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The Education System in Barbados

A Remarkable Evolution

Nigel O. M. Brissett

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Abstract

This chapter explores current developments in Barbados’s education system and makes important linkages to the complexities of its colonial past. Beginning with a discussion of the historical and social foundations of Barbados, the chapter discusses the makings of Barbados as a country and society out of which the education system emerged, revealing deep negative colonial impacts on educational development. The chapter also examines the earliest of education provision

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developed through religious foundations and the advent of emancipation, and discusses how European settlement patterns on the island also facilitated the emergence of formal schooling. The chapter then discusses the institutional and organizational principles of Barbados's modern education system developed in its independence periods during which a strong belief in the virtues and potential of education lead to educational policy-planning, financing, governance, and administrative structures at all educational levels. Finally, in Section 3 we find out how these developments, along with increasing economic stability, have led Barbados to be one of the most literate societies in the world. Section 4 examines Barbados's educational trends and other aspects of the educational system and how they shape current efforts at developing a technologically educated society that will drive national development and compete in the global economy.

Keywords

Barbados · Caribbean · Education system · Colonialism, Globalization

1 Introduction

Barbados is a small island developing state (SIDS) located in the Caribbean. Originally inhabited by Amerindian tribes, the island was first visited by Europeans when Portuguese sailors and then formally colonized by the British in 1627 and remained under this empire until independence in 1966. With a history of colonialism, enslavement, and indentured servitude, about 80% of Barbadians are of Africans descent, with rest of the population comprised of Whites, East Indians, and mixed races. Barbados has a land area of 430 sq. km (166 sq. mi). Barbados's population is 285,744 with annual growth rate of 0.22% (World Bank 2018a) and one of the most densely countries in the world. Life expectancy is estimated at 75 (World Bank 2018b). Barbados's official language is English, used as the language of instruction in school. There is also a local creole language called "Bajan." Barbados has a representative Democratic Government, and is part of the Caribbean Community (CARICOM), a regional political economic cooperative framework. The country has achieved a very high human development status based on the UNDP's Human Development Index and has been ranked among the top 50 countries in the World. With a favorable record of economic performance and social development (Ministry of Finance and Economic Affairs 2013), Barbados has a GDP per capita of US\$16,800. Unemployment is estimated at about 10%. Educationally, Barbados has achieved near universal education, with almost 97% of children attending primary education and 91% attending secondary education in 2019 (UNESCO Institute of Statistics 2020). The literacy rate as of 2014 for age group 15–24 was 99.9% (males 99.92%, females 99.99%); for the age group 15 years and older it was 99.6% (male 99.6%, female 99.6); for the age group 65 years and older it was 98% (male 98.6%, female 98.5%).

This chapter has three main sections: Historical and social foundations, institutional principles, and educational trends and highlighted aspects. The historical and social foundations section discusses the makings of Barbados as a country and society out of which the education system emerged. As such, it explores the colonial expansion of Europeans into the Caribbean region, and discusses how plantation slavery limited formal educational provision for long periods of Barbados's early history. The chapter also examines the earliest of education provision developed through religious foundations and the advent of emancipation, and discusses how European settlement patterns on the island also facilitated the emergence of formal schooling. The chapter then discusses the institutional and organizational principles of Barbados's modern education system. Here, the focus is on the post-World War II and independence periods during which a strong belief in the virtues and potential of education led to strategic educational policy planning and investment. Educational policies, legislation, financing, governance, and administrative structures at all educational levels are examined. Ultimately, in Section 3 we find out how these developments, along with increasing economic stability, have led Barbados to be one of the most literate societies in the world. Section 4 examines the educational trends and other aspects of the educational system and how they shape current efforts at enriching the country's human capital, for example, by developing a technologically educated society that will drive national development and compete in the global economy.

2 Historical and Social Foundations

Barbados's current education system reflects historical colonial complexities with links to colonial expansion of Europeans into the Caribbean region. Thus, the formation of the island's formal education system can be traced and understood, initially, in the context of how plantation slavery limited educational provision for long periods of Barbados's colonial history. The complexities of the colonial agenda meant that rather than coming from local plantation class, education provision developed through religious foundations. Emancipation provided more deliberate and concerted commitments to educational expansion and, later, the post-World War II and independence periods led to educational policy planning and investment on a more universal scale. These developments, along with increasing economic stability, have led Barbados to be one of the most literate societies in the world. Contemporary efforts have been more geared toward enriching Barbados's human capital by developing a technologically educated society to drive national development and compete in the global economy.

This section focuses on the historical background to education in Barbados in the colonial period, including the restrictive availability of education in the context of plantation slavery and its mixed provision through religious foundations as well in the immediate post-emancipation era. The second part of this section also examines the post-World War II and independence periods during which a strong belief in the virtues and potential of education led to educational policy planning and

investment. More specifically, this section examines political economic and cultural conditions, as well as the social conditions, including educational coverage. The section ends with a discussion of the systems of transition from education to the labor market.

