

National and Regional Secondary Level Examinations and the Reform of Secondary Education (ROSE II)¹

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Executive Summary

The purpose of this study is to survey and evaluate the assessments most related to secondary school education in Jamaica and to make recommendations for improving the assessment system in terms of educational equity and learning improvement; and in terms of practical and technical improvements to the examination system.

The current secondary school system in Jamaica has well-developed processes for identifying students who will study Caribbean Examination Council (CXC) curricula in preparation to sit CXC secondary level examinations. CXC examinations with their clearly defined syllabi have gained regional currency because they target and certify the highest performing secondary students. The number of students in Jamaica who prepare successfully for the CXC examinations is relatively small; in 2001, only 9,282 Jamaican students received passing scores in English and only 4,199 in mathematics. The number who ultimately obtain scores of 3 or better on four or more examinations is, of course, much smaller still.

The relationship between Secondary School Certificate (SSC) curricula and SSC examination-taking is less clear, and the number of students who ultimately obtain scores of 4 or 5 on four or more SSC examinations is smaller overall than the number who obtain CXC qualifications. In the key areas of English and mathematics, for example, 3,272 students passed English (continuing level), but only 478 passed mathematics (continuing level).

Conservatively (i.e., assuming there is no overlap between those who pass CXC and those who pass SSC), these figures mean that of the approximately 51,000 students in each age group, the great majority leave school without nationally accepted evidence of their academic accomplishments. Considering both the CXC and the SSC, only about 25% of Jamaican students in the grade 11 age cohort obtained passing marks in English language examinations, and a mere 9% obtained passing marks in mathematics examinations. At present, there is thus no uniform curriculum or certification system in place to serve the vast majority of Jamaican secondary level students. These students currently have no accepted credential to demonstrate their secondary school attainments to prospective employers or for tertiary education.

This study concludes that there is a need for such a credential, both for the students who leave school at grade 9, and for those who continue on to higher levels but who either do not attempt or do not succeed in passing a sufficient number of CXC or SSC examinations to be useful for further education or employment.

Recommendation 1

The first major recommendation of this study is to develop a comprehensive secondary school transcript, an official record to be issued at school leaving, whether this occurs at grade 9 or later. The transcript should provide evidence of in-school accomplishments, not just examina-

tion results. It is recommended that the document be certified by the MOEYC as an “official transcript” and include the following information:

- A record of secondary school courses and grades (supported by school-based assessment).
- Teacher and school ratings of employment-related, noncognitive attributes.
- Scores on a Jamaican secondary school proficiency examination (see below).

The study considered but does not recommend separate grade 9 and grade 11 school leaving certifications and examinations.

In addition, the study recommends that a single examination be offered to all students at grade 9. The purpose of the examination would be to provide evidence that the student has met or exceeded basic junior secondary school-level proficiency standards. This examination should have the following characteristics:

- Based on the current JHSC examination with similar content coverage in the areas of mathematics, language arts, science, social studies, writing, and Resources & Technology, and similar technical quality as initially established for the JHSC;
- Official documentation of performance issued at school leaving, whether at grade 9 or later;
- Development by local Jamaican educators;
- Identification of minimum passing score by formal methods (including input from receiving units such as local businesses, civil service, vocational programmes, etc.);
- Opportunities for repeated remediation and administration at grade 9 and later until the agreed-upon cut score is reached.

Recommendation 2

A second major study recommendation is to establish a locally developed core curriculum for all Jamaican students. CXC students would take accelerated sequences or extensions of this curriculum to prepare them for the CXC examinations. This recommendation is for curriculum reform at the upper secondary level, aligned with lower secondary curriculum and supported by local assessment. Curriculum alignment would then be needed between the core Jamaica curriculum and the corresponding CXC curriculum.

Textbooks that support the core Jamaican curriculum should be available to all students. Teacher professional development would be essential for developing and implementing the core curriculum.

As part of this effort, the study recommends that Jamaican tests be developed, revised, or improved based on the newly developed academic core curriculum. It is anticipated that much of

the existing SSC academic examination material could form the basis for these new tests. It is also anticipated that double-level tests (i.e., functional and continuing) in the same subject-matter area will no longer be necessary. Low-volume tests, particularly in vocational and technical subjects, should be shifted to programmes such as HEART/NTA or consideration should be given to doing them as in-school assessments with school and teacher documentation that is keyed to curriculum for these subject areas.

It is also noted that these recommendations rest on assumptions that the following aspects of Jamaican assessment can be kept at or brought to high standards with respect to:

- Efficiency and timeliness of scoring and processing;
- Social currency of Jamaican tests relative to international tests;
- Reliability and validity of the examinations;
- Technical quality of equating;
- Security of examination content, administration, and scoring.

The study notes that a longer-range goal that should be further explored is to use the endorsement of an external authority such as the CXC to attest to the quality of the Jamaican examinations as has been the case with local examinations developed by Barbados.

Summary of Recommendations for Existing and New Secondary School Examinations			
Examination	Immediate Action	Longer-Range Action	Goal
Primary school examinations (readiness, diagnostic, literacy, placement, national monitoring)	Unchanged	Review alignment of primary & secondary school curricula and exams	Alignment of primary & secondary education
Grade 9 Achievement Test (GNAT)	Eliminated		Quality places for all students
Junior High School Certificate (JHSC), end of Grade 9 Becomes Jamaica Secondary School Proficiency Examination (end of Grade 9 or until passing score attained)	Plan transition to JSSP (Jamaica Secondary School Proficiency Examination—see below); (Phase out selection/ placement function); Analyze correspondence between JHSC examination and requirements of a school-leaving examination	Replace with JSSP. Maintain four core academic areas plus writing and R&T; Utilize item banks and analyses; Establish cutoff scores; Evaluations of effectiveness, technical quality, and fairness of new examinations	Documentation of core academic competencies for all school leavers
Jamaica School Leaving Transcript (new document)	Design Transcript to include achievement test scores; noncognitive ratings; course and grade information; School Leaving Examination scores		Documentation of full range of school and personal attainments for all Jamaican students
Secondary School Certificate Examinations (SSC)	Revise based on core Jamaica curriculum	Seek CXC assistance to verify quality of examinations and conduct content correspondence and pass rate studies	Alignment of curriculum & exams for students in SSC programme; improved public acceptance of SSC credentials
Caribbean Examinations Council (CXC) Secondary Level Examinations	Revise Jamaican curriculum to improve applicability to all Jamaican students and to establish alignment with CXC curriculum	Clearly defined and equally resourced course sequence options for senior secondary students	More effective teaching. Expansion of number of successful CXC candidates

Introduction and Rationalization

Jamaica has long recognized the value of education to economic development and for many years has dedicated a sizable proportion of its national budget to education. In recent efforts to keep pace with its more developed neighbors and in keeping with goals of *Education For All* (UNESCO 1990) Jamaica has made great strides in opening upper secondary education to all students. This ambitious and welcome reform brings with it a particular need to address educational reform issues for the “new arrivals”—that is, for those students who would formerly have completed their formal education at or before grade 9.

Jamaica has a long history of careful attention to and respect for education. In more recent years, as noted above, there has been a strong emphasis on expanding educational opportunity to all students. The Reform of Secondary Education programme (ROSE) is perhaps the most important and certainly the most comprehensive indicator of the priority of this goal for Jamaica and for the international community with which it interacts.

The ROSE programme was launched in 1993 to improve Jamaican secondary education on a systemic basis. The first phase, ROSE I, focused on lower secondary education and included curriculum development, extensive in-service teacher training, the development of the Junior High School Certificate (JHSC) exam, and the construction and upgrading of schools. The second phase, ROSE II, will address upper secondary education and its implementation is imminent. A major goal for ROSE II is to offer a place in upper secondary school to every Jamaican student, and, in addition, to have these places be “quality places.” That is, the aim of ROSE II addresses a wide variety of educational quality issues such as coordinated curricula, teacher training and professional development, appropriate student/teacher ratios, and the availability of suitable educational materials.

The current secondary system’s curricular and examination elements serve the higher achieving students, those who would traditionally have attended secondary school, relatively well. Although there is still considerable room for improvement even with these higher achieving students, it is clear that they are currently better served than are Jamaica’s middle and lower achieving students. These latter students may now enter and remain in secondary school in greater number, and these numbers will certainly increase in the coming years, but such students are likely to have little to show in terms of documenting their learning in ways that produce assets for their further study or employment.

The Terms of Reference for the original study set forth four primary objectives:

1. To evaluate the CXC and SSC examinations addressing
 - a. the correspondence with the grades 7-9 and potential impact on grades 10-11 curricula;

- b. the impact of examinations on achievement of students' performance and self-perceptions;
 - c. the possible impact on the suggested reform at the upper secondary level.
2. To identify alternative strategies for assessment and evaluation at the secondary level.
3. To assess the institutional capacity for implementing school-based assessment and national certification.
4. To identify alternative models or combinations thereof, including the role of the CXC, for certification of secondary school graduates.

