issue of male underperformance (Jennings, 2001; Miller, 2000; Steinbach, 2012). However, studies have been incapable of pinpointing specifically where the problem of male underperformance in the Caribbean lies (Bailey, 2003; Barriteau, 2004; Burns, 2006; Carrington, 2008; Cobbett & Younger, 2012; Griffin, 2010; Smith, 2018), which informs the main problem of this dissertation. The results of the study, therefore, build upon the missing link between teacher education and male underachievement and create a strong basis for teacher education reforms to improve male performance in the Caribbean. In terms of reforming the Caribbean teacher education programmes, when policymakers get to hear the teachers' voices in the policymaking and administrative procedure, it may accelerate the overall changes needed and help to eradicate the aforementioned obstacles within educational settings. Therefore, this study ascribed to form a part of the missing link between teacher training programmes and male underachievement. Generally, educational reform hinges on whatever the perspectives, mindsets and perceptions of the educators on the ground are and that is as uncomplicated and as intricate,

as it gets (Fullan, 2007). The study results portray the voices of current and future teachers in the Caribbean, as well as the programme directors of the training institutions. Unlike previous studies on male underperformance which focused on gender socialization and gender insensitivity (Bailey, 2003; Burns, 2006; Carrington, 2008), this study looks at the issue of the diminishing role of males and their educational underachievement in the Caribbean through the unique lens of teachers and teacher training institutions.

5.4: Recommendations for Application

To recap, the study's main focus was to determine how teacher training programmes impact the overall academic performance of male learners within the Anglophone Caribbean. The findings of this mixed-method research significantly contribute to the literature about how teachers' training affects their classroom practice, their perspective on the barriers facing the training institutions, and how this affects the performance of their students, in particular male students. As previously described in this study, the participants reported that their training impacts the performance of their students. More importantly, they reported a few issues in the current teacher training programs that prevent boys from achieving the best potential in their academics. Taking this issue into consideration and the suggestions provided by the participants, the study is well suited to provide strong recommendations on how the findings can be applied to actual practice by policymakers, the ministries of education, training institutions, and leadership in their educational departments, legislators and teachers alike.

Teachers' content knowledge directly influences student output. Therefore, teachers' professional development and training is an important factor in education that contributes to improved education output. However, teacher training programmes in the Anglophone Caribbean have been under scrutiny in terms of how well they prepare teachers for the classroom and how

effective they are in terms of affording learners quality education. Besides, this study has identified many barriers in teacher training programmes that are detrimental to student performance, in particular the performance of male students. The Anglophone Caribbean countries as signatories of UNESCO's Education for All (EOA) initiative have in the past implemented educational reforms where the provision of superior and effective academic training for teachers aimed at enabling more innovative strategies to assist teachers' effectiveness was outlined. As such they should be better prepared to carry out their duties in a diverse cultural and social context (Jules, 2008). On the other hand, these initiatives necessitate detailed specifications and a homogenized toolkit to assist policymakers, educational managers, and leaders in the teacher training institutes in enhancing the best educational practices in the Anglophone Caribbean. Therefore, this study suggests that policymakers in the relevant departments should endorse reforms and new policies in the Caribbean teacher education systems that address the current performance gender gap, and subsequently carry out follow-ups to assess the new reforms and policies and their effectiveness. This will help improve the overall educational outcomes of learners, specifically male learners who have been portrayed as the weaker gender with regard to educational attainment.

In consideration of the global context, where top-performing education systems enforce stringent criteria for entry into teacher training programmes, it is imperative for Anglophone Caribbean countries to deliberate on refining the quality of individuals entering the teaching profession. The Anglophone Caribbean nations should improve the calibre of individuals seeking entry into teacher training. To align with international best practices and elevate the standard of teacher training, it is recommended that educational policymakers implement measures to enhance the selection criteria for aspiring teachers. This may involve establishing more rigorous

academic prerequisites, comprehensive assessments, and a thorough evaluation of candidates' aptitude and commitment to the teaching profession. By prioritizing the quality of entrants, the education system can lay a robust foundation for effective teacher training, ultimately contributing to elevated educational outcomes.

This emphasis on the initial phase of teacher preparation is a vital component in fostering excellence within the teaching profession and subsequently improving the overall educational landscape in the Anglophone Caribbean. Therefore, in terms of reforming the teacher education systems, better preparation of teachers is likely to improve pedagogical practices applied in teaching, significantly influencing the students' personal development and academic success (Guerriero, 2014). Thus, improvement in the teaching practice can contribute to an appraisal of pedagogical knowledge aimed at accomplishing some sort of mastery. Pedagogical knowledge facilitates effective classroom practice that works to offer students extensive knowledge used to boost academic development. Students' success is mostly attained through a pedagogical approach that enables learners to be active participants in the instructional and edification process. The study's results indicated that the pedagogical practices employed in most countries in the Anglophone Caribbean are inadequate in that they do not recognize the intricate requirements of male learners in the region. Due to sociocultural influences, male students in the Caribbean have been reported as having different learning styles from their female counterparts. While females find it easy to concentrate on their classwork, male students are more passive learners and are easily distracted in the classroom, thus requiring a more hands-on learning approach as Ilori and Ajagunna (2020) outlined in their study.

The researcher, therefore, recommends that policymakers in the teacher education sector enact reforms in elements of pedagogy to make certain that teachers are adequately competent to

teach and apply knowledge. Teachers should be trained to adopt more participatory pedagogical practices that engage the learners ensuring active participation resulting in male students becoming more engaged in the learning process. Hardman (2016) posits that participatory learning environments often contribute to higher cognitive stimulation, better instructional pacing and improved relationships between learners and their teachers. This learning style will encourage an active, safe, cognitively stimulating, and very collaborative learning style to enrich the performance of male students and enhance student satisfaction in the respective subject areas.

It is evident that Anglophone Caribbean countries are still enforcing the type of curriculum and instructional practices that reflects the learning traditions they inherited from their British colonizers even long after the colonizers themselves have modernized their system (Coates, 2012). The Ministry of Education in the various Anglophone Caribbean nations persists in following a curriculum that is no longer binding or effective on the learners. The results from the investigation show that teacher training officials have felt the tensions and challenges characterized by a curriculum that is more Eurocentric as opposed to one that suits the current needs of their learners. Despite the critical role that teachers play in the development of and defining of the current education systems within the Caribbean, the precolonial curriculum now acts as a significant inhibitor to male academic achievement. Instead, it promotes social learning inequalities by reinforcing outdated social roles. Since the colonial period, the Anglophone Caribbean nations have undergone immense social and cultural shifts, and therefore, they need to drop some practices that discount their efforts to align with the current times in terms of learners' needs and demands.

Therefore, the study strongly calls for national and regional education policymakers to consider the apparent changes in the educational needs of learners in the Caribbean region and

enact appropriate curriculum reforms that align with the current students' experience. There is a need for a curriculum based on the needs and potential of individual learners with more flexible parameters and frameworks that shift and move as per the demands and needs of the learners. This problem can be resolved by changing the current curriculum to a competency-based curriculum (CBC) that changes as per the current needs of learners promoting formal, informal and non-informal education that is more suited to the epitome of lifelong learning (Hernández-de-Menéndez & Morales-Menendez, 2016). Many nations such as Norway, South Africa, and the Netherlands have all developed unique competency-based frameworks that acknowledged the local educational requirements and set the training programs within the context of such competency definitions. Therefore, countries in the Anglophone Caribbean should unveil their own CBC based on their dynamics and needs that are favourable to their learners, especially the male learners who have been identified as the weaker gender in terms of academic prowess.

The results of this study show that teacher education practitioners were not satisfied with how teachers apply interactive student-centred activities in their classroom practice. Evidence from the study shows that while the Caribbean teaching system is banking on the learner-centred approach, this important element of the curriculum is not applied effectively inside teacher training or the wider classrooms. Instead, both sets of instructors continue to employ more traditional techniques. This is a major concern especially because male students have been identified to thrive well academically using such creative approaches structured to enhance male participation by focusing on the pros and cons of individual students. The learner-centred strategy works by removing the instructor from being the focal point of the knowledge acquisition process and placing the emphasis on the learners. Besides, it encourages hands-on learning and encourages the acquisition of new knowledge mostly through scrutiny, practical and

experimental learning, and learning for improvement. Furthermore, it fosters a level of partnership in the general learning progression between the instructor and learners, thus maximizing the learning capability of students. The researcher perceives this as a major barrier to male performance, thus recommends that the Ministries of Education should provide necessary resources for trainee and practising educators to enable them to apply more engaging educational technology and provide them with opportunities to improve their capability to use such technology through brief courses and ongoing professional development sessions. This will facilitate both the training and teaching process, and at the same instance motivate the male students to learn, build up their learning interest, and promote their learning success.

The results also show that the student's academic development needs and the reinforcement they obtain from their instructors varied in terms of gender. Caribbean classrooms are marred with a significant gender mismatch in terms of teachers, with most classrooms being dominated by female instructors. Evidence shows that young learners feel more comfortable learning and participating in courses taught by teachers who are of a similar gender as themselves (Jha & Kelleher, 2006). This unfortunate trend has significantly disadvantaged boys who mostly lack the presence of male tutors whom they can interact freely with, consequently inhibiting their academic developmental needs and teacher support as expressed earlier. Thus, male educators now have an essential function to carry out in the future of Caribbean education and by extension the improvement of boys' academic performance. Hunte (2002) argues that in a profession where women are the majority, male teachers diversify the education workforce and make a significant impact as role models for male students, therefore, as a short-term solution, this study suggests equity in the support that teachers accord students by differentiating the needs of male and female learners. This can be achieved by both the male and female teachers

recognizing and understanding the overall learning goals and requirements of their learners and by creating a friendly and welcoming environment for students, despite gender. In the long term, the investigator proposes that the educational ministries and the national and regional education administrators strive to attract more male teachers in an attempt to maintain an equal balance in the number of teachers deployed within schools and inside each classroom. Despite the fact that the teaching profession has progressively become more and more 'feminized' thus affecting the education of boys due to a lack of male role models, teacher training institutions should utilize the available male teachers by empowering them with suitable knowledge and skills needed to engage more male students in the classroom as much as possible to substantiate for the increased female instructor presence.