2.1 Education in Colonial Barbados: 1627–1966

Barbados's current education system, policy, and practices can best be understood through the lens of history reaching back to its colonial encounters. Without such a deep historical understanding, post–World War II and current achievements, challenges, and aspirations can never be fully appreciated. Barbados was named by Portuguese sailors as “os Barbudos” (“the bearded ones”) based on the appearance of the island's fig trees that have long hanging aerial roots. Formally colonized in 1627 by the English, Barbados was previously inhabited by Amerindian tribes who largely disappeared through a combination of death through enslavement and migration after colonial encounters. The island remained a British colony until its independence in November 1966.

Like other countries in Anglophone Caribbean, education eventually came to Barbados as an attempt to transfer cultural values from England (Blouet 1981; Bacchus 1990). Education of the enslaved was considered dangerous as it was believed that literacy would allow them to read about the antislavery discourse and emancipation efforts in Britain, which would trigger rebellions (Petley 2005). Educating slaves for Christianity was not encouraged by planters who preferred to consider slaves as chattel, as viewing them as humans and Christians challenged the notion of slavery, since it was generally held that Christians should not enslave other Christians. In fact, the only institution that provided instruction to slaves in Barbados was Codrington estate, run by the Society for the Propagation of the Gospel (Bennett 1958). During this period it was customary for the white wealthy plantation owners and merchants to send their children, especially boys, to England to be educated. The poorer whites would go to private schools operated by the clergy (Ministry of Education, Youth Affairs and Culture 2000). There was also the gendered component, as white girls were educated largely to be housewives, focusing on domestic subjects such as needlecraft.

Attempts at mass education for the Black majority only emerged in response to emancipation in the early to mid nineteenth century and therefore came to play a central role in the transition from slavery to freedom. Once it became clear that slavery was coming to an end, it was widely feared that the emancipation of Blacks would simply withdraw their labor from the estates and “revert to barbarism, leaving the economies of the islands in ruins” (Blouet 1981, p. 223). It was hoped that the introduction of education would help the ex-slaves to accept the new ideas of living and working in a free society. Thus, even after emancipation, education served as a control mechanism. As Blouet (1981) points out, education “was not merely associated with the teaching of literacy and numeracy skills, but was very closely identified with imparting religious and moral values” (p. 222).

In 1823 the British government started what can be viewed as a transition from slavery, which explicitly involved Christianizing and “civilizing” the slaves; this movement toward emancipation was formally adopted by the Barbadian legislature as the Consolidated Slave Act beginning in 1825. This Act placed restrictions on slave labor especially as it related to allowing slaves time off on designated worship days and other Christian-related privileges and permitting the establishment of Sunday schools for Christianization and educational purposes. The first piece of major education expansion and commitment occurred in 1833 (accompanying the emancipation act) when the British parliament, during emancipation debate, agreed to financial assistance for the soon to be emancipated slaves through the Negro Education Grant of 20,000 pounds for the West Indies (Annual Register 1833; Blouet 1981). The first Education Act was passed and provided for the establishment of an Education Committee, with a part-time Inspector as its Executive Officer. Education was increasingly seen as a way to further exert mental control in ways that would allow social control and stability of the plantation economic system. As Blouet (1981) points out, “the major aim of education. . .was to provide a moral foundation, upon which the social and economic patterns of Barbadian life could continue to operate, in much the same way as in the slavery era” (Blouet 1981, p. 227).

The Negro Education Grant contributed a further 120,000 pounds to the West Indies between 1838 and 1841. However, a change of government in England led to the end of the Grant by 1846, like the rest of the West Indies, limiting further expansion of education (Blouet 1981; Bacchus 1990). Thus, the 1830s to the 1840s represented the first period of major expansion of educational provision in Barbados in the transition from slavery to the emancipation era. As it relates to educational pedagogy and content during this time of expansion, elementary education in Barbados was very similar in format, books used, and types of instruction to that provided to working-class children in Britain by religious groups, with no adjustments for difference in context and experiences of Barbados. Yet the newly freed population were eager to learn, and linked education to the acquisition of rights and property ownership (Blouet 1990). From early, education became an important tool and commodity to the enslaved and formerly enslaved. Education brought a certain amount of freedom in and of itself and the capacity to take part in society, for example, by providing the literate the eligibility to give evidence in court. The increasing value placed on education became a feature of Barbados in the coming centuries.

Starting in 1845 the colonial government in the country gradually increased funding of education, and mass schooling was available at the beginning of the twentieth century (Tsang et al. 2002). Up to the first half of the twentieth century, mass primary education, along with limited access to post-primary school, marked educational provision in Barbados (Tsang et al. 2002). Like in other countries across the region, the Common Entrance Exam (also known as the Barbados Secondary School Entrance Examination, BSSEE, or the 11+ examination), a primary school high-stakes exam to enter high schools, was introduced. It became the gatekeeper of entrance to post-primary educational opportunities. The Common Entrance

Examination was run by the central government and represented a seemingly more equitable mechanism compared to the previous system of each secondary school using its own selection mechanisms. In 1948 the Erdiston Teachers' Training College was opened to facilitate training of educators for the expanding education system. Demand for formal schooling only grew during the 1950s, leading to the establishment of more secondary schools but also the widening of differences in quality that by the time of its independence in 1966, Barbados's education systems, like across the Caribbean, had significant disparities in quality and reach.