In order to achieve these goals, the following activities were carried out:

- An analysis of the framework or background to the SSC and CXC examinations.
- An evaluation of issues related to the grade 7-9 curriculum and the JHSC examination.
- An evaluation of issues related to the present grades 10-11 curriculum and its link to the CXC and SSC examinations.
- An analysis of the economic impact of test costs and fees for institutions and students, with an emphasis on implications for rationalization of assessment.
- An investigation of the correspondence between the CXC and the proposed ROSE senior secondary curriculum.
- An assessment of the Jamaica system's capabilities in developing and sustaining high-level certification examinations, including school-based assessment.
- Interviews, conferences, and group discussions conducted with different informants and stakeholders such as principals, students, and other school personnel; Ministry staff at the central and regional offices; colleges, universities, local employers, and other interest groups.

Following the original study, a national forum was held to solicit stakeholder feedback on the findings. Input from this forum and the availability of additional data suggested the need for further review and analysis; this report represents a synthesis of the original study and the findings from subsequent analyses.

Our analyses recognize that there must be a balance struck between what is desirable as sound pedagogical practice and what is economically feasible in the long run. Alternatives that appear to be impossible at present from a cost perspective are not pursued here, even though under some economic scenarios they might become possible at some future time. For these reasons, wherever possible, we have given weight to such practical factors as using existing systems and test materials where these are available and of good technical quality; and to streamlining the number of assessments in order to reduce costs.

Several guiding assumptions underlie our analyses and conclusions. First is that all students, regardless of their gender, their social, economic, language, or geographical background,

their prior educational experiences, or their future plans for work or education, should leave school with some record of their attainments. The current system best serves those with high academic aspirations and high prior attainments, and we take this to be a shortcoming of the current circumstances. All students in Jamaica deserve a quality education that will help them to become fully contributing and valued citizens.

We also assume that the perspective of the educational system itself is of critical importance. The work of ROSE and related efforts has set Jamaican education on the track to creating opportunities for secondary education for all, and is evidence of a commitment to upgrading new and previously underperforming schools to the same high standards that have historically been expected of upper-level secondary education in Jamaica. Teachers need to know what their students are expected to learn, and have the skills to impart the necessary learning to them. All schools should be able to ensure that the students leaving them have a solid and clearly documentable set of academic knowledge and personal skills.

Results from work during Rose I with grades 7-9 show that major progress is possible, given adequate resources and broad-based commitment. It is clear, however, that many important elements of the reform of upper secondary education are still works in progress, and that there is a wide variety of criticisms of and strongly held but contradictory opinions about the current system.

Jamaica's educational professionals as well as the general populace take a strong interest in testing. Most of those whom we interviewed as part of this study had a clear assumption that high-stakes assessments are a permanent part of the Jamaican landscape. Despite recent gains in educational participation and clear government commitment to educational reform, there is extensive media criticism in Jamaica of the standard of education in general (poor), of the lack of skills and the attitudes of recent school-leavers (shocking), and of the performance of Jamaican students in their examination results, particularly the CXC (too low). Such criticisms are, of course, widespread among other countries in the region and elsewhere in the world with respect to their own students. It is probably not possible to reach a definitive conclusion as to whether Jamaica's educational glass is half-full or half-empty, but several facts are worth pointing out:

Relatively few Jamaican students prepare for and sit the CXC examinations.

Relatively few Jamaican students obtain sufficient CXC passing marks. The problem is especially acute in mathematics.²

Relatively few Jamaican students succeed on the SSC examinations.

Progress has been made in expanding upper secondary education to provide places for all students, but more places are still needed.

Newer schools are not yet achieving the same levels of learning and examination success as more traditional schools.

² In spring, 2001, approximately 25% of those who sat the CXC mathematics examination obtained a score of 1, 2, or 3; this figure corresponds to only 8% of the Jamaican students who entered grade 9.

The quality of Jamaican-made assessments, particularly the SSC, is questioned by many educators and the general public.

Many prospective employers are vague about the meaning of the various school-leaving examinations.

Many prospective employers believe that Jamaican school-leavers lack major academic and personal skills that are important in the workplace.

Many educators and others believe that an emphasis on exams has driven the educational system — its curriculum, its definitions of success and failure, and its persistent tracking or streaming of students — into differentially resourced programmes.

Evaluation of the CXC and SSC examinations

Jamaica, like many other countries in the region and elsewhere, has a large number of examinations. As is usually the case these examinations have arisen at different times, under different circumstances and sponsorship, and for different purposes. It is invariably more difficult to discontinue a well-entrenched examination than to continue with the status quo. The result is a large number of examinations with overlapping content and lacking clearly defined and rational relationships to one another.

Types of examinations. Table 1 describes the major examinations currently offered to Jamaican students. In this report, we will focus most heavily on three types of examination that are key to secondary school reform and to rationalization of Jamaica's assessment system, the CXC, the SSC, and the Junior High School Certificate (JHSC) examination. Although the General Certificate of Education (GCE) remains strong in some quarters, particularly in independent schools, an overall decline in Jamaican students' GCE test-taking has accompanied the rise in number of students taking the CXC. The Jamaica School Certificate (JSC) examination is taken exclusively by people who are out of school, in order to certify what they learned while in school. Its acceptance for tertiary education and employment is quite limited, however, and its social currency is, at present, quite low.

Name	Age/ Grade	Purpose	Description
Grade 1 Readiness Inventory	Beginning of grade 1	Provides diagnostic information to teachers for instructional use; provides data for national monitoring	Administered by teachers who send results to MOEYC for data entry and analysis
Grade 3 Achievement	End of grade 3	Provides student achievement information; provides data for national monitoring	Administered by teachers who send results to MOEYC for data entry and analysis
Grade 4 Literacy Test	End of grade 4	Assesses literacy levels and identifies those who are at risk for purposes of intervention (summer school and possible grade repetition)	Includes three subtests: Word recognition, reading comprehension, and writing; students are classified as <i>Not at Risk</i> , <i>Uncertain Risk</i> , or <i>At Risk</i>
Grade 6 Achievement Test (GSAT)	End of grade 6	Placement test for secondary school programmes; provides data for national monitoring	Curriculum-based test covering mathematics, language, science, social studies, and communication (mix of multiple choice and constructed response formats)
Junior High School Certificate (JHSC)	May of grade 9	Selection/placement test for upper secondary programmes for students in ROSE junior high schools; provides achievement record/certificate for school leavers; provides data for national monitoring	Curriculum-based test covering language, mathematics, science, and social studies (multiple choice format); as well as Extended Writing and Resource & Technology (constructed/open response format)
Grade 9 Achievement Test (GNAT)	May of grade 9	Selection test for senior secondary programmes for students from All Age, non-ROSE schools	Consists of the mathematics and language sections of the JHSC exam; being phased out
Secondary School Certificate (SSC) Exams	End of grade 11	National level certification for entry to tertiary education and selected civil service posts	Tests academic and vocational subjects; only language and mathematics have school-based components
CXC- General level	End of grade 11	Regional certification for entry to tertiary education	Tests academic and vocational subjects; January testing has alternative to school-based; language and mathematics have no school-based components
CXC- Advanced	End of grade 13	Entry to university	Offers advanced level certification; candidates need not have finished grade 13
Jamaican School Certificate (JSC) Exams	Out of school	National certification for out-of-school candidates	Certificate exam covering academic and vocational areas. Low volume vocational tests have been eliminated.

Source: Adapted from World Bank (2002a), Project Appraisal Document on a Proposed Loan to Jamaica, Annex 15, Table 1 (p. 128).

CXC Examinations

The CXC examinations are developed and managed by the Caribbean Examinations Council, which is headquartered in Barbados. The CXC examinations are used in English-speaking countries in the Caribbean region. They have been offered since the 1970s and are now widely recognized and accepted throughout the world.

The CXC examinations are ordinarily taken by students at the end of grade 11. Although initially there were two levels of the CXC exams (General and Basic) paralleling the GCE A and O level exams, the currency of the Basic level was never well established and the volume of students sitting these exams is low. A growing number of Jamaican students take CXC tests after they have left school. Administrators of the Overseas Examinations Office in Kingston report that in recent years they have administered the CXC to approximately 5,000 students per year who are making up one or more subject examinations. CXC test-takers pay their own fees.

SSC Examinations

SSC examinations are developed and managed by the Student Assessment Unit of Jamaica's Ministry of Education, Youth, and Culture (MOEYC). They have been offered at no cost to students since the mid-1970s. School administrators report that this is a factor in understanding the phenomenon of large numbers of students who are initially registered for SSC examinations, but do not finally sit the examinations. They report that many students feel that they have little chance of passing the SSC examinations, the reporting of the results of the exams is often delayed by many months (and is thus too late to be useful), and they have not had to pay for them, so there is little incentive to sit for the examination itself.

In addition, postsecondary employment prospects do not seem to vary with educational level, reflecting weak linkages between public education and the labour market (World Bank, 1998, p. 38). The fact that students with higher levels of education do not have a better chance of being employed than those with lower levels of education also indicates clearly that there are improvements to be made in the Jamaican government's return on its investment in education. The annotated student transcript recommended in the present study would address certain aspects of this problem.