When considering the recommended reforms in teacher education systems associated with the improvement of male academic performance, the researcher suggests that policymakers and education reform project planners greatly consider the input of teachers and teacher education departments' administrators. This study has not only provided many important insights into how teacher training in the Anglophone Caribbean relates to male underachievement but has also shown how the training programmes impede the performance of boys by identifying some very important barriers present during the actual classroom practice and through teacher and student interaction. Therefore, the researcher strongly points to the prominence of teachers and the administrators of the departments of education in the reform process and suggests that the teachers' voices must be considered and heard in the policymaking process to identify and eliminate the most critical barriers to male performance, as well as speed up the change process. The nonparticipation of teachers in past educational reform plans within the Anglophone

Caribbean may be the cause of the delayed success to implement policies and reforms to improve male academic achievement.

Finally, the results from this investigation should contribute significantly to the body of literature and provide crucial insights into the barriers in teacher education programs that influence the educational outcomes of male learners. These findings will be of great significance for education officials in the Anglophone Caribbean countries. The recommendations for application brought forth by this study can be used to implement important reforms to the current teacher training practices concerning the academic performance of boys, as well as create strategic joint initiatives for all the Anglophone Caribbean countries to eliminate such barriers. As Fullan (2007), posits the reduction of barriers that impede education is the cornerstone for attaining successful educational reforms as such the findings of the study are rather significant and relevant for educational reforms, government ministries and strategic planners and reformers in the Anglophone Caribbean.

5.5: Recommendations for Future Research

This study already produced significant results about the relationship between teacher training and male academic underachievement and the challenges contributing to their weak performance. An interpretation of the collected data led to some conclusions that may be considered significant to the body of existing literature on the issue under review, particularly in reference to the barriers and challenges of teacher training that negatively impact the performance of male students. Nevertheless, it is essential that additional research be conducted to supplement the relationship between teacher training and male underachievement, as well as further explore the barriers that impede the effectiveness of teacher training programmes to address the prevailing gender disparity regarding student performance. Noteworthy, there are

still a lot of aspects and other directions of research concerning the Caribbean teacher training programmes and their shortcomings as it relates to addressing the educational achievement of male learners that need to be explored. Therefore, the following sections provide suggestions or pathways for future enquiries grounded on the dissertation's results and its limitations.

Understanding the association between teacher training programmes and male academic performance is important as it is the starting point in establishing a comprehensive reform plan for teacher educators, curriculum developers, education officials, and policymakers to establish effective teacher training programmes that promotes successful education for all students in the Anglophone Caribbean, and especially male students. However, while this study explored the strength of the association between teacher training programs and male academic achievement within the Anglophone Caribbean, the literature revealed a dismal number of studies examining the lower academic performance of boys and their style of learning (Chin et al., 2018). There were also fewer studies concentrating on teachers' preparedness and its role in the low academic achievement of boys (Thompson, 2017). This dearth of data examining the association between academic achievement and teacher training, in particular in boys has caused a significant research gap. This is very unfortunate as such data could be used to develop the discourse of male underachievement beyond outlying factors such as gender socialization and insensitivity portrayed by teachers.

Therefore, this study first recommends that additional studies must be conducted because there is still limited research, especially in the Anglophone Caribbean context. The result from this study has shown a notable relationship between teacher training and male underachievement in the Caribbean, as well as the hindrance in the training systems associated with poor performance. These findings as earlier mentioned could be a great start in creating great reform

plans to better the performance of male students. Therefore, to ensure that necessary reforms are enacted to improve the academic performance of boys, more researchers should come forth and study the issue of teacher training programmes and male underachievement, particularly in the Caribbean. This would not only reduce the research gap but also contribute additional insight into the barricades that make the teaching programs inadequate to address boys' underachievement and help enact better and more effective reforms based on empirical data. Also, the fact is that males and females are not necessarily monolithic groups, thus it is important that between and within group gender studies be carried out to paint a better picture of the gendered performance issue.

The other recommendation for prospect enquiries is that a comparative study should be piloted for individual countries across the Anglophone Caribbean to yield different and more particular results from the current study. One limitation of the study was its scope. The research area explored in this work was the Anglophone Caribbean, through the lens of four main countries, that is Jamaica, Guyana, Trinidad, and Barbados. Considering that the geographical coverage of the English-speaking Caribbean consists of more than 20 countries, generalizing the results based on a small sample of four countries decreases the actual representation of the entire population, and as such it is rather difficult to conclude that the outcomes of the research are true to its findings. Besides, the situation in these four countries might not accurately represent the situation in other countries. Jamaica, Guyana, Trinidad, and Barbados are some of the more advanced countries in terms of educational development and reforms in the Anglophone Caribbean. The researcher selected these countries because they have similar training programmes both in structure and scope as well as their high number of trained teachers, meaning that the situation might be worse in more underdeveloped countries in the region.

Therefore, replicating this research in more countries in the Anglophone Caribbean is important to get a true depiction of whether or not the region's teacher training programmes contribute to male underperformance and identify the factors contributing to such poor performances. In the same breath, it is also recommended that research centres in the Anglophone Caribbean need to develop a standardized measurement tool designed to explore the hindering factors in the teacher training programs that hinder male students in Caribbean schools from performing competitively as their female counterparts. This standardized instrument should be implemented during different periods to assess the progress in removing the barriers affecting teacher training programmes, as well as to discover new barriers promptly to ensure that male performance improves and remains consistent.

The intended participant group for the investigation consisted of both trainee and in-service teachers, as well as program directors from selected teacher training institutions. Taking into consideration the overarching aim of the investigation, which is to ascertain how teacher training programmes impact male underachievement, the target population used was fit to satisfy the intent of the research. However, drawing from the study's findings, the respondents referred to first-order barriers as the main obstacles preventing male students from attaining competitive academic results compared to female students. First-order barriers have to do with obstacles that are not within the control of teachers, such as training and resources (Ertmer, Ottenbreit-Leftwich & York, 2006). The first-order barriers identified by respondents in the study were pedagogical approaches, the curriculum, and the lack of male engagement in the classroom. Therefore, the third recommendation is that future research should include additional participants other than the ones used in this study, such as school leaders, administrators from the education department, and faculty members in teacher training programmes, students among other relevant

educational clienteles. Including these participants could shed more light on the issue or could help with understanding how they perceive administrative barriers and extrinsic factors. This is vital for education reforms because having a different perspective from a wider range of participants especially those outside the classroom may enable an overall view of the barriers, as opposed to reducing understanding of the barriers based only on the teacher's and programme directors' reports.

Still, on the issue of the study population, the study showed that some of the elements that influence educational outcomes were directly related to how males learn. For example, the study identified that the pedagogical practices applied by teachers during class practice do not identify with the intricate needs of male learners who are more passive in the classroom, thus requiring a more hands-on approach to learning. Besides, the study also reported that the shortage of male teachers in most Caribbean schools negatively impacted boys' academic performance because of the inability of boys to exploit their full learning potential as a result of the feminize classroom leading to an overabundance of female teachers. Furthermore, the investigation also unearthed that the curriculum taught in Caribbean schools promotes outdated social roles that are neither binding nor effective for male learners, thus a major inhibitor to male academic achievement. In all these instances, the barriers to teacher training are explicitly associated with the learning style of the male learners. Hence, the researcher strongly recommends that future studies measuring male academic underachievement should include male students as part of the participants to aid in understanding how males learn in the classroom. Obtaining data directly from the viewpoint of the actual students will ensure that the students have a unique opportunity to express themselves and help identify where the issue of

underachievement stems from. The results from these studies would be essential in enacting strong educational reforms that suit male learners.

In the study, information from teachers was collected quantitatively through a survey, and this information was further used to come up with the conversation topics to be discussed by programme directors in selected teacher training institutions in the qualitative stage through interviews. From this study's methodology, the teachers participating in the survey were not given enough room to freely express their thoughts, perception, and beliefs regarding the educational practice, and instead, their responses were often limited to Likert scale-type options. Considering that teachers directly deal with students, they were well poised to identify actual issues that happen in the classroom through experience and observation, the study recommends that future studies should utilize research methods that enable teachers to openly access their thoughts and feelings about the research topic to facilitate the advancement of and an awareness of the significance that the participants attribute to their experiences. This can be achieved by using qualitative research that collects in-depth data through using analytical methods such as interviews or focus groups. Having teachers at the forefront may lead to a comprehensive investigation of the potential limitations to male academic excellence in the Caribbean as experienced by the teachers first-hand.

Another recommendation for future research concerning the research methods is that future studies could enlarge the research sample to achieve a better outcome. The current study used 25 participants from each of the four countries studied in the quantitative phase, and one participant from each of the countries in the qualitative phase due to time constraints, COVID-19 pandemic restrictions and budget issues. Considering that the Anglophone Caribbean region consists of more than 20 countries, future studies can glean more robust and generalizable results

by using larger sample sizes covering the entire region. Besides, large samples will increase external validity, and research accuracy, capture diversity as well as rule out any inaccuracy stemming from outliers and skewed data in a smaller sample thus lessening the margin of error (Neerchal, et al., 2008). Consistent results gathered from a larger sample and covering an extensive geographical scope will not only strengthen research on teacher training and male underachievement in the Anglophone Caribbean region but also attract the attention of relevant parties in the education sector, therefore, pushing for faster, stronger and more effective reforms in the sector.