2.2 Education in Barbados in the Post–World War II/Post-Independence Period

In the late pre-independence and early post-independence periods, education continued to serve as a mechanism to facilitate national transition, this time “from a colony to an independent state, and from an elitist society toward a more egalitarian society” (Tsang et al. 2002, p. 53; see also Layne 1999). Ensuing policies focused on building greater educational access marked by vastly improving secondary provision supported by increased government spending. School fees at public secondary schools were abolished in 1962 with government aid being extended to independent schools by 1965, and in 1963 the “School Meals Program” was piloted. In 1969 the Barbados Community College was opened to provide more diversified opportunities. However, there was a shift to “cost effectiveness” under a new administration in 1976, resulting in reduced educational expenditure by the mid-1980s. Yet this period also brought about expansion of the secondary education system and the post-secondary system, as well as the expansion and restructuring of teacher training opportunities. The recently established University of the West Indies also underwent reforms to make each campus more relevant to each campus-resident country and the broader region (Layne 1999). The University of the West Indies (UWI) was founded in 1948 as the University College of the West Indies (UCWI), an affiliate of the University of London, and eventually gained its own charter in 1962, thus becoming The University of the West Indies (UWI). The first campus of UCWI was situated at Mona, Jamaica, and in 1963 a campus was established in Barbados, initially housed in a site near the Bridgetown Harbor and eventually moved to its current location at Cave Hill in 1967.

Layne (1999) notes that “the achievements in the area of educational reform over the decade 1976–1986 is impressive” (p. 125). This period also witnessed the official opening of the Samuel Jackman Prescod Polytechnic. However, Layne (1999) cites some missteps, such as the over centralization of education management in the Ministry of Education and the continued support for academic-oriented programs over vocational and technical programs through the administration of the students' loan system that was established in 1977. In the latter half of the last century, Barbados economy shifted from an agrarian and manufacturing economy to one reliant on tourism, light manufacturing, offshore finance, information technology, and insurance services (Pirog and Kioko 2010). During this transition the

government realized that its education system should be restructured to better prepare students for a competitive technologically driven global economy. This resulted in the *White Paper on Education Reform: Preparing for the Twenty-First Century* in 1995, which became known as the EduTech program (Pirog and Kioko 2010). This document is significant because in it one can identify the government's attempt to foment a knowledge revolution in the Barbados education system through the use of computer technology in the educational process, which involved:

1. Physical rehabilitation of schools
2. Integrating learning technologies
3. Curriculum reform
4. Human resource development including teacher training

Other educational reform initiatives include:

- 1990 National Advisory Commission on Education (NACE) to undertake the advancement of EFA goals.
- Education Sector Strategic Plan 2002–2012 to sustain EFA goals.
- Human Resource Development Strategy, 2011–2016.
- Adoption of the *CARICOM's Caribbean Single Market and Economy (CSME)*, which creates a single economic space for member countries. The principles of Movement of skilled professionals under CSME have important implications for education and qualifications framework for Barbados like other member countries.

The post–World War II/post-independence period was defined by a distinct shift from colonial type education characterized by significant limitations to a period where Barbados focused on expanding educational provision. Thus, the emerging policies focused on improving access at all educational levels. Specific strategies focused on abolishing school fees, introducing school feeding programs, establishing of educational institutions at all levels, and expanding teacher training. With the shifting from an agrarian and manufacturing economy to service and technology-based economy in the late twentieth century, educational policies started focusing on developing a more technologically skilled society.

2.3 Geography and Physical Features, Political System, and Economic Structure

Barbados is the most easterly of the Anglophone Caribbean islands, with a land area of 34 km long north to south and 23 km wide east to west making a total of 430 sq. km (166 sq. mi). Annual rainfall ranges from about 100 cm (40 in) in some coastal districts to 230 cm (90 in) in the central ridge area. There is a wet season from June to December, but rain falls periodically throughout the year. With a tropical climate, temperatures range from 21 to 30°C (70–86°F).

Barbados's population at 2017 is listed as 285,744 with annual growth rate of 0.22% (World Bank 2018a). Barbados is one of the world's most densely populated countries (fourth most densely populated country in the Americas, and 15th globally) (World Population Review 2019). About 80% of Barbadians, or Bajans, are descendants of enslaved Africans brought to the island during the period of slavery. The rest of the population is comprised of Whites (4%), East Indians, and people of mixed descent and mixed races. Life expectancy is estimated at 75 (World Bank 2018b). Barbados's official language is English and used as the language of instruction in school. There is also a local creole language called "Bajan."

Barbados has a representative Democratic Government, and the island is divided into 30 constituencies. Its Parliament, the third oldest in the world with 358 years of uninterrupted governance, holds legislative power and is composed of a 30-member elected House of Assembly, a 21-member appointed Senate (Upper House), and the Governor General. The Cabinet directs and controls the government. The British monarch is the official head of state represented by a governor general with limited, ceremonial power. Barbados is also part of the Caribbean Community (CARICOM), a regional political economic cooperative framework.