CXC and SSC, Design and Content Comparison

A large number of test titles overlap between the two programmes. Although the public consensus is strong that the SSC tests are of a lower standard than the CXC, informed professional opinion runs equally strongly to the contrary. Exact comparisons are difficult to make in this case for several practical and technical reasons. The SSC does not have sufficiently systematic data collection or test analysis procedures that would enable inspection of direct correspondence with CXC tests, which have extensive technical data available on a regular basis.

In addition, there is not systematic registration by students who attempt both the CXC and the SSC,³ which would provide the best basis of comparison of the tests' differential difficulty.

³ In most upgraded secondary schools and some secondary high schools, the total number of exam registrations (CXC and SSC) for a subject is greater than the number of students in the eligible cohort. This likely reflects some registrations of out-of-grade students (e.g., those repeating a test), but it also appears that some students must be sitting both the CXC and the SSC (see Appendix D).

There are many subject areas represented in the two programmes and many combinations taken by students, further limiting the comparisons that can be made. Inspection of test descriptions and materials where these are available suggests, however, that there is great overlap of test content both in terms of content coverage and in terms of likely item difficulty associated with particular content areas.

In addition, although both the CXC and the SSC offer examinations in both multiple-choice and free-response formats, and both offer some forms of school-based assessments, they do not do so in the same way. For example, the SSC offers a school-based component only in English Language and in Mathematics; the CXC offers a school-based assessment component in all of their subjects except Language and Mathematics.

The content of the CXC and SSC tests with parallel titles is very similar in some key areas, for example in Mathematics and English Language. The CXC and SSC tests are highly parallel at the level of test specifications in content coverage, weights given to particular topics (where this can be determined), and overall test length. This probably results from a deliberate early effort at coordination, as the similarity is well beyond the overlap usually found in independently developed tests of the same subject matter for highly similar populations of test-takers. Only minor subtopics differ for the CXC and SSC mathematics tests, for example, while all of the major topics are identical.

Despite comparability of test content, there are distinctly different patterns of test registration between the various types of schools. Appendix D provides tables listing the public secondary school institutions registering students for CXC and/or SSC examinations for English Language and Mathematics. The tables provide registration and performance data by institution for 2001. Analyses of the data indicate that:

- Secondary high (SH) schools (traditional high schools) register students for CXC exams and not for SSC exams (only six of the 52 SH schools access CXC and SSC English language exams; only seven schools access both CXC and SSC mathematics exams);
- Technical high schools register students for SSC exams and not for CXC exams;
- Upgraded high (UH) schools (comprehensive high schools) access both CXC and SSC exams; of the 83 UH schools, only four have no students sitting CXC and only two have no students sitting SSC.

These differences in test usage, with the higher prestige schools using CXC exclusively, likely help explain public differences in perceptions of test difficulty.

Other tests are not as parallel between the CXC and SSC. For example, the social studies test offered by the CXC has a greater emphasis on social issues, communication, censorship, and freedom of speech than does the comparable SSC test. Also, not surprisingly, the SSC has more Jamaica-centered content.

Why are there such differences among subject areas in CXC/SSC correspondence? It is to be expected that tests developed for similar uses and similar populations would have some degree of overlap due simply to consensus in the academic discipline that the test represents. Differences can arise through the professional opinions of those charged with developing test specifications and other materials such as questions and guides for item writers. Another way in which differences might arise in the specific case of CXC and SSC tests is that some SSC tests may have been developed later, or without close reference to CXC tests.

As noted above, the level of difficulty of the CXC and SSC tests seems more similar than one might expect for tests that are currently widely thought to be intended for students of different levels of academic attainments.

We were unable to determine for this report the comparability of the CXC and the SSC on the critical issues of (1) how score levels are determined, and what procedures were used to arrive at the decision that scores of 1, 2, and 3 are considered passing for the CXC and scores of 4 and 5 for the SSC; and (2) how comparability of the scores from year to year is established.

Vocational and Technical Examinations

The redundancy and low efficiency of vocational and technical exams has been recognized by the MOEYC for many years. Attempts to eliminate low volume SSC and JSC vocational and technical exams have been marginally successful but resistance is strong. The CXC options are perceived to be out of reach for most students and access to HEART/NTA alternatives has not been well established. Unless and until there are viable alternatives for students, these exams are likely to remain despite the fact that few students truly benefit by receiving passing scores. One promising alternative is being pilot tested using a kind of “magnet school” approach. If this project proves to be sustainable and transferable to other parts of the island, this may be the most effective route for the future.

JHSC Examinations

JHSC examinations have received intensive attention as part of the ROSE I effort. As a result of these efforts, the JHSC has had a technical basis that is stronger than that of most of the other Jamaican examinations. With the possible exception of the most recent year, data have been systematically collected and analyzed in ways that permit year-to-year comparisons and trends in student attainment and test difficulty and discrimination. In addition, item banking is well developed, making it easier to revise and re-develop additional tests based on the JHSC. When the JHSC was first proposed, many students left school at grade 9. Those who had been unsuccessful in the various selection exams (Common Entrance 10+. Common Entrance for Technical High Schools, and the Grade Nine Achievement Test) had no public school options for continuing their formal education. One function of the JHSC exam was to provide these students with evidence of their proficiency levels in the core academic areas, writing and an application of Resource and Technology. In addition, the exam replaced the Grade Nine Achievement Test for selection purposes. Students who attended ninth grade in a junior high or all age school (terminal

programmes at 9th grade) were given the opportunity to compete via the JHSC exam for a space in a senior secondary programme. A long-term goal was for the JHSC to be available to out-of-school candidates and replace the Jamaican School Certificate exam. This long-term goal was never achieved.

With the gradual expansion of senior secondary access, the role of the JHSC needs to be reconsidered and adjusted. The currency of a junior high school certification in the absence of other information about the student (such as noncognitive aptitudes and work habits) is likely to be quite low. On the other hand, if the exam can be realigned and benchmarked with input from the receiving agencies (such as business, vocational centers) and then combined with a transcript that includes noncognitive factors, the utility can be demonstrated and currency established.

Examinations and the Curriculum

As noted above, CXC and SSC examinations are similar and different in both minor and major ways. In addition, there is clearly a multiplicity of examinations in Jamaica and a lack of clear articulation among them in terms of such important factors as content, difficulty, and stated purpose. Although this is undesirable in many respects, not least of which is cost effectiveness, many countries share this problem and can provide examples of how gradual progress can be made toward rationalization of the examination systems from the point of view of the examinations themselves.

An even more pressing issue for secondary school reform, however, is that of developing a coherent and complete vision of the scope and sequence of knowledge and skills that students are expected to acquire during their school years. Much progress has been made in this respect at the primary and junior high school levels relative to the upper secondary level. In addition, as part of ROSE I, there has been progress on developing consensus on effective teaching and learning strategies, and considerable effort to disseminate that consensus to teachers. Such strong and continuing efforts are also needed at the upper secondary level.

Numerous informants from secondary schools and other sectors of secondary educational administration reported that they were unaware of any specific curriculum for teaching students who intend to take the SSC. We have seen a few examples of some curriculum materials that were developed early in the life of the SSC programme to support the examinations, so these assertions may not be valid in a technical sense, but in practical terms, a clearly recognizable curriculum is not available to SSC teachers. The development and dissemination of these materials appears to have ceased in the rather distant past. The reasons for this are not clear to us. We could not ascertain the scope of the original plan for and implementation of SSC curriculum development, but again, for all practical purposes, a detailed teaching curriculum designed for the majority of the Jamaican students now in upper secondary schools does not currently exist. The most commonly reported response to our questions about the curriculum for SSC students was that a single curriculum using books that are oriented toward the CXC is taught to all students in grade 10 and early grade 11. Often students are divided into two groups — those thought capable of sitting the CXC, and others, who are registered for the SSC (and often this decision is made

considerably earlier). As noted above, many of the latter do not, for a variety of reasons, actually sit the SSC.

In order for examinations to begin to be effectively rationalized, there should first be consideration of basic curricular issues, with particular attention to the students newly served by upper secondary education. Content sequences in key areas throughout the grade levels should be articulated with respect to scope, sequence, needed materials and activities, and other discipline-related considerations. In addition, consideration should be given to the special needs and interests of major subgroups of the Jamaican population, for example, those who intend to pursue tertiary education and those who intend to join the workforce immediately after secondary school; students from remote and rural areas; and students with different language backgrounds.

As part of the work of ROSE, junior and upper secondary educational programmes have been designed. Both share a common core of subjects areas to be taught: English language, mathematics, natural science, social science, foreign language, information technology, and humanities. Additional subjects may be chosen from the arts, science, technical and vocational education, and the performing arts/physical education. Design features of the upper secondary curriculum are reported by recent studies that provide for extended time in upper secondary school for those students who need extra effort to master the material specified as the core academic curriculum (World Bank, 1998, 2002b).