A strand of research that is ignored in this area of study juxtaposes different types of barriers in teacher education that impede the academic achievement of boys in the Anglophone Caribbean. The study revealed many barriers that prevent male students from performing competitively in their academics as compared to female students. These barriers included pedagogical approaches, the curriculum, and the lack of male engagement in the classroom. More needs to be understood about these barriers to address how they affect teacher training and classroom practice, and by extension male academic performance to better tackle the generational problem of male low educational attainment within the Caribbean. To further this study in terms of depth and width, in the future, studies should be conducted to focus on each of these barriers concerning teacher training and male underachievement. Besides, further research should be carried out on different teacher training institutional settings, and regional and international comparative studies should also be carried out in the future to be able to separate institutions that are doing well from those with poor practices to emulate good institutional practices and aim to prevent poor practices displayed by some institutions. Additional studies that focus on observing teachers and the way they implement content delivery in the classroom

should also be conducted. Understanding the teachers' practices when in the classroom is essential for identifying any challenges that teachers face by way of transition of content knowledge and pedagogical principles to improve their training courses and eliminate any barriers that prevent their successful implementation of the curriculum and pedagogy.

Though the study unearths many challenges and barriers to male academic performance or lack of in the Anglophone Caribbean. It is believed that the scope of the study was not wide enough for generalizability across the target population and as such further studies need to be conducted covering the above-recommended areas to further wider the discourse and elucidate the issue under review. Replication of the research across the Anglophone Caribbean could also substantiate the findings of the study by either supporting or refuting current results.

5.6: Conclusions

The overarching goal of the investigation was to evaluate the influence that the existing teacher preparation programs have on the low educational attainment of male learners within the Anglophone Caribbean. Although the issue of male underachievement is not new, the limited availability of studies examining the way males learn is shocking. Past studies have mostly examined the general factors that might impact boys' academic achievement. Hardly any study has looked at the correlation between teachers' training programs and preparedness for the educational outcome of boys and whether or not the programs adequately prepare teachers on how to use different teaching strategies to properly engage male learners and improve their learning. The scarcity of data in this area of study is unfortunate because this information has the potential to expand the discourse concerning poor performance among boys beyond peripheral factors.

Therefore, this area of study was initiated and sustained by the researcher's interest in reducing the apparent research gap in regard to the relationship between teacher training and male underachievement, as well as finding new ways of ameliorating the low academic achievement of male learners, especially within the Anglophone Caribbean region. Studies have shown that to improve academic outcomes and make important reforms in the Caribbean educational systems, important steps for change should be enacted in the overall education structure to improve the curriculum and pedagogical practices used to teach (George, 2016; Steinbach, 2012). For this reason, the study placed teacher training as a major contributor to academic achievement among male learners. Therefore, it was hoped that the main product of this dissertation study would be the stimulation of further studies allied to the aspect of teachers' training and male academic attainment and how the existing training programmes can be augmented to steer reforms fit to improve male academic performance in the Anglophone Caribbean.

To tackle the overarching goal of the research, the dissertation was designed to answer four main questions as follows: 1) What is the relationship between teacher training programmes and male academic performances? 2) How can teacher training programmes and practices in the Anglophone Caribbean be augmented and impact classroom practices and improve male academic achievement? 3) What are the core beliefs and theoretical practices underlying teacher training programmes within the Anglophone Caribbean? 4) How can changes in the overall structure, theoretical beliefs and pedagogical practices underlying teacher training programmes in the Anglophone Caribbean impact classroom practices and by extension male academic performances? Furthermore, the study was scrutinized against two hypotheses: H1a: Male academic performances within the Anglophone Caribbean is related to the quality of teacher

preparation programmes; and H2a: Improvement in teacher preparation programmes and practice to raise gender awareness are related to improved classroom practices and increase male academic achievement.

To address the aim of the investigation a pragmatic methodology was employed by the researcher in this study using explanatory sequential mixed methodology to facilitate the assemblage of and data interpretation of both the quantitative and qualitative data within the selected Anglophone Caribbean countries, that is, Jamaica, Guyana, Trinidad and Barbados. The statistical information was obtained using a cross-sectional internet-based questionnaire from 100 participating teachers (preservice, in-service, and retired) from the selected countries. The questionnaire tool was utilized to amass primary data about the participant's experience with the existing teacher training programmes and how the programmes influence classroom practice to gauge how teacher training and preparedness relate to male underachievement. This data was analysed on multivariate and univariate levels and using frequency analyses. The qualitative data provided in-depth insights into the research questions to give more specific findings, especially for the exploratory questions. Qualitative data was gathered through formal interrogations administered via Zoom with four respondents holding managerial positions in top teacher training institutes from selected countries in the Anglophone Caribbean. The researcher analysed the resulting qualitative data through iterative coding, resulting in eight themes designed to deal with the research inquiries and test the hypothesis.

The mixed research produced some crucial results relating to the issue of teacher training programmes and male underachievement in the Anglophone Caribbean. For clarity when portraying results, the conclusions from the inquiry were arranged in line with the interrogative questions. In regards to the first interrogative question which was aimed at identifying whether

there exists a substantial association between teacher training programmes and the educational attainment of male students, the study observed that the make and operations of teacher training programmes impact the learning and performance of boys. Teachers demonstrated some satisfaction with the programme, but with some weaknesses and gaps that discounts the teaching quality and performance of male students. The training was found to have gaps in areas including the short duration of training that pre-service teachers receive, absence of support for new teachers, wrong individuals joining the profession and misalignment of the programme with the actual needs and practices of the classroom. These problems not only affect the quality of teachers assigned to teach but also their attitude and perception toward the job. The study also noted that the programs fall short in some important areas including. Several researchers have supported the finding that teacher training programmes are uniquely designed to make the students ready for their future by equipping them with the important knowledge needed to excel academically (Clotfelter, et al., 2007; Harris & Sass, 2011; Schroeder & Adesope, 2015). The orchestration of teacher training programmes is based mainly on the creation and reception of knowledge inside the classroom through teacher and student actions as well as teaching and learning materials. (Harris & Sass, 2011).

Through the conclusions drawn from the first inquiry query, the investigation has shown that teacher training programs in the Anglophone Caribbean affect the academic outcome of learners and more explicitly male learners. The identified challenges and gaps in the programme provide potential evidence explaining why there is underperformance among students, despite training programmes being in place. Generally, the topic of teacher training programmes and how they relate to student performance has remained a grey area for a prolonged period now. Very little information is available regarding teacher training and the educational characteristics

and advancement of male learners, particularly in the Anglophone Caribbean region (Cobbett & Younger, 2012; Smith, 2010). Therefore, the central contribution of this investigation is that it adds to the existing knowledge base of male underachievement while widening the discourse by setting the framework for teacher preparation or education in the Caribbean context and showing how the training programs affect performance, particularly for male students in the region.

Unlike results from previous studies that largely linked male underachievement with gender socialization and gender insensitivity, the results from this dissertation do not align with the tenets of the stereotype threat model (Steele, 1997), which posit that negative socio-cultural factors and male socialization hinder boys from achieving academic excellence. On the contrary, these findings show that male underachievement has a lot to do with teacher education. For instance, the first research question also answered questions concerning teacher attitudes and perceptions, pedagogical practices, and teaching practices and how they influence performance. The results indicate that the attitudes, perceptions, and pedagogical principles that teachers bring to the classroom are not only developed but are also influenced by the practices underlying their training. Besides, the findings concluded that the existing training programmes adequately equip teachers with teaching strategies that can enable them to properly engage male students. As such, these results corroborate the hypothesis that there is an association between the teacher preparatory programmes in the Anglophone Caribbean and the educational outcomes of male learners. Therefore, the inferior academic achievement of male learners within this area is often influenced by the quality of teacher training programmes. Thus, as posited by Sorour et al., 2017 and Webster-Stratton et al., 2011, a teacher training programme designed to be consistent with the learning realities inside the classroom is vital in developing the cognition of male learners and improving their academic performance.

For the second research question, the researcher assessed whether changes could be made in the existing teacher preparatory programmes to improve the deteriorating educational achievement of male students within the Anglophone Caribbean by raising gender awareness and improving teaching practices in the classrooms. First, based on both a quantitative and qualitative analysis of the participants' admiration for change, the study concluded that the current teacher training programmes within the region are incapable of dealing with the problem of male non-performance. The result indicated that although the existing training programmes expose teachers to several teaching strategies to enable them to engage male students, the strategies are not adequate to phase out the prevailing issue of male underachievement, thus the call for change.

This conclusion has been reiterated in prior research where dissatisfaction has been evident in the way the teacher training programmes prepare tutors to effectively handle male students considering their academic frailness (Bruns & Luque, 2014). This means that the current programs could use some improvement if they were to help in increasing the performance of male students. In line with this conclusion, previous research has noted that the standard for training and trained educators in the Caribbean is low. A study conducted by Sorour et al. (2017) and Sylvester (2008) concluded that countries in the region have been reporting poor quality programmes and low success rates among students. Sylvester (2008) proceeds to use the example of Jamaica, where physics and mathematics are reported to suffer mainly due to the shortage of qualified and well-trained teachers. The researchers also note that a lack of teacher training indeed influences content delivery abilities and the overall performance of students and that teachers with minimum or no training have limited content area knowledge of the courses that they are teaching, consequently depriving learners of the full potential of performing well in

those subjects (Sylvester, 2008). The findings and the results from the cited studies show that the Anglophone Caribbean teacher training programs are inadequate to solve the issue of low performance among male students. The study, therefore, concludes that there is a need for augmenting the programs in order to improve male academic performance. As such, these findings challenge education ministries, policymakers and administrators of teacher education that in the pursuit of improving male academic achievement, well-thought-out reforms need to be implemented in the existing programs.