Barbados has achieved a very high human development status based on the UNDP's Human Development Index which combines indicators of health and educational status and livelihood. Since 1990, Barbados has been ranked among the top 50 countries in the World, and has a favorable record of economic performance and social development (Ministry of Finance 2013). Barbados is classified as a Small Island Developing State (SIDS) with a GDP per capita of US\$16,800. Unemployment is estimated at about 10%. Barbados's earliest colonial and post-colonial economies were based on sugar cultivation; however, through successive government efforts in the post-independence era, the island moved from an agrarian based economy to a more diversified one characterized by light to semi-heavy manufacturing and services. Over the years, tourism and financial services have grown to become major contributors to the economy (Ministry of Finance and Economic Affairs 2005).

Barbados experienced general prosperity and sustained growth in the 1950s and 1960s but this slowed in the early 1970s. The economy began to stagnate, largely due to a drop in private investment manufacturing and tourism, its most dynamic sectors. Additionally, sugar output showed a rapid decline, further problematizing its narrow resource base and open economy (World Bank 1975). Like many other countries in the region, and globally in the 1980s, Barbados experienced a downturn in its economy. Since then its economy has done well as evidenced by its comparably high GDP in the Caribbean region; however, as a small, open developing country, Barbados is vulnerable to external shocks such as those which occurred in 2001 and 2008–9, leading to a restriction in output, increase in unemployment and, as a consequence, an increase in transient poverty during those periods (Ministry of Finance and Economic Affairs 2013). More recently, the government has emphasized the importance of developing competence in science and technology to tap into the global "knowledge based" economy. This new focus on the knowledge capital production has important implications for education.

Barbados has a history rooted slavery and colonialism, which impacted the development of formal education overtime, including the restrictive availability of education during this period. The limited provision of education expanded in the immediate post-emancipation era and took on even more deliberate development in post–World War II and independence periods to extensive educational policy planning and investment. As a small middle-income country, Barbados, with a parliamentary democracy, has enjoyed political stability and relatively steady economic growth. This country has also invested heavily in educational development since its independence.

2.4 Social Conditions: Provision/Coverage of Population

The literacy rate as of 2014 for age group 15–24 was 99.9% (males 99.92%, females 99.99%); for the age group 15 years and older it was 99.6% (male 99.6%, female 99.6); and for the age group 65 years and older it was 98% (male 98.6%, female 98.5%). Currently, the education system in Barbados caters to almost 60,000 students annually, and across the system there are 136 institutions designed to cater to the diverse needs of the population. Education is largely provided by public institutions, but there are also privately run schools as well as some by nongovernmental organizations (NGOs). The Ministry of Education, Technological and Vocational Training (2017) indicates that there are 68 public primary schools and 26 private primary/mixed schools. At the secondary/high level, there are 22 public schools and 9 private secondary/mixed schools. It is estimated that private schools account for only about 9% of the primary and secondary school population (Rudder 2014). Barbados’s social support system for education covers essential educational needs to ensure that children from birth to age 16 have access to education. There is a free textbooks program at the primary level, subsidized textbook loan scheme for students at the secondary level, free travel on public-owned buses, a subsidized textbook school feeding program, school uniform grant, free health care as well as subventions and bursaries to government-assisted private schools (Rudder 2014).

Participation at all educational levels is high (see Tables 1 and 2), with primary education net enrollment participation as high as 96.7 percent, and secondary education net enrollment 91.4 percent in 2019 (UNESCO Institute of Statistics 2020). There is gender parity of enrollment at the primary level over the past few years, but slightly higher enrollment of girls at the secondary level (UNESCO 2020). While tertiary data (see Table 3) for the most recent years is limited, the data that do exist suggests gross enrollment rates of over 65 percent with markedly higher rates for female (UNESCO Institute of Statistics 2020).

2.5 Transition to Labor Market: Organization and Support

As mentioned previously, in the latter half of the last century, Barbados’s economy shifted from an agrarian and manufacturing economy to one reliant on tourism, light

Table 1 Primary education participation rate

Primary Education	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Gross enrollment ratio										
Total	99.6	98.28	–	–	95.19	95.92	97.28	97.77	99.35	100.34
Female	100.4	98.32	–	–	95.41	95.57	97.17	96	97.47	98.16
Male	98.83	98.25	–	–	94.99	96.25	97.39	99.48	101.18	102.46
Net enrollment ratio										
Total	95	93.4	–	–	92.5	93.8	95.4	95	96.7	96.7
Female	95.7	93.9	–	–	93.2	94.1	95.9	94.2	95.7	–
Male	94.3	93	–	–	91.9	93.5	95	95.8	97.6	–

Source: UNESCO Institute of Statistics (2020)

Table 2 Secondary education participation rate

Secondary Education	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Gross enrollment ratio										
Total	101.91	103.64	–	–	108.12	107.53	106.51	106.33	103.7	102.71
Female	102.14	105.56	–	–	109.67	109.46	109.11	108.57	105.75	104.93
Male	101.69	101.76	–	–	105.65	105.69	104.05	104.21	101.76	100.6
Net enrollment ratio										
Total	85.2	88.8	–	–	99.3	98.1	96	95.9	93.6	91.4
Female	85.1	91.6	–	–	100	–	–	–	96.8	94
Male	85.2	86.2	–	–	98.6	–	–	–	90.6	88.8