Creation of detailed teaching curricula at the upper secondary level that are articulated with lower educational levels is a large undertaking, but the needed rationalization and revision of Jamaican examinations will be very difficult to do without this shared, concrete understanding of what Jamaican students are expected to learn at each educational level.

Curriculum reform is part and parcel of systemic secondary school reform. It also has implications for the composition and training of the Jamaican teaching force. At present, Jamaica has a very diverse teaching force in terms of training and experience. Reformed curricula can be an effective vehicle for teachers' initial training, and for their professional development within the schools where they already teach. A programme of professional development will be required in order to accomplish this, along with coordination of efforts between the schools and the teacher training institutions.

Some of our informants for this project, in recognizing the challenges presented by systemic curriculum reform, also noted that the current situation of widespread half-shifts for secondary school students is an obstacle to effective implementation of any new curricula. In 1999-2000, approximately one-third of Jamaican secondary schools were operating under shift systems in order to cope with overcrowding due to a shortage of places. This is especially unfortunate in terms of learning outcomes, as time on task has repeatedly been shown by educational research to be one of the most powerful predictors of learning in a wide variety of contexts.

In addition to the intended correspondence between curricula and examinations, it should also be noted that there are likely to be unintended consequences as well, and that these consequences are part of the formal evaluation of assessments' validity (AERA/APA/NCME, 1999;

Glaser & Silver, 1994; Linn, Baker, & Dunbar, 1991; Messick 1989). One of the major considerations in assessment design should be the anticipation of “washback” from the examinations to the curriculum as it is implemented. Most commonly, if there are important consequences of an examination, what is tested becomes, in the fairly short range, what is taught. In fact, there are currently concerns in Jamaica about the CXC inadvertently driving the curriculum for all Jamaican students, even those who have no intention of ever sitting the CXC or of pursuing tertiary education.

Junior High School and Upper Secondary Curricula

A persistent question associated with the reform of secondary education is how the integrated curriculum of the junior secondary programme will mesh with the subject-specific curriculum found in the traditional senior secondary programmes and subsequent certification exams. At the heart of the question is how students who have had, for example, undifferentiated science in 7th-9th grade will fare when faced with the more specialized courses such as biology or chemistry. Language arts, mathematics, social studies, and resource and technology are other curricular areas that are undifferentiated for 7th – 9th, followed by specialized courses in senior secondary. There was also a concern that the pedagogical approach emphasized in the ROSE project (e.g., student-centered approach using cooperative learning, hands-on projects, etc.) would not provide the foundation and individual work habits that students would need for senior secondary success.

During ROSE I, these concerns led the Ministry to commission a study of the alignment between the ROSE 7-9 curriculum and subsequent senior secondary and CXC curricular demands (C.A.T.C., 1997). In conducting their investigation, the authors reviewed each subject area and compared the pedagogical emphases, the cognitive emphases (lower versus higher level cognitive demand of the activities), and the alignment of concepts and objectives. They noted that the ROSE curriculum had greater pedagogical emphasis while the syllabi for upper level (CXC) courses had more of a discipline focus. Nonetheless, there seemed to be significant overlap in the content, concepts, and cognitive emphases. They concluded that if ROSE and CXC were to be implemented as intended, the ROSE curriculum would serve as a sound precursor for CXC success.

The Impact of Examinations on Students’ School Performance and Self-Perceptions

Low passing rates and low expectations of success impact students’ motivation. This phenomenon operates directly through well-known psychological mechanisms of student expectations and attributions, and indirectly through teachers expectations and attributions concerning success and failure. Abundant achievement and other data from Jamaica show that low school performance and self-perceptions are particularly troublesome for male students. This has also been shown to be the case in other countries including the United States. The longer term implication of this phenomenon is that students with no or insufficient qualifications cannot obtain further qualifications or employment to allow them to function as esteemed, contributing members of Jamaican society.

A later section of this report will offer details on the passing rates of Jamaican students on the SSC and the CXC. For the purposes of understanding the impact of examinations on students' school performance and self-perceptions, it is perhaps sufficient to say here that the probability of garnering sufficient examination results or other academic credentialing to improve one's prospects must seem vanishingly small to many Jamaican students, with devastating results for their motivation and personal development.

Data on Student's Nonacademic Traits

Part of this study investigated the possibility of obtaining information about students' personal characteristics, dispositions, and motivations for the purpose of documenting attributes that are important to further work and study, and many other aspects of personal living, and for consideration of how these might be documented by teachers for use in school-leaving transcripts. Interviews were held and important sectors of the business community were surveyed about traits that are of importance in their view, and their views of how Jamaican students are doing with respect to these traits.

Figure 1 shows that Jamaican business leaders are most familiar with the CXC, less so with local examinations, particularly at the lower secondary level.

Figure 1: Jamaican Business Leaders' Familiarity with Secondary School Examinations

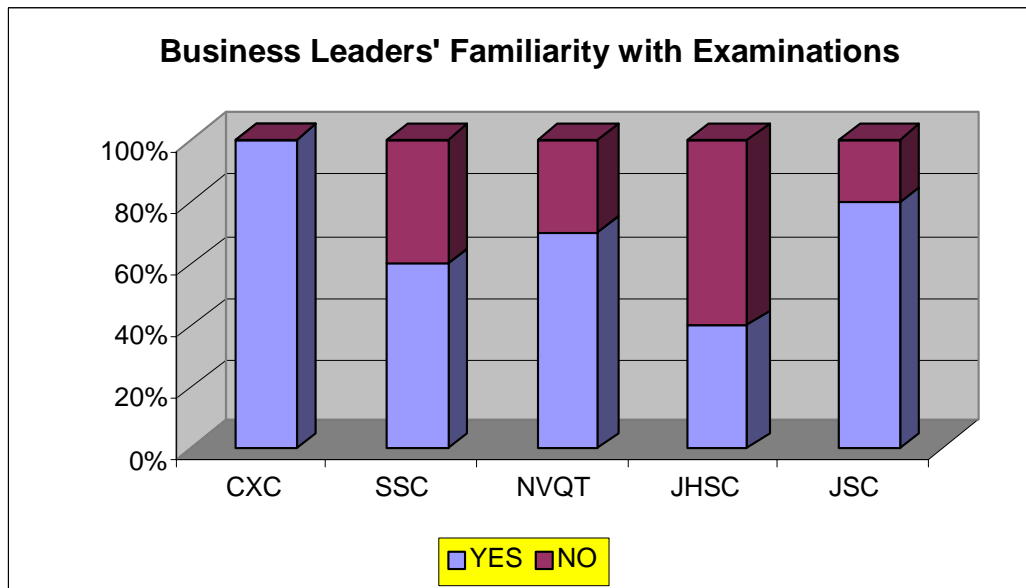


Figure 2 shows that Jamaican business leaders rank qualifications and experience ahead of other considerations, and give heavy weight to attitudes toward work and to clear and comprehensible speech. Further study is needed to determine if these characteristics can be effectively

measured in the schools in order to become part of a secondary school transcript as proposed in this study's recommendations section.

Figure 2: Importance of Criteria for Evaluating Applicants for Secondary School Graduate Level Jobs

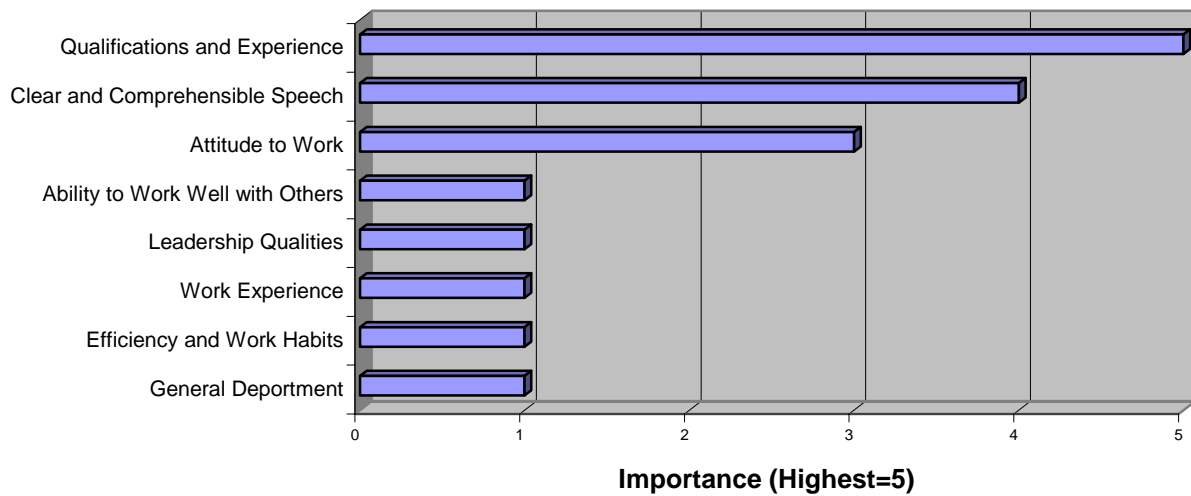


Figure 3 shows that Jamaican business leaders are most positive about the typical entry-level job applicant in areas related to work habits, punctuality, etc. On the negative side, communication issues are again flagged as areas needing special attention, supporting the information shown in figure 2.