Furthermore, it may be determined from the findings of the investigation that there existed no substantial difference between the number of years of teaching experiences that teachers had and their perception of the need for change. This outcome implied that there had been a need for change to the existing teacher training programmes for many years now, considering that the studied participants attained their training at different times. An important contribution of these results is that they give the chronological trajectory of the state and advancement of the teacher educational development within the Anglophone Caribbean. The region has been witnessing an unending course of poor performance from male learners, which has in the past been largely linked to gender disparity caused by gender socialization and insensitivity. However, drawing from the above conclusion reached by the study, it is evident that the Caribbean teacher training programmes have been due for change for a long time now and are having some effect on academic performance.

Inclining toward these conclusions, both the qualitative and quantitative results further indicate that implementing changes in the theoretical frameworks, pedagogical practices, and the curriculum underlying the existing teacher preparation programmes will enhance classroom practice and male academic performance by extension. The study, therefore, concludes that to

have a good shot at improving the performance of male students, the existing training programmes must be carefully scrutinized and augmented in particular areas of pedagogy, curriculum and theoretical beliefs and framework to have a strong, visible, and long-lasting impact in improving boys' academic performance. This study, therefore, gives a good head start for other researchers to explore how changes in teacher training curriculums and overall structure can be implemented to improve the prevailing issue of underachievement among male students. Overwhelming studies have in the past criticized the standard of teacher preparation programs within the region of the Anglophone Caribbean, citing that the programs have mainly concentrated on instructing preservice teachers to acquire and teach content knowledge that mostly focuses on the diffusion of information to the students as opposed to participatory learning (Steinbach, 2012). The study shows that such past issues have been derailing the students' performance and should be phased out to tackle the long-standing issue of male underachievement in the Caribbean.

Confirming the results of the second research question, findings from the third investigative question revealed common frustrations from the participants regarding the current beliefs and practices underlying the existing Anglophone Caribbean teacher training programmes. From the findings, the current teacher training beliefs and practices in the region are not suitable for the learning style of male students, thus negatively impacting their educational outcomes. The study concluded that a potential issue that is contributing to male underachievement lies in the euro-centric theoretical principles that have always been used to determine the content and style of training in the prevailing teacher preparation programmes which does not seem very suitable or sustainable for the current generation of Caribbean learners. Another important finding made regarding the beliefs and practices of the existing

teacher training programmes was concerning the pedagogical principles and practices applied by teachers within the classroom. Here the study concluded that the pedagogical practice applied in most Caribbean classrooms greatly works against male students because it is less engaging and thus does not encourage the participation of male learners within the classroom, who are mostly very passive as opposed to their female counterparts. Still, on the theoretical beliefs and practices, the results of the investigation indicated that while encouraging teachers across training and preparatory programmes to utilize a curriculum that is student-centred during classroom practice, most teachers within the Caribbean region fail to effectively apply this technique and, instead tend to resolve to the old traditional teaching techniques as this is the way they were taught.

Drawing from the above conclusions on pedagogical practices and the curriculum, the study shows that teacher training institutions in the Anglophone Caribbean lack a real form of inquiry-based learning. The training programmes are mainly based on enabling learners to pass their examinations (Jennings, 2001); thus, success is based on the quality of the passes and not necessarily on whether students acquire the right knowledge to strengthen their learning skills. In addition to this, instructional delivery and knowledge acquisition in the teacher education institutions in the Caribbean region share a common norm of using traditional teaching methods that are largely teacher-centred as opposed to student-centred. This misguided norm lacks student participation and engagement and focuses on instructing the teachers on how to teach content knowledge with the sole intention of disseminating information rather than teaching students how to acquire learning skills. Therefore, considering the common findings from past research regarding the learning habits of male students, who, compared to their female counterparts, tend to be more passive and disengaged inside the classroom (Gurian, Stevens &

King, 2011; Ilori & Ajagunna, 2020), this study shows that the existing practices are unfavourable for the development of a robust academic knowledge among male students who must be kept engaged to strengthen their general school performance. In short, the teaching practices in the current teacher training programmes are more effective for students' knowledge development of the female students who are more alert but not the boys, who are mostly disengaged during lessons.

Still tied to the previous research questions, the final enquiry question was designed to elicit information pertaining to whether the changes in the overall structure, theoretical beliefs and pedagogical practices of the existing teacher training programs can positively impact the performance of male students. Following the quantitative and qualitative analysis of the respondent's insights into the proposed changes, the study concluded that there are several barriers relating to the structure, theoretical beliefs and pedagogical practices in the current training programs that prevent male students from reaching their full academic potential, thus leading to their poor performances. In this regard, the first findings showed that most teachers in the Anglophone Caribbean apply pedagogical approaches that are less engaging and thus do not encourage classroom participation, particularly for male students, who are largely categorized as the most passive group of students. Therefore, the study saw the need to change the current pedagogical practice to one that utilizes classroom practices that promote a more engaging and participatory approach. Besides, the study found that the main curriculum that most Caribbean schools are following does not entirely focus on the learners and is euro-centric, thus does not reflect the accurate learning needs of the current learners in the Anglophone Caribbean region. As such, the findings deemed it fit that changing the curriculum to one that promotes student-centred learning and to one that supports the integration of the local culture and strategically

reflects on the needs and situations of Caribbean learners can positively affect the performance of male students.

Ultimately, this study concurs with that of a past study (Steinbach, 2012) in demonstrating that the current teaching in the Caribbean teacher training institutions does not train teachers to demonstrate and develop problem-solving, thinking and reasoning skills. In contrast, the system views an excellent teacher as one who can get the students to memorize and spew up content learned in the classroom to pass examinations. As demonstrated by previous studies such as (Coates, 2012; Miller, 2000; Steinbach, 2012), the lack of empirical and participatory-based learning by teachers contributes to limited pedagogical variation being transferred into an extended classroom setting. This is detrimental to learning as it directly undermines the academic achievement of male learners. Therefore, it can be concluded that the current most important factors to consider when targeting positive change to the current teacher training programmes greatly depend on the pedagogical approach and the curriculum followed. The main areas of the current teacher training system that need critical restructuring and reform are improved instructional methodologies. The results show that these factors have the potential to improve the Caribbean teacher training programmes and stimulate gender awareness within classrooms and, by extension, the performance of male learners.

Interestingly, the study findings have introduced a new insight into the research on teacher training and its effects on male academic achievement. An observation that stood out in the analysis but was not directly related to teacher training was regard to the engagement of male students in classrooms or during lessons that are taught by male teachers. This study clearly illustrated the concern of teachers regarding the alarming shortage of male teachers in most schools in the Anglophone Caribbean. Teachers are gendered beings who naturally bear

gendered norms. Therefore, the prevailing gender mismatch between the number of male teachers available to teach male students negatively affects the learning morale of male students. Girls are more engaged in the classrooms on account of the heavy occurrence of female instructors within the classrooms, while boys tend to be disengaged because of the lack of male figures whom they can emulate and relate to more. From these findings, the study concluded that an increased presence of a male teacher within classrooms could undoubtedly boost the academic outcomes of male learners. Thus, correlating with the conclusion from past research (Jha & Kelleher, 2006) it can be argued that students tend to feel and act more comfortable and more engaged when learning and participating in a course that is being taught by instructors of an identical gender. Therefore, the future of the Caribbean educational system and the performance of male learners can be improved by bringing more male teachers into the practice to encourage diversification of the education workforce that is currently overflowing with females.

Overall, by analysing the numerical and descriptive data fetched from the study, the study has reached several conclusions that not only respond to the study problem but also play a part in the advancement of the dismal accumulation of literature specifically focusing on the association between teacher training and preparation programmes and male underachievement, particularly within the Anglophone Caribbean region. The study does more than identify that teacher training programs in the Anglophone Caribbean influence the performance of boys. It goes deeper to analyse the main barriers to the existing teacher training programmes that prevent boys from achieving academic excellence, yet they are taught in the same classrooms and by the same teachers who teach their fellow female students. The main areas identified as barriers to male academic excellence include the curriculum and the pedagogical approaches used. While the existing curriculum and pedagogical approaches used in the classroom have proven to be

effective on female students, they are not designed to directly engage and encourage the classroom participation of male students, who are mostly passive learners. Therefore, there is a need to introduce a curriculum that is more inclined toward the cultural and social traits of students within the Anglophone Caribbean and learner-centred pedagogical approaches. Future research assessing the issue of teacher training and male academic achievement should delve deeper into the issues of curriculum and pedagogical approaches to reveal more intricate ways of how these factors influence performance and derive stronger suggestions to reform teacher education systems. The conclusions drawn from this study are also significant to practice and can be used to expand the discourse of educational reforms in the Anglophone Caribbean. Ultimately, reforms in the teacher training programs must start with the way teachers are trained to deliver content to their learners inside the classrooms.

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APPENDICES

Appendix A: Survey Tool

Note to The Survey Respondents

Teacher Assessment and Evaluation of Training and Teaching Survey

You are invited to complete the following questionnaire which aims at examining the Relationship Between Teacher Training Programs and Male Academic Performance within the Anglophone Caribbean.

The questionnaire should only take 15-20 minutes to complete and it includes six different sections with varying question types.

Your responses are anonymous and will not be identified with you in any way.

By participating in this survey, you are indicating that you understand that your responses are anonymous and will not be identified with you in any way. You may skip any question that you find intrusive or offensive, but it will help me if you respond to as many questions as you feel comfortable with.

You have the right to withdraw at any stage (prior to or post the completion) of the research without any consequences and without providing any explanation. In this case, the data collected will be deleted.

Please complete all questions and make sure you follow the instructions for each question.

THE SURVEY

PART 1

*1. What gender do you identify as? **Choose one option**

     ● Male   ● Female C. _____ D. Prefer not to answer.

*2. Indicate your age **(Write exact years)**

    My age is   [   ]

*3. Where is your home located? **Choose one option**.