Source: UNESCO Institute of Statistics (2020)

Table 3 Tertiary education participation rate

Tertiary Education	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Gross enrollment ratio										
Total	69.4	65.4	–	–	–	–	–	–	–	–
Female	95.8	90.6	–	–	–	–	–	–	–	–
Male	43.9	40.3	–	–	–	–	–	–	–	–

Source: UNESCO Institute of Statistics (2020)

manufacturing, offshore finance, information technology, and insurance services (Pirog and Kioko 2010). During this transition the government realized that its education system should be restructured to better prepare students for a competitive technologically driven global economy. The government also acknowledged “the traditional heavy emphasis on elementary, low skilled occupations that has traditionally characterized its employment service” (Ministry of Labour, Social Security and Human Resource Development 2014, p. 44). Barbados now seeks to “ensure that the proportion of professional and technical array of jobs on offer are substantially increased.” And since around 2014, the government has been structuring the education system for more deliberate linkages to the labor market. The government noted that “information on the current and future skills needs and occupational requirements of industry is one of the most critical challenges confronting the further development of the labor force” in Barbados (Ministry of Labour, Social Security and Human Resource Development 2014, p. 44). This is particularly important in aligning educational system and the labor market to create an “occupational labor market” where education and vocational training are tightly coupled with the labor market (Muller and Gangl 2003; Ministry of Labour, Social Security and Human Resource Development 2014, p. 44). This entails a shift from a system that seemed to be more like an “organizational labor market,” where the school to work transition is less structured and loosely coupled (Muller and Gangl 2003; Ministry of Labour, Social Security and Human Resource Development 2014). As the government has pointed out, stakeholders such as graduates of tertiary institutions may invest their time, efforts, and other resources pursuing studies in a specific area, only to find that upon graduation, they encounter extreme difficulty in finding employment within the area they have studied (Ministry of Labour, Social Security and Human Resource Development 2014). The end result of this issue tends to be long-term unemployment, fruitless job searches, underemployment, and frustration from being in a job that is not fully utilizing the skills that have been acquired. Employers too encounter challenges with the quality of skills sets acquired by employees that graduate from Barbados’ tertiary institutions, as employers may be demanding a specific set of competencies from their employees that training institutions may not be supplying (Ministry of Labour, Social Security and Human Resource Development 2014).

To ameliorate this problem and to support better transition from education to the labor market, the government, particularly since 2014, has been implementing plans that (1) enhance Career Guidance and Counseling for the Adult Population,

including “increased collaboration with relevant stakeholders to improve career and guidance counseling of students”; (2) promote Technical and Vocational Education and Training in Barbados; and (3) improve the Certification of the Barbados Labor Force, including development of a National Qualification Framework (Ministry of Labour, Social Security and Human Resource Development 2014, p. 20). Additionally, designed to improve the employability of labor are in place, the National Employment Bureau (NEB) offers free labor market information services for job seekers, and undertakes career counseling and job application services (Kandil et al. 2014).

3 Institutional and Organizational Principles

Barbados has a strong democratic system which is reflected in its education policy making framework that has various checks and balances as well as systems of accountability. Educational policy is mostly centralized and is generally made based on expressed vision of the role of education in national development. Education policies are developed within the Ministry of Education in collaboration with other ministries of government and stakeholders regarding financing, curriculum and pedagogy, entry and exit requirements, equity, personnel, among other education areas. This section details these broader educational institutional and organizational principles by discussing issues around educational financing, administration and governance, education system structure and classification, and personnel issues related to teacher training and qualifications.

3.1 General Principles

The Ministry of Education, Technological and Vocational Training (METI) oversees the education system. The Ministry is headed at the administrative level by a Permanent Secretary and at the technical level by the Chief Education Officer. These officers are assisted by a Deputy Permanent Secretary, two Deputy Chief Education Officers, and a cadre of staff at Ministry Headquarters (METI website 2019). The Ministry’s stated mission and goals are “to ensure equitable access to quality education for all our citizens so that their potential is fully realized” and “to assist in the development of responsible citizens who are disciplined, industrious, creative and confident and who can function effectively in a modern society” (METI website 2019, p. 1). These principles translate into a number of specific goals, namely to provide quality education for all at all levels of the education, technical and vocational training system in order to build careers and contribute to the development of the Barbadian economy and society. The principles outlined by the Ministry of Education also emphasize the importance of educational policies for youth development “to produce citizens who are well-balanced, disciplined, industrious, creative, self-reliant persons who can think critically and function effectively in a modern society” (METI website 2019, p. 1). These broader goals are further

delineated by several objectives that make specific references to particular social groups, institutions, and development targets such as students with disabilities and special needs, preventative measures for HIV/AIDS, to expand access to all levels of education, to improve the integration of technology in the educational processes, and to improve monitoring and evaluation of educational policy and practice.

The METI oversees the educational systems and is guided by the mission to provide equitable access to quality education and to cater to diverse needs of the society and local and global market economy and facilitate partnership between institutional stakeholders of the education system. As such, the METI has outlined guiding goals and objects for various stakeholders within the educational system.