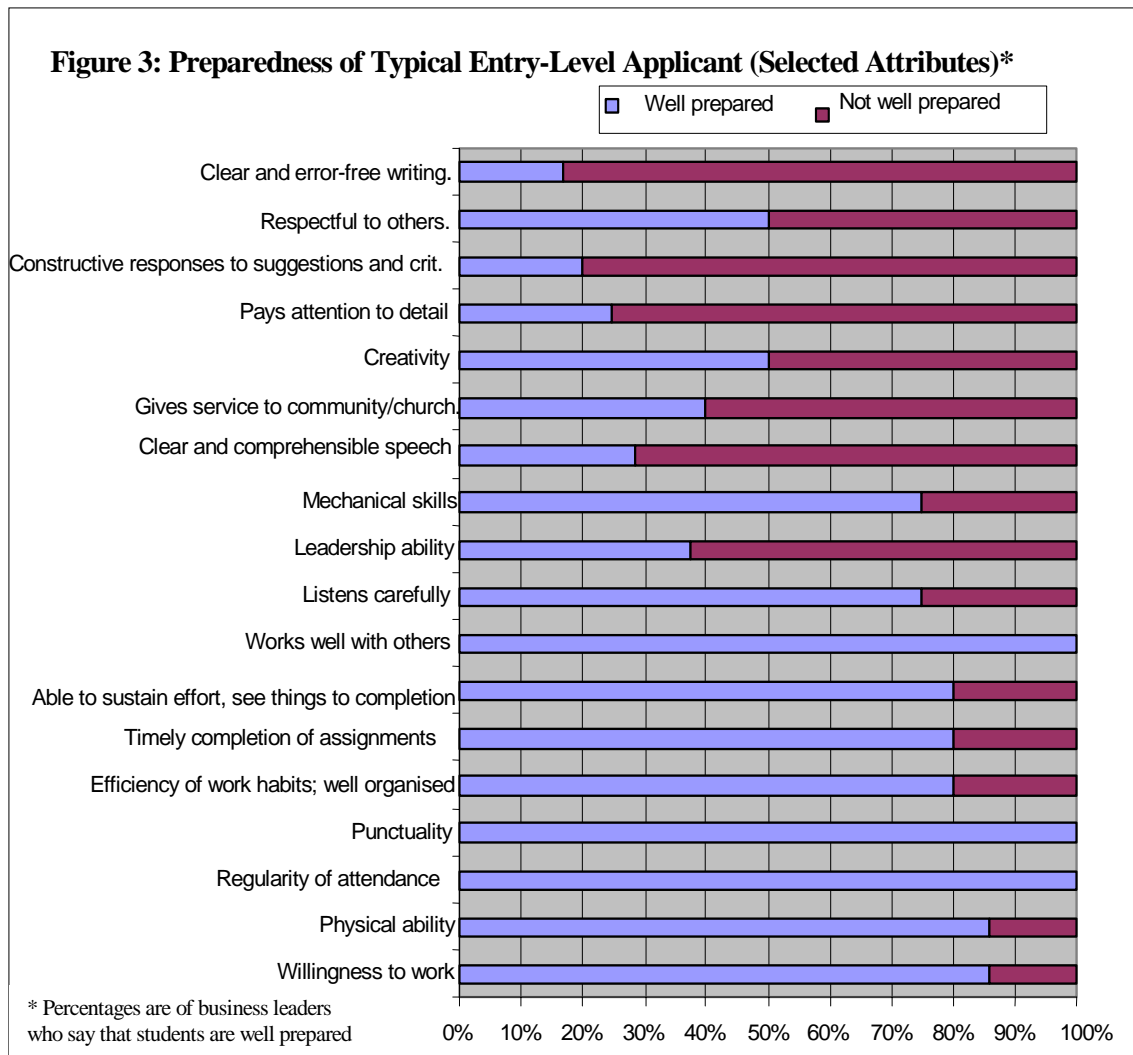
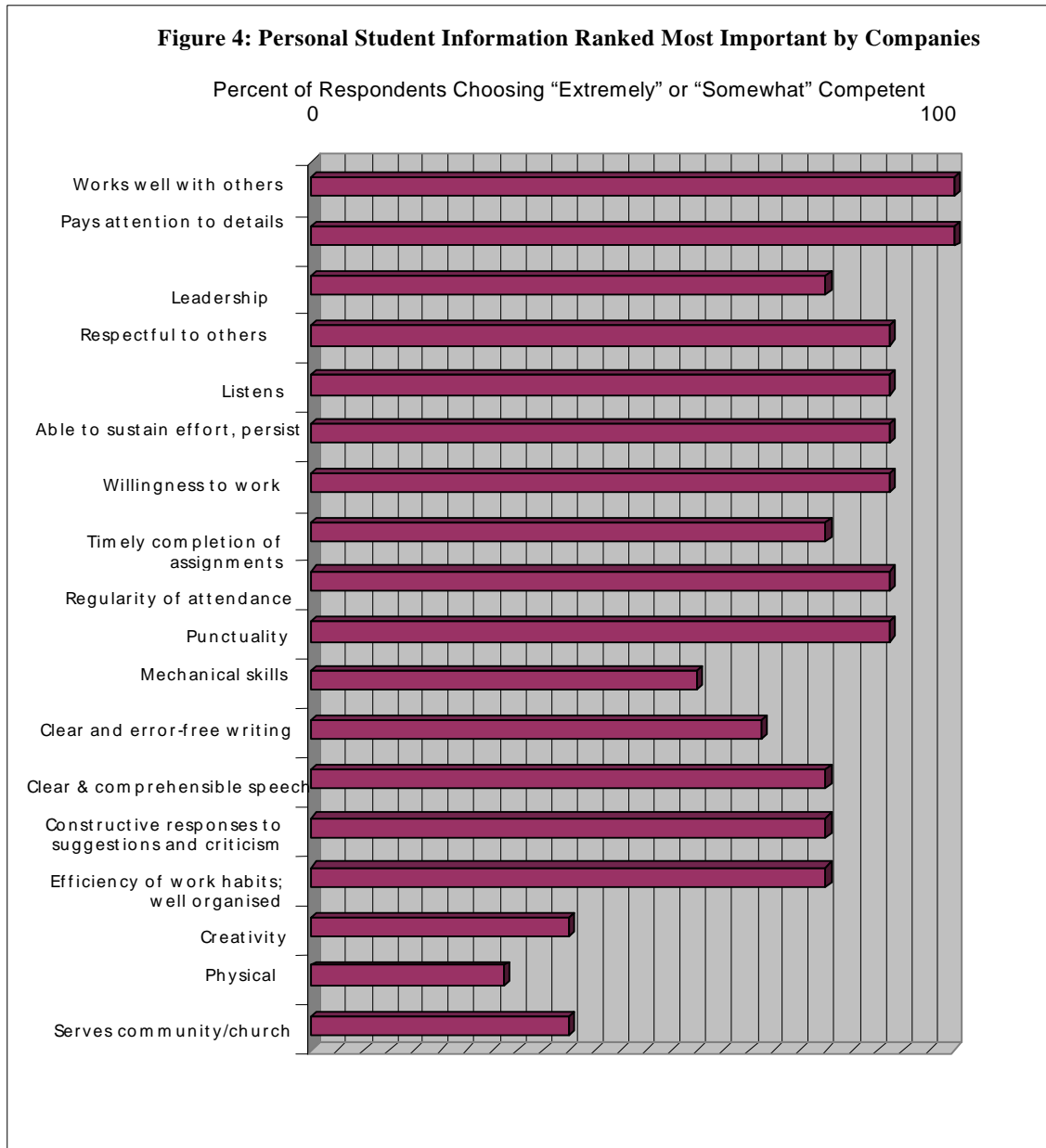


Figure 4 again suggests that the business community values the ability to work well with others and to take direction on the job.

Issues of Validity of Rating Personal Attributes

The research area of rating personal attributes has a long history in education and psychology. If Jamaica decides to pursue this study's recommendation to consider adding such information to secondary school transcripts, much guidance would be available regarding standards and practices, as well as other technical issues. There are some considerations that would require careful thought and planning, however, such as methods for obtaining valid and reliable ratings from teachers. In some interviews we have also been cautioned to avoid confounding students' own behavior and dispositions with behavior that arises from family and school circumstances beyond the student's direct control. An example that was cited in this regard was that of punctu-

ality: students are often dependent on others for transportation to school. A poor record of attendance or being on time may reflect the behavior of others rather than that of the student him- or herself.