    A. Jamaica
    B. Trinidad
    C. Guyana
    D. Barbados

* 4. What is the highest degree or level of education you have completed? **Choose one option.**

    A. High School
    B. Bachelor's Degree
    C. Master's Degree
    D. PhD or higher
    E. Technical School
    F. Prefer not to say

*6. What is your current employment status? **Choose one option.**

    A. Employed Full-Time
    B. Employed Part-Time
    C. Seeking opportunities
    D. Retired
    E. Prefer not to say

*7. In which institution did you receive your teaching training program?

    [   ]

*8. What is your teaching background and experience? **Choose one option.**

    A. Preservice teacher (currently in college being trained to be a teacher)
    B. In-service teacher (1-5 yrs. experience)
    C. In-service teacher (5-10 yrs. experience)
    D. In-service teacher (over 10 yrs. of experience)

E. Retired teacher

PART 2

*1. The training program offered is adequately structured concerning teachers' pedagogical practices and instructional strategies. (**Choose one option)**

- o Strongly disagrees
- o Disagree
- o Neither agree nor disagree
- o Agree
- o Strongly agrees

*2. The training programs sufficiently equip teachers to deal with issues of diversity within the classroom. (**Choose one option**)

- o Strongly disagrees
- o Disagree
- o Neither agree nor disagree
- o Agree
- o Strongly agrees

*3. Teacher training programs are structured to recognize the prevailing trend of male underachievement in the Anglophone Caribbean nations. (**Choose one option**)

- o Strongly disagrees
- o Disagree
- o Neither agree nor disagree
- o Agree
- o Strongly agrees

*4. The faculty members of the teacher training institute have good knowledge in their areas of teaching. (**Choose one option**)

- o Strongly disagrees
- o Disagree
- o Neither agree nor disagree
- o Agree
- o Strongly agrees

*5. Do you think that professional development programs impact positively your teaching career?

- o Yes   ● No

*6. Do you think your teaching style and methods of teaching are directly linked to your training? (**Choose one option)**

- o Strongly disagree
- o Disagree
- o Neither agree nor disagree

    o   Agree

    o   Strongly agree

*7. Did the facility have the infrastructure to promote or support ICT-based innovations by teacher trainers in their teaching?

    o   Yes   ● No

*8. How satisfied are you with the overall level of your teacher training experience and how it prepares you for the classroom? (**Choose one option)**

    o   Very dissatisfied

    o   Not satisfied

    o   Neutral

    o   Satisfied

    o   Very satisfied

*9. Additional comments on the teacher training program and your overall training experience.

PART 3

*1. Schools in your region provide a suitable work environment to sufficiently execute your duties. (**Choose one option)**

    o   Strongly disagrees

    o   Disagree

    o   Neither agree nor disagree

    o   Agree

    o   Strongly agrees

*2. The school provides you with the freedom to try innovative methods to promote better teaching and learning. (**Choose one option)**

    o   Strongly disagrees

    o   Disagree

    o   Neither agree nor disagree

    o   Agree

    o   Strongly agrees

*3. The school appraises teachers' work annually. (**Choose one option)**

    o   Strongly disagrees

    o   Disagree

    o   Neither agree nor disagree

    o   Agree

- o Strongly agrees

*4. Do the schools in your region support ICT and project-based learning**? (Choose one option**)

- o Strongly disagrees
- o Disagree
- o Neither agree nor disagree
- o Agree
- o Strongly agrees

*5. The schools provide learners with the necessary facilities and infrastructures to improve their learning. (**Choose one option)**

- o Strongly disagrees
- o Disagree
- o Neither agree nor disagree
- o Agree
- o Strongly agrees

*6. Additional comments on the teaching and learning environment.

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| |

PART 4

*1. Male students are more excited about attending school than female students. (**Choose one option)**

- o Strongly disagrees
- o Disagree
- o Neither agree nor disagree
- o Agree
- o Strongly agrees

*2. Male students are more focused on their schoolwork than female students. (**Choose one option)**

- o Strongly disagrees
- o Disagree
- o Neither agree nor disagree
- o Agree
- o Strongly agrees

*3. Female students are more obedient than male students. (**Choose one option**)

- o Strongly disagrees
- o Disagree

o   Neither agree nor disagree
o   Agree
o   Strongly agrees

*4. Male students are quicker to ask for help with classroom work than female students. (**Choose one option**)

o   Strongly disagrees
o   Disagree
o   Neither agree nor disagree
o   Agree
o   Strongly agrees

*5. Male students are more effective in completing their schoolwork than female students. (**Choose one option**)

o   Strongly disagrees
o   Disagree
o   Neither agree nor disagree
o   Agree
o   Strongly agrees

*6. Both male and female students feel comfortable approaching their teachers for help. (**Choose one option**)

o   Strongly disagrees
o   Disagree
o   Neither agree nor disagree
o   Agree
o   Strongly agrees

*7. Male students participate better in classroom discussions and activities than female students. (**Choose one option**)

o   Strongly disagrees
o   Disagree
o   Neither agree nor disagree
o   Agree
o   Strongly agrees

*8. Male students often perform better than female students in-class assessments and examinations. (**Choose one option**)

o   Strongly disagrees
o   Disagree
o   Neither agree nor disagree
o   Agree
o   Strongly agrees

*9. Which gender of students do you find more approachable and easier to interact with within the classroom?

● Male   ● Female   ● Both

*10. Additional comments

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PART 5

*1. Gender does not play an important role in student performance in the Anglophone Caribbean. (**Choose one option**)

- o   Strongly disagrees
- o   Disagree
- o   Neither agree nor disagree
- o   Agree
- o   Strongly agrees

*2. Teachers' training programs influence student performance. (**Choose one option**)

- o   Strongly disagrees
- o   Disagree
- o   Neither agree nor disagree
- o   Agree
- o   Strongly agrees

*3. Teachers' attitudes towards and their perceptions of teaching and learning are linked to the theoretical foundations underlying their training. (**Choose one option**)

- o   Strongly disagrees
- o   Disagree
- o   Neither agree nor disagree
- o   Agree
- o   Strongly agrees

*4. Teachers, pedagogical principles and teaching styles have an impact on student achievement. (**Choose one option**)

- o   Strongly disagree
- o   Disagree
- o   Neither agree nor disagree
- o   Agree
- o   Strongly agree

*5. Teachers are exposed to a vast number of teaching strategies throughout the teacher training progress that will enable them to properly engage male students. (**Choose one option**)

- o   Strongly disagrees
- o   Disagree
- o   Neither agree nor disagree
- o   Agree

o   Strongly agrees

*6. Male students in the Caribbean are culturally conditioned to view education as 'not important and this impacts their academic performance. (**Choose one option)**

- o   Strongly disagrees
- o   Disagree
- o   Neither agree nor disagree
- o   Agree
- o   Strongly agrees

*7. Male students generally lack good role models within the classroom thus impacting their perception of education. (**Choose one option)**

- o   Strongly disagrees
- o   Disagree
- o   Neither agree nor disagree
- o   Agree
- o   Strongly agrees

*8. Schools are structured to favour male students over female students. (**Choose one option)**

- o   Strongly disagrees
- o   Disagree
- o   Neither agree nor disagree
- o   Agree
- o   Strongly agrees

*9. Female students are naturally more disobedient and disruptive than male students. (**Choose one option)**

- o   Strongly disagrees
- o   Disagree
- o   Neither agree nor disagree
- o   Agree
- o   Strongly agrees

*10. Additional comments

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PART 6

*1. How satisfied are you that the current teacher training programs can sufficiently address the performance gap between male and female students? (**Choose one option**)

- o   Very dissatisfied
- o   Not satisfied

o   Neutral

o   Satisfied

o   Very satisfied

*2. Do you believe that changes in the overall structure, theoretical beliefs and pedagogical practices underlying teacher training programs in the Anglophone Caribbean will impact classroom practices and by extension male academic performances?

◉ Yes   ◉ No   ◉ Maybe

*3. How confident are you that changes to the existing teacher training programs can help salvage the current situation of male academic underachievement?

o   Not confident at all
o   Somewhat confident
o   Neutral
o   Confident
o   Very confident

*4. What changes do you suggest/propose should be made to the existing teacher training programs to better enhance male academic performance?

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Appendix B: Interview Protocol

Note to the Interview Respondent

Director/Curriculum Developer Interview Protocol

Introduction: you are being invited to participate in the following interview aimed at eliciting information concerning the current state of teacher training programs within the Anglophone Caribbean and the impact that this might be having on male academic performances. The interview should only take 10-15 minutes. Your responses will be anonymous and will not be identified with you in any way.

By participating in this interview, you are indicating that you understand that your responses are anonymous and will not be identified with you in any way. You may skip any question that you find intrusive or offensive, but it will help me if you respond to as many questions as you feel comfortable with. You have the right to withdraw at any stage (prior to or post the completion) of the research without any consequences and without providing any explanation. In this case, the data collected will be deleted.

INTERVIEW

PART 1:

*1. Indicate your gender

     ◉ Male   ◉ Female

*2. Indicate your age

     My age is   [＿＿＿＿]

*3. Indicate your nationality

     My nationality is

*4. Indicate your country and area of residence

     I reside in   [＿＿＿＿＿＿＿＿＿＿＿]

*5. What is your educational background?

*6. What are your work experiences and history?

*7. How long have you worked as a director in the teacher training programs within the Anglophone Caribbean?

8* Describe your route to the directorship status

PART 2

*1. Share your views on the state of teacher training programs and how your role as a director contributes to the status of public education.

*2. How do you make your decisions? And what do you use to determine or support that your decisions are helpful towards ensuring equality in education and are ethical?

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PART 3

*1. How would you describe the core beliefs and practices underlying teacher training programs?