3.2 Education Administration and Governance

Having primary responsibility for the formulation of education policy and the administration and regulation of education programs, the METI has undergone a number of changes in recent years. For example, in 2013, the METI was also given responsibility for national policy and program development for science, technology, and innovation, an indication of the growing importance of science and technology as part of the country's education and development planning (METI website 2019). In response to twenty-first-century challenges and opportunities, the Ministry has increased its focus on building an education system for the "knowledge-based economy" and has been emphasizing continued changes in information and communication technologies in order to use these areas to shift to a national philosophy that promotes "education as a tool for national development" (METI website 2019, p. 1). As such, education is being promoted "as a lifelong learning process, which seeks to produce outcomes that are culturally-based, technologically-driven, diverse and dynamic" (METI website 2019, p. 1). The Ministry also emphasizes continued focus on long held values, such as education to build tools "to continue growing as an all-embracing, cohesive society" in addition to its increasing emphasis on science and technology.

The government has shown a commitment to educational spending since its independence. In 2015/2016, Barbados spent about 5% of its GDP on education, representing 11% of total government expenditure (Ministry of Education, Technological and Vocational Training 2017). In 2015/2016, pre-primary, primary, and special needs education was allocated 36.65% of the total education budget, secondary education 25.89%, and tertiary education 25.78% (Ministry of Education, Technological and Vocational Training 2017). Public current expenditure on education as a percentage of public spending on education was 94%, while public capital expenditure on education as a percentage of public spending on education was 6%.

3.3 Structure of the Educational System According to ISCED-Classification

The education system has four main levels: pre-primary/early childhood, primary, secondary, and post-secondary/tertiary. With compulsory education starting at age 5, the pre-primary level caters to children 3 to 5 years old, primary serves the 5 to 11 years old, secondary education levels generally support children aged 11 to 16 years. Tertiary education generally starts at age 16+ (see Table 4).

Education is largely provided by public institutions, but there are also privately run schools as well as some by nongovernmental organizations (NGOs). The Ministry of Education, Technological and Vocational Training (2017) indicates that there are 68 public primary schools and 26 private primary/mixed schools. At the secondary/high level, there are 22 public schools and 9 private secondary/mixed schools. It is estimated that private schools account for only about 9% of the primary and secondary school population (Rudder 2014). Student enrollment at the pre-

Table 4 Structure of the education system

Program Level		Duration	Age at Start	Year Level	Institution Type
Pre-primary		2	3	Nursery	Nursery School; Primary School
			4	Reception	
Primary		6	5	Infants A	Primary School
			6	Infants B	
			7	Class 1	
			8	Class 2	
			9	Class 3	
			10	Class 4	
Secondary		5	11	Form 1	Secondary School
			12	Form 2	
			13	Form 3	
			14	Form 4	
			15	Form 5	
Special Needs		–		Special Needs	Primary School; Special Needs School
Post-Secondary Non-Tertiary		2	16	Lower 6 Form	Secondary School
			17	Upper 6 Form	
		2	16	–	Technical Institute Community College
Tertiary	Under-graduate	3	18	–	University Community College Teachers College
Tertiary	Post-Graduate	1	21	–	Teacher's College
		2	21	–	University
		3–5	23	–	University

Source: Ministry of Education, Technological and Vocational Training (2017)

primary, primary, special, and secondary education levels stood at 46,812 with 23,738 boys and 23,074 girls. Gender parity index (GPI) is 1.01. Recently, the government has been placing more of its efforts into improving quality as represented in achievement on the Barbados Secondary School Entrance Examinations (BSSEE) external examinations results. The Caribbean Examination Council (CXC) is used to assess the performance of students completing secondary education and to select students for sixth form/Caribbean Advanced Proficiency Examinations (CAPE).

At the post-secondary/tertiary level, 13 institutions provide education: 9 public secondary schools that offer two years of post-secondary non-tertiary/sixth form; 1 public institution, Samuel Prescod Polytechnic, that solely provides post-secondary non-tertiary education; tertiary education is provided by public institutions, Erdiston Teachers' Training College (ETTC), the Barbados Community College (BCC), and the University of the West Indies (UWI) Cave Hill Campus. Enrollment at the post-secondary non-tertiary education/sixth form (females 1682 and males 2219), and tertiary level (females 6275 and males 3244) stood at 13,420 during the 2015–2016 academic year. There is significant tertiary institutional collaboration, which aids tertiary enrollment level to be one of the highest in the Caribbean at 65% (2011) of qualified cohort (UNESCO Institute of Statistics 2020). The Higher Education Development Unit (HEDU) within the Ministry of Education was established in 2008 to facilitate institutional strengthening initiatives across the Barbados Community College (BCC), Samuel Jackman Prescod Polytechnic (SJPP), and Erdiston Teachers' Training College (ETTC). There are also close collaborations, such as articulations arrangements, between the UWI and these institutions. In addition, there are several overseas domiciled tertiary institutions that provide education in Barbados. The Barbados Accreditation Council (BAC) is charged with accreditation and quality control of post-secondary/tertiary education and training programs. More specifically, at the institutional level, this body assures the quality and accreditation of all local, regional, and foreign post-secondary institutions operating in Barbados, as well as informs the public of the quality and validity of these institutions and their programs of study. At the programmatic level, BAC validates courses assesses and validates courses offered in Barbados.