Possible Impact on the Suggested Reform at the Upper Secondary Level

As noted above, the social currency of and success rate on Jamaican-made examinations is low. This may be related to the cost of the examinations to students and their families, but this is not likely to be the entire explanation. Another major factor is the realistically low expectations that many students hold for their likelihood of success on the SSC, or even more extremely, on the CXC. The section below takes a number of looks at how Jamaican students are actually served by the CXC and SSC examinations. Further description is given for two key areas for school reform, English language and mathematics. Selected trends over time are also described and discussed.

Table 2: Participation and Passing for CXC English Language and Mathematics						
Entry Gr. 9	Entry Gr. 10	Entry Gr. 11	Sitting Eng	Pass Eng	Sitting Math	Pass Math
50,000	40,000	34,000	15,132	9,282	13,265	4,199
<p><i>Source:</i> Most recent data available, Jamaican Ministry of Education and Culture (2000) for 1998-99 school year.</p> <p><i>Technical notes:</i> Numbers of students entering the ninth, tenth, and eleventh grades from Jamaican Educational Statistics, 1998-1999. The numbers of students in the 15-16 year-old age cohort is expected to remain stable during the years 1998-2003 at approximately 101,000-102,000. Students sitting and passing the CXC examinations from spring, 2001, testing (Caribbean Examinations Council, 2002). Passing scores are defined as a mark of 1, 2, or 3.</p>						

For the key CXC areas of English language and mathematics, Table 2 shows participation and passing rates for Jamaican students in 2001.

Only 30% of those students who entered grade 9 eventually sat the CXC English examination; of those who entered grade 11, 45% sat this examination. The passing rates are, of course, much lower. In terms of absolute yield, only 19% of those who entered grade 9 eventually passed the CXC English examination. Sixty-one percent of those who actually sat the examination in grade 11 passed it.

With respect to participation in the CXC Mathematics examination, 27% of those students who entered grade 9 eventually sat the CXC math; of those who entered grade 11, 39% sat this examination. Compared with the CXC English examination, the passing rates for the CXC math examination were very low. Only 8% of those who entered grade 9 eventually passed the CXC math examination. Only 32% of those who actually sat the examination in grade 11 passed it.

Table 3 shows Jamaican passing results for the complete set of CXC tests taken in 2001.

Table 3: Caribbean Examinations Council: Number of Candidates Sitting and Percentage Attaining Grades 1, 2, & 3, 2001			
Subject	Number Sitting	Number Attaining Grades 1, 2, & 3	Rate %
Caribbean history	4,293	2,935	68
Electricity/electronics	636	387	61
English language	15,132	9,282	61
English literature	6,099	3,011	49
Physics	2,511	1,128	45
Geography	3,416	2,057	60
Mathematics	13,265	4,199	32
Office procedures	2,743	2,312	84
Principles of accounts	1,370	635	46
Principles of business	6,060	4,654	77
Spanish	2,364	1,642	69

Source: Caribbean Examinations Council, 2002

Table 4: Participation and Passing for SSC English Language and Mathematics						
Entry Gr. 9	Entry Gr. 10	Entry Gr. 11	Sitting Eng	Pass Eng	Sitting Math	Pass Math
50,000	40,000	34,000	10,184	3,272	7,886	478

Source: Most recent data available, Jamaican Ministry of Education and Culture (2000) for 1998-99 school year.

Technical notes: Numbers of students entering the ninth, tenth, and eleventh grades from Jamaican Educational Statistics, 1998-1999. The numbers of students in the 15-16 year-old age cohort is expected to remain stable during the years 1998-2003 at approximately 101,000-102,000. Students sitting and passing the SSC examination from spring, 2001, testing (Harris, 2002). Passing scores are defined as a mark of either 4 or 5 for SSC.

It can be seen from a comparison of the CXC and SSC tables that the eventual “yield” of passing marks for the SSC compared to the CXC is lower. Of those who actually sat the examinations in grade 11, 61% passed the CXC English, and only 32% passed the SSC English.⁴ The disparity between CXC and SSC mathematics examinations was a good bit greater. Of those who actually sat the mathematics examinations in grade 11, 32% passed the CXC mathematics examination and only 6% passed the SSC mathematics examination.

⁴ This discussion assumes that students who sat the CXC and those who sat the SSC are nonoverlapping and non-equivalent groups. Scores on the CXC and SSC cannot be directly compared.

Table 5: Secondary School Certificate (SSC), Test Entries, Awards, and Rate of Awards, 1992, 1997, & 2001

	1992			1997			2001		
	Entries	Awards	Rate %	Entries	Awards	Rate %	Entries	Awards	Rate %
English language ^a (functional)	9,520	272	2.9	8,137	432	5.3	10,689	1,273	11.9
English language ^a (continuing)	4,029	645	16.0	7,413	4,253	57.4	10,184	3,272	32.1
Mathematics ^a (functional)	9,052	83	0.9	7,093	3,657	51.6	12,876	7	0.05
Mathematics ^a (continuing)	3,203	64	2.0	5,947	421	7.1	7,886	478	6.1
Science	4,428	89	2.0	8,290	1,240	15.0	12,693	842	6.6
Social studies	5,444	163	3.0	8,998	677	7.5	14,588	3,962	27.2
Total	35,676	1316		45,878	10,680		68,916	9,834	
Accounting	1,176	318	27.0	2,268	468	20.6	3,146	134	4.3
Agricultural	404	32	7.9	907	159	17.5	1,338	404	30.2
Art & craft theory ^b	404	61	15.1	704	104	14.8	1,994	-	-
Auto mechanics	623	25	4.0	781	62	7.9	957	145	15.2
Business principles	1,015	152	15.0	2,400	991	41.3	3,376	1,237	36.6
Business communication	888	648	73.0	1,075	228	21.2	1,484	331	22.3
Carpentry/cabinet making	1,383	28	2.0	1,604	196	12.2	1,924	97	5.0
Child care	851	272	32.0	491	221	45.0	3,038	-	-
Clothing & textiles	1,631	49	3.0	1,787	120	6.7	1,819	511	28.1
Electrical installation	1,354	215	16.0	2,037	572	28.1	2,708	632	23.3
Food & nutrition	1,983	79	4.0	2,574	1072	41.6	3,862	1,174	30.4
Machine shop/welding	1,074	21	2.0	1,446	160	11.1	1,889	240	12.7
Office procedures	1,134	181	16.0	1,858	760	40.9	2,300	699	30.4
Typewriting	945	473	50.1	1,601	777	48.5	1,853	687	37.1
Drafting	39	15	38.5	383	26	6.8	928	78	8.4
Marketing	463	9	1.9	596	11	1.8	941	268	28.5
Plumbing	224	4	1.8	262	38	14.5	384	87	22.7
Shorthand	8	3	37.5	90	34	37.8	64	13	20.3
Beauty culture	154	3	1.9	Elim.	-	-	-	-	-
Farm mechanics	0	0	0	Elim.	-	-	-	-	-
TOTAL	15,753	2,588		22,864	5,999		34,005	4,389	

Source: Adapted from A. M. Harris, *Aide Memoire on Student Assessment and Examination Rationalization: 7-11 January 2002*. Washington, DC: World Bank.

a. Has school-based component.

b. Has practical component.

The number of students in Jamaica who prepare successfully for the CXC examinations is relatively small; in 2001, only 9,282 Jamaican students received passing scores in English and

only 4,199 in mathematics. The number who ultimately obtain scores of 3 or better on four or more examinations is, of course, much smaller still.

The number of students who ultimately obtain scores of 4 or 5 on four or more SSC examinations is smaller overall than the number who obtain CXC qualifications. In the key areas of English and mathematics, for example, 3,272 students passed SSC English (continuing level), but only 478 passed SSC mathematics (continuing level).

Conservatively (i.e., assuming there is no overlap between those who pass CXC and those who pass SSC), these figures mean that of the approximately 51,000 students in each age group, the great majority leave school without nationally accepted evidence of their academic accomplishments. Considering both the CXC and the SSC, only about 25% of Jamaican students in the grade 11 age cohort obtained passing marks in English language examinations, and a mere 7% obtained passing marks in mathematics examinations. At present, there is no uniform curriculum or certification system in place to serve the majority of Jamaican secondary-level students. These students currently have no accepted credential to demonstrate their secondary school attainments to prospective employers or for tertiary education.

There is also clear evidence that these effects are not uniformly distributed by type of secondary school, and that the newly upgraded secondary schools have much less examination success than do the traditional secondary schools. Table 6 shows that rates of examination success are much lower at upgraded secondary schools (UH) than at traditional secondary schools (SH), despite the likelihood that the students sitting the CXC at the upgraded secondary schools are among the most accomplished students in their schools. The enormous size of this disparity can be seen in both the percentages of passes among those sitting the CXC as shown in Table 6, and in the even lower percentage of passes among the total eligible school cohorts (12,194 in the SH and 19,954 in the UH schools).

Table 6: Number of Secondary High (SH) School and Upgraded High (UH) School Students with Passing Marks on CXC Mathematics and English Tests, 2001						
	SH Sitting	Pass	Rate* %	UH Sitting	Pass*	Rate %
Eng language	9,780	7,220	74	5,352	2,062	39
Math	8,973	3,601	40	4,292	598	14
* Percentage of those sitting who obtained marks of 3 or 4.						