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*2. What theoretical principles are taken into consideration when determining the content and fundamental theories underlying teacher training in the Anglophone Caribbean?

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*3. Why do you think the current teacher training programs are inadequate to address the issue of male underachievement in the Caribbean?

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*4. Will changes in the overall structure, theoretical beliefs and pedagogical practices underlying teacher training programs in the Anglophone Caribbean impact classroom practices and by extension male academic performances?

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*5. In which areas do you suggest that changes should be made, and how will those changes improve the classroom practices and by extension male academic performances?

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Appendix C: UREC Provisional and Final Approvals and Blank Consent Form

UNICAF
UNIVERSITY

REAF_DS - Version 3.1

UNICAF UNIVERSITY RESEARCH ETHICS APPLICATION FORM DOCTORAL STUDIES	UREC USE ONLY: Application No: Date Received:

Student's Name: Kenisha Taylor

Student's E-mail Address: kenishataylor65@gmail.com

Student's ID #: R1806D5516885

Supervisor's Name: Chrysa Tamisoglou

University Campus: Unicaf University Zambia (UUZ)

Program of Study: UUZ: EdD Doctoral of Education

Research Project Title: Relationship Between Teacher Training Programs and Male Academic Performance within the Anglophone Caribbean.

1. **Please state the timelines involved in the proposed research project:**

Estimated Start Date: 01-Sep-2020   Estimated End Date: 30-Jun-2022

2. **External Research Funding (if applicable):**

   2.a. **Do you have any external funding for your research?**

   ☐ YES   ☑ NO

   If YES, please answer questions **2b** and **2c**.

   2.b. List any external (third party) sources of funding you plan to utilise for your project. You need to include full details on the source of funds (e.g. state, private or individual sponsor), any prior / existing or future relationships between the funding body / sponsor and any of the principal investigator(s) or co-investigator(s) or student researcher(s), status and timeline of the application and any conditions attached.

   N/A

   2.c. If there are any perceived ethical issues or potential conflicts of interest arising from applying or and receiving external funding for the proposed research then these need to be fully disclosed below and also further elaborated on, in the relevant sections on ethical considerations later on in this form.

   N/A

1

3. The research project

3.a. Project Summary:

In this section fully describe the purpose and underlying rationale for the proposed research project. Ensure that you pose the research questions to be examined, state the hypotheses, and discuss the expected results of your research and their potential.

It is important in your description to use plain language so it can be understood by all members of the UREC, especially those who are not necessarily experts in the particular discipline. To that effect ensure that you fully explain / define any technical terms or discipline-specific terminology (use the space provided in the box).

The main purpose of this explanatory sequential mixed-method study is to investigate the relationship between teacher-training programs in the Anglophone Caribbean and male underachievement. The study hopes to draw on quantitative as well as qualitative data to present an analysis of the impact that teacher training programs, including pedagogical practice and teaching strategies, has on male academic underachievement. By so doing the study will explain the issue in its current state as well as explore why the situation is the way it is. The study will directly examine in-service and pre-service teachers' perception of how boys learn and whether or not teacher training curricula are organized to facilitate their full development as practitioners who can engage male learners thus enhancing their educational outcomes. It is thus expected that the study will position teacher training programs as one of the underlining contributors of male underachievement within the region leading to improvements in the way teachers are taught to teach.

The study will seek to address the following overarching questions and hypothesis:
RQ1. Are there significant relationships between teacher training programs and male academic performances?
RQ2. Can teacher training programs and practices in the Anglophone Caribbean be augmented to raise gender awareness and impact classroom practices and improve male academic achievement?
RQ3: What are the core beliefs and theoretical practices underlying teacher training programs within the Anglophone Caribbean?
RQ4: Will changes in the overall structure, theoretical beliefs and pedagogical practices underlying teacher training programs in the Anglophone Caribbean impact classroom practices and by extension male academic performances?
H10: There is no relationship between teacher training programs and male academic performances within the Anglophone Caribbean.
H20: Improvement in teacher training programs and practices to raise gender awareness will not affect classroom practices or raise male academic performances within the Anglophone Caribbean.

3.b. Significance of the Proposed Research Study and Potential Benefits:

Outline the potential significance and/or benefits of the research (use the space provided in the box).

The plethora of studies examining the factors contributing to male underachievement has concentrated predominantly on socio-economic and political factors with a minimal number focusing on educational factors such as classroom atmosphere, and teachers' perception of teaching and learning. It is also doubtful that any study has been done examining the relationship between teacher training programs and male underachievement within the Anglophone Caribbean. thus, with increasing concern about male underachievement and the inadequacy of teachers' preparation within the region, a study of this nature needs to be conducted. Therefore, rather than continuing on the trajectory of previous researchers, the proposed research will widen the discourse and address the scarcity or lack of scholarly discourse concerning how male students learn and the relationship between teacher training programs and male underachievement within Anglophone Caribbean.

Thereby, it is hoped that the proposed study will provide an impetus for policymakers, teacher training institutions, regional governments and scholars to delve into a deeper analysis of the issue of male academic underachievement, with emphasis on teacher training programs. In essence, it should focus general attention on how teachers are taught to teach and the implications that this might be having on male academic achievement.

4. Project execution:

4.a. The following study is an:

☑ experimental study (primary research)

☐ desktop study (secondary research)

☐ desktop study using existing databases involving information of human/animal subjects

☐ Other

If you have chosen 'Other' please Explain:

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4.b. Methods. The following study will involve the use of:

Method	Materials / Tools
Qualitative:	☐ Face to Face Interviews
	☑ Phone Interviews
	☐ Face to Face Focus Groups
	☐ Online Focus Groups
	☑ Other *
Quantitative:	☐ Face to Face Questionnaires
	☑ Online Questionnaires
	☐ Experiments
	☐ Tests
	☐ Other *

*If you have chosen 'Other' please Explain:

As a result of the ongoing disturbances to global affairs and travel restrictions due to the Covid-19 pandemic the researcher will be conducting the interviews via Skype, zoom or over the phone as is convenient for the participants.

5. **Participants:**

   5 a. Does the Project involve the recruitment and participation of additional persons other than the researcher(s) themselves?

   ☑ YES   If YES, please complete all following sections.

   ☐ NO   If NO, please directly proceed to Question 7.

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5 b. Relevant Details of the Participants of the Proposed Research

State the number of participants you plan to recruit, and explain in the box below how the total number was calculated.

Number of participants | 104

The study will be conducted across 4 countries within the Anglophone Caribbean with a huge number of teachers most of whom are not accessible to the researcher. As such, 25 teachers will be selected from each country to complete the survey instrument as this is deemed a manageable and accessible number of participants that can be located with a more significant guarantee of maximum return rate. As well as 4 curriculum directors.

Describe important characteristics such as: demographics (e.g. age, gender, location, affiliation, level of fitness, intellectual ability etc). It is also important that you specify any inclusion and exclusion criteria that will be applied (e.g. eligibility criteria for participants).

Age range   From 20   To   65

Gender   ✓ Female
          ✓ Male

Eligibility Criteria:

- Inclusion criteria

Participants in the study will include in-service and pre-service teachers from four Caribbean countries. As well as curriculum directors of the top teacher training institutions within these countries.

- Exclusion criteria

Participants to be excluded will be first-year and second-year trainees who are early in the teacher training programs as they might not have adequate practical knowledge and information on important aspects of the teaching.

Disabilities   The study will only include participants who can provide informed consent for themselves, therefore, people with mental disabilities should not take part in the research.

Other relevant information (use the space provided in the box):

According to statistical data from the World Bank the ratio of female to male teachers in the Caribbean is presently 4.3:1, thus, it is expected that majority of the participants completing the survey instrument will be females. 15 of the 25 teachers from each country will be in-service teachers while 10 will be pre-service teachers. The greater number will be in-service teachers because they will be able to give provide more information in relation to training and practice.

5 c. Participation & Research setting:

Clearly describe which group of participants is completing/participating in the material(s)/   tool(s) described in 5b above (use the space provided in the box).

The interview will be conducted with 4 curriculum directors from the top teacher training institutions across the four selected countries: Jamaica, Barbados, Trinidad and Tobago and Guyana. While the Online questionnaires will be completed by 100 in-service and third year and or final year pre-service teachers from the four aforementioned Anglophone countries.

5 d.   Recruitment Process for Human Research Participants:

Clearly describe how the potential participants will be identified, approached and recruited (use the space provided in the box).

Having been an examiner for the Caribbean Examination Council for more than a decade has enabled me to interact with and to be in contact with teachers across the region. As such, I have already contacted fellow teachers from across the region informing them about my research interest. Many of whom have agreed to be the initial pool of participants. They, in turn, have offered to refer their colleagues as participants as well. Participants will then be directly contacted by myself and my colleagues in the selected countries via email, face to face, telephone or via social media. A Gatekeepers letter will provide approval from the directors of selected teacher-training institutions for the participation of pre-service teachers and curriculum or program directors. They will then be contacted via email or telephone.

5 e.   Research Participants Informed Consent.

Select below which categories of participants will participate in the study. Complete the relevant Informed Consent form and submit it along with the REAF form.

Yes	No	Categories of participants	Form to be completed
✓	☐	Typically Developing population(s) above the maturity age *	Informed Consent Form
☐	☐	Typically Developing population(s) under the maturity age *	Guardian Informed Consent Form

* Maturity age is defined by national regulations in laws of the country in which the research is being conducted.

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5 f. **Relationship between the principal investigator and participants.**

Is there any relationship between the principal investigator (student), co-investigators(s), (supervisor) and participant(s)? For example, if you are conducting research in a school environment on students in your classroom (e.g. instructor-student).

☐ YES   ☑ NO

If YES, specify (use the space provided in the box).