3.4 Personnel Supply

Founded in 1948, Erdiston College is charged with providing teacher training in Barbados and the Eastern Caribbean. Erdiston College became a constituent college of the School of Education of the University of the West Indies in 1964. The close relationship between the University of the West Indies and Erdiston College still continues especially in areas such as assessment and accreditation. The UWI Cave Hill offers a Diploma in Education as an in-service program for secondary teachers who possess a first degree but have not been exposed to any professional training in teaching. UWI also delivers a BA in education. While in 2015/2016 most of the almost 3500 teachers at the pre-primary, primary, special, and secondary education

Table 5 Teacher supply and training: pre-primary, primary, special, and secondary Education

	Males	Females	Total Trained/Untrained (%)
Total	940	2511	
Percent trained	56	66	63
Percent untrained	44	34	37

Source: Ministry of Education, Technological and Vocational Training (2017)

levels are trained (63%: [66% females and 56% males]), there is a large percent of untrained teachers (37% [34% females and 44% males]) (see Table 5).

As part of the broader strategy to enhance education quality in Barbados, the government, through the support of Caribbean Development Bank (CDB), launched the School Teacher Effectiveness Plans (STEPs) project in 2017. As the CDB (2017) notes, STEP's was "framed within the context of identifying models and tools to guide teachers towards being more effective" (Caribbean Development Bank 2017, p. 1). The project seeks to enhance the physical learning environment, build capacity among classroom practitioners and teacher trainers, and identify and implement more scientific methods of education planning.

Barbados's educational policy framework is largely centralized in the Ministry of Education and Vocational Training (METI). Education policies are developed by METI in collaboration with other ministries of government and stakeholders regarding financing, curriculum and pedagogy, entry and exit requirements, equity, personnel, among other education areas. With a stated mission to ensure equitable access and to develop responsible citizens through education, the government has shown its commitment to education by spending about 5% of its GDP on education, which represents 11% of its total government expenditure. Recent governance changes have focused on education for the "knowledge-based economy" for a country that has a near universal literacy rate.

4 Educational Trends and Highlighted Aspects

Among the most visible trends in Barbados's education are: the integration of STEM education as a core strategy toward national development; implementation of ICT as part of pedagogy and the improvement of teacher capacity; and the reduction of inequality that is especially visible at the secondary level through the disparities in educational achievement which are tied to the school selection mechanism that are themselves functions of class and economic privilege. The government has been developing and implementing various policy initiatives and strategies to address the related challenges and meet their aspirations. This section discusses issues of inequality in the education system, the role of ICT, and the STEM fields. This section also examines Barbados's current efforts at enhancing its human capital by focusing on technological as a currency in the global economy.

4.1 Inequality

Barbados provides equal access to education at all levels. The country has achieved gender parity in the participation of boys and girls in education (1:01), a reflection of long-term efforts through funding commitment and legislation for equal access to education. There are broad social support services for education to ensure that children from birth to age 16 have access to education. For instance, there is a free textbooks program at the primary level, subsidized textbook loan scheme at the secondary level, free travel on public-owned buses, a subsidized textbook, school feeding program, school uniform grant, free health care as well as subventions and bursaries to government-assisted private schools (Rudder 2014). Barbados has placed much emphasis on programs that focus on students' learning outcomes, the training and preparation of teachers and the implementation of pedagogy, relevance of curricula, effective school leadership, and the provision of adequate resources. These efforts have borne some fruit as Barbados's secondary education completion rate is one of the highest in the region at 94% (Inter-American Development Bank 2017). Yet while education in Barbados is public funded and, in theory, widely accessible, there are still concerns around quality and achievement, especially on regional secondary external examinations. For instance, though Barbados outperforms other Caribbean countries on the Caribbean Secondary Education Certificate (CSEC), in 2015, 31% of students who took the examinations failed to pass math, 29% failed English, and 37% failed sciences (Inter-American Development Bank 2017). Further, not all secondary school leavers take the CSEC; for instance, 23% of the cohort who took the Barbados Secondary Schools' Entrance Examination (BSSEE), and should have taken CSEC in 2015, did not subsequently take the CSEC. There are also concerns about equity, as the top performing public schools have the lowest proportion of low achievers on the CSEC secondary education examinations. Similarly, the bottom-performing public schools have a relatively high concentration of low performing students on the CSEC. Additionally, only 33% of students who took CSEC achieved four or more passes, the minimum requirement to work in the public sector or be admitted to universities, which means that up 67% of students who completed high school in 2015 were not qualified to either work at certain levels in the labor market or go on to tertiary education (Inter-American Development Bank 2017). And only 6.1% of the students who took CSEC get the four passes in the first sitting (Barbados Today 2016).