Another factor to consider is that some schools may not recommend all of their students for CXC or SSC participation. Based on analyses of the data in Appendix D, a large percentage of students in the eligible cohort (11th grade) do not sit either CXC or SSC exams; of students in Secondary Highs, 2,088 (17% of the eligible cohort, assuming no dual registration and no out-of-grade registrants) do not sit either CXC or SSC English language exams and 2,758 (23% of eli-

gible cohort, assuming no dual registration and no out-of-grade registrants) do not sit a CXC or SSC mathematics examination.⁵

There is also some evidence that student absence rates for the SSC may reflect lower than desirable student motivation, particularly for the functional as compared with the continuing tests of language and mathematics. SSC absence rates for English are 7.7% for Language (Functional) vs. 2.1% for Language (Continuing). Rates for Mathematics (Functional) are 7.0% and for Mathematics (Continuing) 3.0%.

Table 7 shows that for the years prior to the 1998 implementation of secondary school reforms, the total number of upper secondary students in Jamaica remained fairly stable. The increase in 1998-99 from the prior year is the largest for which we have information and is likely to reflect the beginning of the effect of school reforms. It is to be expected that increases will continue, given Jamaica's commitment to secondary education participation. It should be noted that the proportion of students passing important secondary examinations such as the CXC and the SSC will decline with this rise in the base number of students in the secondary cohort unless educational standards are generally improved.

The 15 and 16 year-old age cohort has been very stable at 100,000-102,000 since 1993, but it is projected to increase to 107,000 by 2006, and to 116,000 by 2010. Between 1993 and 1999 the number of students in grades 10 and 11 combined increased from 67,000 to 74,000 (World Bank, 1998; Ministry of Education, 2000).

Table 7: Total Number of Secondary School Students in Jamaica, 1991-99	
Year	Total Number of Secondary Students^a
1991-92 ^b	222,348
1992-93	221,731
1993-94	218,001
1994-95	217,001
1995-96	221,831
1996-97	214,831
1997-98 ^c	214,313
1998-99	228,950

a. Total age cohort.
b. World Bank, September 1998.
c. Jamaica Ministry of Education, Youth, and Culture, 2000.

⁵ These figures were calculated by totaling the number of CXC and SSC registrants for each school and subtracting the total from the eligible 11th grade cohort in the school. Only schools where the eligible cohort was larger than the total exam registrations for the school were included in the calculations.

JSC Examinations.

As noted above, the JSC is growing in the number of students sitting it. Table 8 shows growth in every test from 1992 to 2001, except, of course, those tests that were eliminated due primarily to low volumes and cost considerations. It is not clear, however, what value accrues to the students as a result of this effort, because the JSC's social currency in Jamaica and elsewhere is low.

Table 8: Jamaica School Certificate (JSC), Test Entries, Awards, and Rate of Awards, 1992, 1997, & 2001									
JSC	1992			1997			2001		
	Entries	Awards	Rate %	Entries	Awards	Rate %	Entries	Awards	Rate %
Biology	734	70	9.5	2,370	1,467	61.9	4,320	800	18.5
Civics	1,804	18	1.0	4,453	3,396	76.3	7,289	1,344	18.4
English (a) language	4,270	743	17.4	7,183	1,486	20.7	11,031	1,562	14.2
History	1,276	110	8.6	1,256	1,035	82.4	5,132	352	6.8
Mathematics	4,152	44	1.1	7,234	2,604	36.0	11,091	1,584	14.3
Science (general)	Not avail	Not avail	Not avail	2,920	2,068	70.8	6,247	1,231	19.7
TOTAL				25,416	12,056		45,110	6,873	
Accounting	393	94	23.9	574	324	56.4	1,395	118	8.5
Agricultural science	128	1	0.8	435	76	17.5	1,112	54	4.9
Agriculture-general	60	0	0	169	64	37.9	594	44	7.4
Commercial practice	118	48	40.7	504	272	54.0	890	126	14.2
Typewriting	204	55	27.0	132	120	90.9	461	70	15.2
Auto mechanics	16	3	18.8	60	23	38.3	Elim.	-	
Clothing & textile/needlework	68	42	61.8	238	32	13.4	Elim.	-	
Drafting (tech drawing)	20	5	25.0	18	2	11.1	Elim.	-	
Electrical installation	96	21	21.9	194	47	24.2	Elim.	-	
Food & nutrition (cookery)	218	97	44.5	419	60	14.3	Elim.	-	
Home econ. (management)	99	31	31.3	265	48	18.1	Elim.	-	
Metals	57	5	8.8	43	11	25.6	Elim.	-	
Plumbing	14	4	28.6	14	9	64.0	Elim.	-	
Shorthand	21	8	38.1	10	10	100	Elim.	-	
Woods (woodwork)	53	5	9.4	103	10	9.7	Elim.	-	
Art	20	11	55.0	Elim.	-	-	Elim.	-	

Table 8: Jamaica School Certificate (JSC), Test Entries, Awards, and Rate of Awards, 1992, 1997, & 2001

JSC	1992			1997			2001		
	Entries	Awards	Rate %	Entries	Awards	Rate %	Entries	Awards	Rate %
Art & craft	12	5	41.7	Elim.	-	-	Elim.	-	-
Craft	29	8	27.6	Elim.	-	-	Elim.	-	-
English (b) literature	41	0	0	Elim.	-	-	Elim.	-	-
Geography	236	18	7.6	Elim.	-	-	Elim.	-	-
Health science	862	3	0.4	Elim.	-	-	Elim.	-	-
Mathematics (advanced)	15	1	6.7	Elim.	-	-	Elim.	-	-
Spanish	33	0	0.0	Elim.	-	-	Elim.	-	-
TOTAL				3,178	1,108		4,452	412	

From A. M. Harris, *Aide Memoire on Student Assessment and Examination Rationalization: 7-11 January 2002*. Washington, DC: World Bank.

Institutional Capacity for Implementing School-Based Assessments

Value and Challenges of School-Based Assessments

There are fundamental commonalities among all useful assessments, whether the assessments are highly standardized and administered under centrally controlled conditions for purposes external to the individual student and classroom; or whether they are made, administered, and interpreted by a teacher who is focused primarily on educating students rather than on data-gathering. Their goals are remarkably similar — to produce assessments that are useful, reliable, valid, and fair, but they also differ in a number of practical respects, such as mode of administration, and can differ in cost as well.

Proponents of school-based assessment have offered a number of compelling reasons for this type of assessment. These include:

- Providing more comprehensive assessments of the individual;
- Helping teachers in their professional development;
- Improving the quality of teaching and learning in a lasting and systemic way;
- Empowering teachers professionally;
- Facilitating learning-centered classroom processes;
- Supplementing external examinations in a cost-effective manner;

- Serving as formative and diagnostic assessments.

Each form of assessment is vulnerable to different threats to its quality and has different strengths. Centrally made and administered tests have the very important advantage of allowing scores to be compared more precisely across schools, across regions, and across entire countries.

It is clear, however, that there are very important advantages to school-based assessments that cannot easily be matched by centrally developed and administered large-scale tests. Teachers are able to provide more comprehensive assessments of students because they are able to observe students for extended periods over a wide range of conditions and situations. In addition, the very act of assessing students causes teachers to articulate their own goals for teaching, determine whether or not those goals have been met, and reflect on ways of achieving unmet goals. School-based assessment can, therefore, help teachers in their professional development and improve the quality of teaching and learning in an enduring way. School-based assessment can empower teachers and give them better control of the teaching/learning process. School-based assessments, because of their potential for very tight linkage to what was actually covered in the classroom, because they are continuous, and because scores can be made available immediately, are often more useful for formative and diagnostic assessments than centrally developed tests typically are.

Teachers and School-Based Assessment.

School-based assessments have been part of the certification process for some time. In the case of the CXC, candidates have the option of taking the exams either (1) through their schools with teachers providing assessments of their work, or (2) independently through the overseas exam board, without having to complete the school-based component. CXC conducts unannounced audits to verify the accuracy of teacher ratings and to motivate teachers to accurately evaluate student work.

In the case of the SSC exams, the school-based components have gradually been eliminated. The Student Assessment Unit noted that there was very little variability in performance — virtually all students received positive ratings from their teachers — and, insufficient resources were available to conduct the training and site-level audits that potentially could have improved the accuracy of teacher ratings.

Equity was another concern that was raised with regard to ratings of school-based performance assessment. Students who have better educated parents and/or teachers are in a better position to produce higher quality products, whereas poorer students or those with fewer resources in terms of support for school-based products are disadvantaged.

Alternative Models for Certification of Secondary School Graduates Secondary School Proficiency Transcripts

The first major recommendation of the study is to develop a comprehensive school-leaving transcript to be issued at school leaving, whether this occurs at grade 9 or later. The transcript should include the following information:

- A transcript of grades and courses;
- Teacher and school ratings of noncognitive, employment-related attributes;
- Scores on the Jamaican school-leaving examination (see recommendation 2, below).