6. **Potential Risks of the Proposed Research Study.**

6 a. i. **Are there any potential risks, psychological harm and/or ethical issues associated with the proposed research study, other than risks pertaining to everyday life events (such as the risk of an accident when travelling to a remote location for data collection)?**

☐ YES   ☑ NO

If YES, specify below and answer the question 6 a.ii.

6 a.ii Provide information on what measures will be taken in order to exclude or minimise risks described in 6.a.i.

6 b. Choose the appropriate option

		Yes	No
i.	Will you obtain written informed consent form from all participants?	✓	
ii.	Does the research involve as participants, people whose ability to give free and informed consent is in question?		✓
iii.	Does this research involve participants who are children under maturity age? **If you answered YES to question iii, complete all following questions.** **If you answered NO to question iii, do not answer Questions iv, v, vi and proceed to Questions vii, viii, ix and x.**		✓
iv.	Will the research tools be implemented in a professional educational setting in the presence of other adults (i.e. classroom in the presence of a teacher)?		✓
v.	Will informed consent be obtained from the legal guardians (i.e. parents) of children?		✓
vi.	Will verbal assent be obtained from children?		✓
vii.	Will all data be treated as confidential? If NO, explain why confidentiality of the collected data is not appropriate for this proposed research project, providing details of how all participants will be informed of the fact that any data which they will provide will not be confidential.	✓	
viii.	Will all participants /data collected be anonymous? If NO, explain why and describe the procedures to be used to ensure the anonymity of participants and/or confidentiality of the collected data both during the conduct of the research and in the subsequent release of its findings.	✓	

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		Yes	No
ix.	Have you ensured that personal data and research data collected from participants will be securely stored for five years?	✓	
x.	Does this research involve the deception of participants? If YES, describe the nature and extent of the deception involved. Explain how and when the deception will be revealed, and who will administer this debrief to the participants:		✓

6 c. i. **Are there any other ethical issues associated with the proposed research study that are not already adequately covered in the preceding sections?**

☐ Yes   ✓ No

If YES, specify (maximum 150 words).

6.c.ii Provide information on what measures will be taken in order to exclude or minimise ethical issues described in 6.c.i.

6 d. Indicate the Risk Rating.

☐ High   ✓ Low

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7. Further Approvals

Are there any other approvals required (in addition to ethics clearance from UREC) in order to carry out the proposed research study?

☑ YES ☐ NO

If YES, specify (maximum 100 words).

The researcher will also seek the approval of the Principal/Dean of the desired teacher training institutions in terms of identifying, contacting and providing the email/contact information for the program directors of the schools of education or the appropriate individual and can assist with the interview process.

8. Application Checklist

Mark √ if the study involves any of the following:

☐ Children and young people under 18 years of age, vulnerable population such as children with special educational needs (SEN), racial or ethnic minorities, socioeconomically disadvantaged, pregnant women, elderly, malnourished people, and ill people.

☐ Research that foresees risks and disadvantages that would affect any participant of the study such as anxiety, stress, pain or physical discomfort, harm risk (which is more than is expected from everyday life) or any other act that participants might believe is detrimental to their wellbeing and / or has the potential to / will infringe on their human rights / fundamental rights.

☐ Risk to the well-being and personal safety of the researcher.

☐ Administration of any substance (food / drink / chemicals / pharmaceuticals / supplements / chemical agent or vaccines or other substances (including vitamins or food substances) to human participants.

☐ Results that may have an adverse impact on the natural or built environment.

9. Further documents

Check that the following documents are attached to your application:

		ATTACHED	NOT APPLICABLE
1	Recruitment advertisement (if any)	☐	☑
2	Informed Consent Form / Guardian Informed Consent Form	☑	☐
3	Research Tool(s)	☑	☐
4	Gatekeeper Letter	☑	☐
5	Any other approvals required in order to carry out the proposed research study, e.g., institutional permission (e.g. school principal or company director) or approval from a local ethics or professional regulatory body.	☐	☑

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10. Final Declaration by Applicants:

(a) I declare that this application is submitted on the basis that the information it contains is confidential and will only be used by Unicaf University for the explicit purpose of ethical review and monitoring of the conduct of the research proposed project as described in the preceding pages.

(b) I understand that this information will not be used for any other purpose without my prior consent, excluding use intended to satisfy reporting requirements to relevant regulatory bodies.

(c) The information in this form, together with any accompanying information, is complete and correct to the best of my knowledge and belief and I take full responsibility for it.

(d) I undertake to abide by the highest possible international ethical standards governing the Code of Practice for Research Involving Human Participants, as published by the UN WHO Research Ethics Review Committee (ERC) on http://www.who.int/ethics/research/en/ and to which Unicaf University aspires to.

(e) In addition to respect any and all relevant professional bodies' codes of conduct and/or ethical guidelines, where applicable, while in pursuit of this research project.

> ✓ **I agree with all points listed under Question 10**

Student's Name: Kenisha Taylor

Supervisor's Name: Chrysa Tamisoglou

Date of Application: 23-May-2021

Important Note:
Save your completed form (we suggest you also print a copy for your records) and then submit it to your UU Dissertation/project supervisor (tutor). **In the case of student projects, the responsibility lies with the Faculty Dissertation/Project Supervisor.** If this is a student application, then it should be submitted via the relevant link in the VLE. Please submit only electronically filled in copies; **do not** hand fill and submit scanned paper copies of this application.

☐

| UNICAF UNIVERSITY
RESEARCH ETHICS APPLICATION FORM
DOCTORAL STUDIES | UREC USE ONLY:
Application No:

Date Received: |

Student's Name: Kenisha Taylor

Student's E-mail Address: kenishataylor65@gmail.com

Student's ID #: R1806D5516885

Supervisor's Name: Chrysa Tamisoglou

University Campus: Unicaf University Zambia (UUZ)

Program of Study: UUZ: EdD Doctoral of Education

Research Project Title: Relationship Between Teacher Training Programs and Male Academic
Performance within the Anglophone Caribbean.

1. <u>Please state the timelines involved in the proposed research project:</u>

Estimated Start Date: 01-Sep-2020   Estimated End Date: 30-Jun-2022

2. <u>External Research Funding (if applicable):</u>

  2.a. **Do you have any external funding for your research?**

☐ YES   ☑ NO

If YES, please answer questions **2b** and **2c**.

  2.b. List any external (third party) sources of funding you plan to utilise for your project. You
need to include full details on the source of funds (e.g. state, private or individual sponsor),
any prior / existing or future relationships between the funding body / sponsor and any of
the principal investigator(s) or co-investigator(s) or student researcher(s), status and
timeline of the application and any conditions attached.

N/A

  2.c. If there are any perceived ethical issues or potential conflicts of interest arising from
applying or and receiving external funding for the proposed research then these need to
be fully disclosed below and also further elaborated on, in the relevant sections on
ethical considerations later on in this form.

N/A

3. The research project

3.a. Project Summary:

In this section fully describe the purpose and underlying rationale for the proposed research project. Ensure that you pose the research questions to be examined, state the hypotheses, and discuss the expected results of your research and their potential.

It is important in your description to use plain language so it can be understood by all members of the UREC, especially those who are not necessarily experts in the particular discipline. To that effect ensure that you fully explain / define any technical terms or discipline-specific terminology (use the space provided in the box).

The main purpose of this explanatory sequential mixed-method study is to investigate the relationship between teacher-training programs in the Anglophone Caribbean and male underachievement. The study hopes to draw on quantitative as well as qualitative data to present an analysis of the impact that teacher training programs, including pedagogical practice and teaching strategies, has on male academic underachievement. By so doing the study will explain the issue in its current state as well as explore why the situation is the way it is. The study will directly examine in-service and pre-service teachers' perception of how boys learn and whether or not teacher training curricula are organized to facilitate their full development as practitioners who can engage male learners thus enhancing their educational outcomes. It is thus expected that the study will position teacher training programs as one of the underlining contributors of male underachievement within the region leading to improvements in the way teachers are taught to teach.

The study will seek to address the following overarching questions and hypothesis:
RQ1. Are there significant relationships between teacher training programs and male academic performances?
RQ2. Can teacher training programs and practices in the Anglophone Caribbean be augmented to raise gender awareness and impact classroom practices and improve male academic achievement?
RQ3: What are the core beliefs and theoretical practices underlying teacher training programs within the Anglophone Caribbean?
RQ4: Will changes in the overall structure, theoretical beliefs and pedagogical practices underlying teacher training programs in the Anglophone Caribbean impact classroom practices and by extension male academic performances?
H10: There is no relationship between teacher training programs and male academic performances within the Anglophone Caribbean.
H20: Improvement in teacher training programs and practices to raise gender awareness will not affect classroom practices or raise male academic performances within the Anglophone Caribbean.

3.b. Significance of the Proposed Research Study and Potential Benefits:

Outline the potential significance and/or benefits of the research (use the space provided in the box).

The plethora of studies examining the factors contributing to male underachievement has concentrated predominantly on socio-economic and political factors with a minimal number focusing on educational factors such as classroom atmosphere, and teachers' perception of teaching and learning. It is also doubtful that any study has been done examining the relationship between teacher training programs and male underachievement within the Anglophone Caribbean. thus, with increasing concern about male underachievement and the inadequacy of teachers' preparation within the region, a study of this nature needs to be conducted. Therefore, rather than continuing on the trajectory of previous researchers, the proposed research will widen the discourse and address the scarcity or lack of scholarly discourse concerning how male students learn and the relationship between teacher training programs and male underachievement within Anglophone Caribbean.

Thereby, it is hoped that the proposed study will provide an impetus for policymakers, teacher training institutions, regional governments and scholars to delve into a deeper analysis of the issue of male academic underachievement, with emphasis on teacher training programs. In essence, it should focus general attention on how teachers are taught to teach and the implications that this might be having on male academic achievement.