4.2 ICT and Digitalization

The Barbados government has been committed, through policy, to ICT and STEM education particularly since the "White Paper on Education Reform: Preparing for the Twenty-First Century" in 1995 which resulted in the blueprint for the reform program, *Education Secondary Enhancement Program (EduTech)* (Pirog and Kioko 2010; Tsang et al. 2002). EduTech 2000 was approved in 1998 at a cost of US\$213.1 million, and one of its four components, "Integrating learning technologies (IT),"

was intended to include provision of 8000–10,000 computers and associated hardware and software in primary and secondary schools. Related to ICT, EduTech was meant to gradually computerize all schools, train education professionals to integrate technology into the teaching and learning process, and develop teaching strategies to maximize information technology (Tsang et al. 2002). However, early assessment found that in piloted-tested schools, technology was not necessarily being used as originally intended as an instructional medium, though it was being used as preparation and management tool, with limited positive results on examination performance (Best et al. 2004). Later results, between 2005 and 2009, suggest some slight positive trend at the secondary level (Hinojosa 2011).

4.3 Science, Technology, Engineering, and Math (STEM) Subjects

As it relates to STEM, the government's discourse is that it will develop a reform process for STEM Education. It thus commissioned a review to examine the "current status of STEM education and STEM-related employment and to establish a comprehensive blueprint for a STEM education, innovation and employment program in Barbados" (Caribbean Science Foundation 2016, p. 2). The proposed reforms resulting from this review form part of Barbados's *Human Resource Development Strategy 2011–2016*, in particular, pillar 5: "Enhancement of research to improve innovation, entrepreneurship, and development capacity" (Ministry of Education, Technological and Vocational Training 2010, p. 2). An expansion of STEM education is expected to help drive an increase in the number of students pursuing STEM-related careers to further diversify the domestic economy in line with global trends. In other words, increased focus on STEM education is being linked to a broader set of national economic development aspirations and global trends. Among the recommendations of the commissioned review are:

- Adopt computer programming and robotics within primary, secondary and tertiary institutions immediately
- Adding science questions to the common entrance (11+) exams
- Intensive and mandatory teacher training on inquiry-based science education teaching methods
- Tertiary educational institutions to develop centers of excellence in key areas of science and engineering

While this author did not locate any document outlining the specific strategies the government will pursue with regard to the recommendations above, it is expected that they will form the basis for STEM education going forward.

4.4 Emerging Issues

Barbados has clearly made significant strides in evolving and developing its education, to the point where it has one of the highest rates of access to education in the world. The expansion of primary and secondary education and its comparatively high post-secondary/tertiary enrollment rates are clear examples of the level of transformation since its earliest colonial periods. Yet there remain areas where the country is trying to improve its education, including its quality, teacher effectiveness, and greater integration of STEM education for increased participation in the global knowledge economy. As it relates to the improvement of educational quality, the government has placed a lot of effort on enhancing the physical infrastructure of schools, as well as the retooling of teachers to improve their pedagogical skills through more recent initiatives such as the STEP's project. Such efforts also involve greater efforts to integrate technology in education, both as pedagogical tool and as STEM subjects – this will have consequences for the country's human resources capacity. In fact, the increasing of STEM in education seems to be one of the single most important goals among educational and development policy makers in Barbados. Tied to the goal of quality improvement is the concern around performance at the secondary level, especially as it relates to external examinations results and the low performance of students who, overall, do not take these examinations in sufficiently high numbers, and those who do, do not pass at the rates that suggest they are either ready for the workforce or further studies at the higher education level.

Therefore, achieving higher quality and creating more equitable access to quality education are central themes of Barbados education policy discourse, and this seems to capture the continued link between Barbados's colonial origins and the currently limiting aspects of its education system. As several scholars have observed (Rudder 2014; Pilgrim et al. 2018), the education system has not sufficiently shed its colonial past, evidenced, for example at the transition between primary and secondary levels, where high stakes examinations, the *common entrance*, still determine the fate of students in inequitable ways. This exam structure is said to have resulted in many negative byproducts, including reproduction of class privilege, limited tolerance and social cohesion, physical burden of students traveling long distances to school, and a teach-to-the-test approach that limits development of analytical and critical thinking skills. As such, there are increasing calls to rethink and reform this system, which may have implications on how the rest of educational framework is reimagined.

5 Conclusion

Barbados's education system is one of the best in the CARICOM Caribbean based on its literacy levels, secondary completion rates, and tertiary educational enrollment levels. This has been achieved through planning and heavy public investment in education as indicated by the percentage of its GDP that the country invests in the education sector. These are achievements of which the country can be proud,

especially given that its education was founded under colonialism with deep seated inequalities along race, gender, ethnicity, and other forms of difference. Plantation slavery limited formal educational provision to the Black majority for long periods of Barbados's colonial history. The earliest of education provision developed through religious foundations and served as a mechanism for social control and transformation from slavery to emancipation. This social transformative role of education continued, as education also served the latter function in the transition from a colonial society to an independent one in the mid to late twentieth century. Again, education is being asked to help the societal transition into the twenty-first century's knowledge-based economy. However, Barbados's education system, for all its achievements, still reflects some of the tendencies of the past, including access to quality education based on class, and practices that seem to have lost their relevance in the new era increasingly characterized by more complex pedagogical practices and the increasing importance of science and technology. However, policy makers and educational practitioners appear increasingly aware of these limitations and have been implementing initiatives and policies aimed at transforming the system to be defined by higher quality, more equitable access and content and pedagogy more suited to the economy of the twenty-first century.

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