4. Project execution:

4.a. The following study is an:

[✓] experimental study (primary research)

[ ] desktop study (secondary research)

[ ] desktop study using existing databases involving information of human/animal subjects

[ ] Other

If you have chosen 'Other' please Explain:

4.b. Methods. The following study will involve the use of:

Method	Materials / Tools
Qualitative:	☐ Face to Face Interviews
	☑ Phone Interviews
	☐ Face to Face Focus Groups
	☐ Online Focus Groups
	☑ Other *
Quantitative:	☐ Face to Face Questionnaires
	☑ Online Questionnaires
	☐ Experiments
	☐ Tests
	☐ Other *

*If you have chosen 'Other' please Explain:

As a result of the ongoing disturbances to global affairs and travel restrictions due to the Covid-19 pandemic the researcher will be conducting the interviews via Skype, zoom or over the phone as is convenient for the participants.

5. **Participants:**

   5 a. Does the Project involve the recruitment and participation of additional persons other than the researcher(s) themselves?

   ☑ YES   If YES, please complete all following sections.

   ☐ NO   If NO, please directly proceed to Question 7.

b. **Relevant Participant Details of the Proposed Research**

Please state the number of participants you plan to recruit, and describe important characteristics such as: demographics (e.g. age, gender, location, affiliation, level of fitness, intellectual ability etc). It is also important that you specify any inclusion and exclusion criteria that will be applied (e.g. eligibility criteria for participants).

Number of participants   100

Age range   From 20   To 65

Gender   ✓ Female
           ✓ Male

Eligibility Criteria:

- Inclusion criteria   Participants in the study will include in-service and preservice teachers from four Caribbean countries. As well as five curriculum directors of the top teacher training institutions within these countries.

- Exclusion criteria   Participants to be excluded will be first-year trainees who have just started in teacher training programs as they might not have adequate knowledge and information on important aspects of the teacher training programs.

Disabilities

Other relevant information (maximum 100 words):

c. **Recruitment Process for Human Research Participants:**

Please clearly describe how the potential participants will be identified, approached and recruited (maximum 200 words).

Having been an examiner for the Caribbean Examination Council for more than a decade has enabled me to interact with and to be in contact with teachers across the region. As such, I have already contacted fellow teachers from across the region informing them about my research interest. Many of whom have agreed to be the initial pool of participants. They, in turn, have offered to refer their colleagues as participants as well. Participants will then be directly contacted by myself and my colleagues in the selected countries via email, face to face, telephone or via social media. A Gatekeepers letter will provide approval from the directors of selected teacher-training institutions for the participation of pre-service teachers and curriculum or program directors. The teacher training institutions will be selected based on the criteria of them being deemed top training institutions based on the number of years they have been in operation. Help will also be solicited from lecturers of the institutions with the identification and recruitment of preservice participants. A written consent form will also be obtained from all participants.

d. **Relationship between the principal investigator and participants:**

Is there any relationship between the principal investigator (student), co-investigators(s), (supervisor) and participant(s)? For example, if you are conducting research in a school environment on students in your classroom (e.g. instructor-student).

[ ] YES   [✓] NO

If YES, please specify (maximum 100 words).

5. **Further Approvals**

Are there any other approvals required (in addition to ethics clearance from UREC) in order to carry out the proposed research study?

[✓] YES   [ ] NO

If YES, please specify (maximum 100 words).

The qualitative part of the study will be conducted within the top teacher training institutions in the selected countries. Thus, the researcher will send a Gatekeepers letter to the directors of these respective institutions seeking approval for the curriculum or program directors to participate in the study. Also, even though it will be an individual choice on the part of the teachers as to whether or not they want to participate within the study, the fact that the survey might be administered during working hours the permission of the respective school principals will also be sought through a Gatekeepers letter.

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6. **Potential Risks of the Proposed Research Study**

Are there any potential risks, psychological harm and/or ethical issues associated with the proposed research study, other than risks pertaining to everyday life events (such as the risk of an accident when travelling to a remote location for data collection)?

☐ YES   ☑ NO

If YES, please specify (maximum 150 words):

7. **Application Checklist**

Please mark √ if the study involves any of the following:

☐ Children and young people under 18 years of age, vulnerable population such as children with special educational needs (SEN), racial or ethnic minorities, socioeconomically disadvantaged, pregnant women, elderly, malnourished people, and ill people.

☐ Research that foresees risks and disadvantages that would affect any participant of the study such as anxiety, stress, pain or physical discomfort, harm risk (which is more than is expected from everyday life) or any other act that participants might believe is detrimental to their wellbeing and / or has the potential to / will infringe on their human rights / fundamental rights.

☐ Risk to the well-being and personal safety of the researcher.

☐ Administration of any substance (food / drink / chemicals / pharmaceuticals / supplements / chemical agent or vaccines or other substances (including vitamins or food substances) to human participants.

☐ Results that may have an adverse impact on the natural or built environment.

8. Final Declaration by Applicants:

(a) I declare that this application is submitted on the basis that the information it contains is confidential and will only be used by Unicaf University and Unicaf University Research Ethics Committee (UREC) for the explicit purpose of ethical review and monitoring of the conduct of the research proposed project as described in the preceding pages.

(b) I understand that this information will not be used for any other purpose without my prior consent, excluding use intended to satisfy reporting requirements to relevant regulatory bodies.

(c) The information in this form, together with any accompanying information, is complete and correct to the best of my knowledge and belief and I take full responsibility for it.

(d) I undertake to abide by the highest possible international ethical standards governing the Code of Practice for Research Involving Human Participants, as published by the UN WHO Research Ethics Review Committee (ERC) on http://www.who.int/ethics/research/en/ and to which Unicaf University aspires to.

(e) In addition to respect any and all relevant professional bodies' codes of conduct and/or ethical guidelines, where applicable, while in pursuit of this research project.

(f) I understand it is my responsibility to submit a full REAF application during Dissertation Stage 3 to UREC. If a REAF application is not submitted my project is not approved by UREC.

(g) I fully acknowledge that this form does not constitute approval of the proposed project but it is only a provisional approval.

☑ **I agree with all points listed under Question 8**

Student's Name: Kenisha Taylor

Supervisor's Name: Chrysa Tamisoglou

Date of Application: 28-Apr-2020

Important Note:
Please now save your completed form (we suggest you also print a copy for your records) and then submit it to your UU Dissertation/project supervisor (tutor). **In the case of student projects, the responsibility lies with the Faculty Dissertation/Project Supervisor.** If this is a student application, then it should be submitted via the relevant link in the VLE. Please submit only electronically filled in copies; **do not** hand fill and submit scanned paper copies of this application.

☑ Before submitting your application, please tick this box to confirm that all relevant sections have been filled in and the information contained is accurate to the best of your knowledge.

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UU_IC - Version 2.1

Informed Consent Form

Part 1: Debriefing of Participants

Student's Name: Kenisha Taylor

Student's E-mail Address: kenishataylor65@gmail.com

Student ID #: R1806D5516885

Supervisor's Name: Dr. Chrysa Tamisoglou

University Campus: Unicaf University Zambia (UUZ)

Program of Study: EdD - Doctorate of Education

Research Project Title: Relationship Between Teacher Training Programs and Male Academic Performance within the Anglophone Caribbean.

Date: 23-May-2021

Provide a short description (purpose, aim and significance) of the research project, and explain why and how you have chosen this person to participate in this research (maximum 150 words).

This study seeks to explore the relationship between the way teachers within the Caribbean are trained to teach and the issue of male academic performances. As such, the research aims to investigate whether there is a direct relationship between teacher training programs and male academic performance within the Anglophone Caribbean. A significant number of studies have been conducted examining the factors contributing to male underachievement. However, it is doubtful that any study has been done examining the relationship between teacher training programs and male underachievement. Thus, with increasing concern about male underachievement and the inadequacy of teachers' preparation within the region, a study of this nature needs to be conducted.

Teachers across the region are deemed the most vital and meaningful to such a discourse. Thus, your assistance as a participant in the study was either directly solicited by me or you were recommended by a colleague.

The above named Student is committed in ensuring participant's voluntarily participation in the research project and guaranteeing there are no potential risks and/or harms to the participants.

Participants have the right to withdraw at any stage (prior or post the completion) of the research without any consequences and without providing any explanation. In these cases, data collected will be deleted.

All data and information collected will be coded and will not be accessible to anyone outside this research. Data described and included in dissemination activities will only refer to coded information ensuring beyond the bounds of possibility participant identification.

I, | Kenisha Taylor | , ensure that all information stated above is true and that all conditions have been met.

Student's Signature: Kenisha J. Taylor

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| **Informed Consent Form** |
| **Part 2: Certificate of Consent** |

This section is mandatory and should to be signed by the participant(s)

Student's Name: Kenisha Taylor

Student's E-mail Address: kenishataylor65@gmail.com

Student ID #:   R1806D5516885

Supervisor's Name: Dr. Chrysa Tamisoglou

University Campus: Unicaf University Zambia (UUZ)

Program of Study: EdD - Doctorate of Education

Research Project Title: Relationship Between Teacher Training Programs and Male Academic Performance within the Anglophone Caribbean.

I have read the foregoing information about this study, or it has been read to me. I have had the opportunity to ask questions and discuss about it. I have received satisfactory answers to all my questions and I have received enough information about this study. I understand that I am free to withdraw from this study at any time without giving a reason for withdrawing and without negative consequences. I consent to the use of multimedia (e.g. audio recordings, video recordings) for the purposes of my participation to this study. I understand that my data will remain anonymous and confidential, unless stated otherwise. I consent voluntarily to be a participant in this study.

Participant's Print name:

Participant's Signature: _____

Date:

If the Participant is illiterate:

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had an opportunity to ask questions. I confirm that the aforementioned individual has given consent freely.

Witness's Print name:

Witness's Signature: _____

Date:

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