The study considered but does not recommend separate grade 9 and grade 11 school-leaving certifications and examinations. For the purposes of communicating clear expectations to students, schools, and the community, having a single standard that is explicitly and formally set is critical. The basic purpose of the school-leaving certifications and related assessments is to attest to the full range of accomplishments of every student leaving the Jamaican educational system. Students who remain longer in the educational system will amass further competencies to be documented as they leave. Particularly for those students who leave before completing the upper secondary programme and/or taking upper level examinations, it is important to provide documentation that they have attained core competencies in the areas designated as comprising secondary education. As noted above, establishing a well-designed curriculum that is systemically articulated between the upper and lower secondary school years should provide a firm basis for the development and continued rationalization of such documentation.

Single School-Leaving Examination

In addition, the study recommends that a single school-leaving examination be offered to all students at grade 9. This examination should have the following characteristics:

- Based on the current JHSC examination, with similar technical qualities;
- Content coverage in the areas of mathematics; language arts, science, social studies, and Resources & Technology;
- Issuance at school leaving, whether at grade 9 or later;
- Development by local Jamaican educators;
- Identification of minimum passing score by formal methods;
- Opportunities for repeated remediation and administration at grade 9 and later until the agreed-upon cut score is reached.

Locally Developed Core Curriculum.

A second major study recommendation is to establish a locally developed core curriculum for all Jamaican students. CXC students would take accelerated sequences or extensions of this curriculum to prepare them for the CXC examinations. This recommendation is for continued, systemic curriculum reform at the upper secondary level, aligned with lower secondary curriculum and supported by local assessment. Curriculum alignment would then be needed between the core Jamaica curriculum and the corresponding CXC curriculum. Textbooks that support the core Jamaican curriculum should be available to all students. Teacher professional development would be essential for developing and implementing the core curriculum. As part of this effort, the study recommends that Jamaican tests be developed, revised, or improved based on the newly developed academic core curriculum. It is anticipated that much of the existing SSC academic examination material could form the basis for these new tests. It is also anticipated that double-level tests in the same subject-matter area will be unnecessary. Low-volume tests, particularly in vocational and technical subjects, should be shifted to programmes such as HEART/NTA or done as in-school assessments with school and teacher documentation that is keyed to curriculum for these subject areas.

It is also noted that these recommendations rest on assumptions that the following aspects of Jamaican assessment can be kept at or brought to high standards with respect to:

- Efficiency of scoring and processing;
- Social currency of Jamaican tests relative to international tests;
- Reliability and validity of the examinations;
- Security of examination content, administration, and scoring.

The study notes that a longer-range goal that should be further explored is to use the endorsement of an external authority such as the CXC to attest to the quality of the Jamaican examinations as has been planned with local examinations developed by Barbados. The work of the CXC with Barbados's local examinations has been underway for approximately two years, but has recently been put on hold for reasons that have been described to us as unrelated to technical issues with the scheme, and likely to be a temporary hiatus in development rather than a permanent one. It should be noted especially that this Barbados activity is intended to cover approximately 35 examinations, while the recommendation that the present report makes to Jamaica covers only approximately five examinations.

Table 9 below summarizes the study's recommendations.

Examination	Immediate Action	Longer-range Action	Goal
Primary school examinations (readiness, diagnostic, literacy, placement, national monitoring). Grade 9 Achievement Test (GNAT)	Unchanged Eliminated	Review alignment of primary & secondary school curricula and exams	Alignment of primary & secondary education Quality places for all students.
Junior High School Certificate (JHSC) End of Grade 9 <i>Becomes</i> Jamaica Secondary School Proficiency Examination (End of Grade 9 <u>or until passing score attained</u>).	Plan transition to JSSP (Jamaica Secondary School Proficiency Examination—see below.) (Phase out selection/ placement function.) Analyze correspondence between JHSC examination and requirements of a school leaving examination.	Replace with JSSP Maintain four core academic areas plus writing and R&T. Utilize item banks and analyses. Establish cutoff scores Evaluations of effectiveness, technical quality, and fairness of new examinations.	Documentation of core academic competencies for all school leavers.
Jamaica School-Leaving Transcript (new document)	Design Transcript to include achievement test scores; noncognitive ratings; course and grade information; School-Leaving Examination scores.		Documentation of full range of school and personal attainments for all Jamaican students.
Secondary School Certificate Examinations (SSC)	Revise based on core Jamaica curriculum.	Seek CXC assistance to verify quality of examinations and conduct content correspondence and pass rate studies.	Alignment of curriculum & exams for students in SSC programme; improved public acceptance of SSC credentials.
Caribbean Examinations Council (CXC) Secondary Level Examinations.	Revise Jamaican curriculum to improve applicability to all Jamaican students and to establish alignment with CXC curriculum.	Clearly defined and equally resourced course sequence options for senior secondary students.	More effective teaching. Expansion of number of successful CXC candidates.

References

- American Educational Research Association, American Psychological Association, & National Council on Measurement in Education. 1999. *Standards for Educational and Psychological Testing*. Washington, DC: American Psychological Association.
- C.A.T.C. Limited. 1997. "Reform of Secondary Education Grades 7-9 Curriculum Evaluation" (Deliverables: #2 Mathematics, #3 English/Language Arts, #4 Social Studies, and #5 Science). Kingston, Jamaica.
- Educational Testing Service. 2000. "ETS Standards for Quality and Fairness." Princeton, NJ.
- Glaser, R., and Silver, E. 1994. *Assessment, Testing, and Instruction: Retrospect and Prospect*. CSE Technical Report Series No. 379. Washington, DC: National Center for Research on Evaluation, Standards and Testing.
- Harris, A. M. January, 2002. *Aide Memoire on Student Assessment and Examination Rationalization: 7-11 January 2002*. Washington, DC: World Bank.
- Joint Committee on Standards for Educational Evaluation. In press. *The Student Evaluation Standards*. Thousand Oaks, CA: Corwin Press. <http://ec.wmich.edu/jointcomm/ses/>
- Linn, R.L., Baker, E.L., and Dunbar, S.B. 1991. "Complex, Performance-Based Assessment: Expectations and Validation Criteria." *Educational Researcher* 20(8): 15-21.
- Messick, S. 1989. "Validity." In R. Linn, ed., *Educational Measurement*, 3rd ed., pp. 13-103. New York: Macmillan.
- Ministry of Education, Youth, and Culture. 2000. *Jamaican Educational Statistics 1998-1999*. Kingston, Jamaica.
- Stiggins, R. 1999. "Evaluating Classroom Assessment Training in Teacher Education Programs." *Educational Measurement: Issues and Practice*, 18: 23-27.
- UNESCO. 1990. *World Declaration on Education for All and Framework for Action to Meet Basic Learning Needs*. Washington, DC.
- World Bank. 1998. *A Study of Secondary Education in Jamaica: Improving Quality and Expanding Access*. Washington, DC.
- . 2002a. "Project Appraisal Document on a Proposed Loan to Jamaica for a Reform of Secondary Education Project II." May. Washington, DC.
- . 2002b. "Terms of Reference: Reform of the National and Regional Secondary Level Examinations, Reform of Secondary Education (Rose II)." April. Washington, DC.

Appendices

Appendix A: Schedule of Consultants' Meetings, Kingston, Jamaica, May 21-25, 2002.

Individuals and groups consulted regarding student characteristics desirable for employment. Schools and other sites visited.

Appendix B: Sample Junior High School Examination Certificate of Performance

Appendix C: Acronyms and Specialized Terms Used in This Report

Appendix D: CXC and SSC Registrations and Performance by Institution (2001)

Appendix E: CXC Cost Estimates

**Appendix B: Sample Junior High School Examination
Certificate of Performance**

To Be Photocopied Here

Appendix C: Acronyms and Specialized Terms Used in This Report

All age schools	Schools providing education up to grade 9. All age schools are found primarily in rural areas; goal is to upgrade and create primary and junior high departments
CEE	Common Entrance Examination (Jamaican)
CXC	Caribbean Examinations Council and its regional examinations
GNAT	Grade Nine Achievement Test (Jamaican), now eliminated
HEART	Human Employment and Resource Training Trust
Junior high schools	Include grades 7, 8, and 9
JHSC	Junior High School Certificate Examination (Jamaican)
JSSP	Jamaica Secondary School Proficiency Examination; proposed revision and expansion of JHSC
MOEYC; MOEC	Ministry of Education, Youth, and Culture; alternatively, in some documents, MOEC, Ministry of Education and Culture.
Primary schools	Include grades 1 through 6
ROSE	Reform of Secondary Education; series of projects launched in 1993 to improve Jamaican education on a systemic basis; phase I completed; phase II underway
SAU	Student Assessment Unit, MOEYC; develops, analyzes, and reports scores for Jamaican tests
SSC	Secondary School Certificate Examinations (Jamaican)
TOR	Terms of Reference; set of requirements for a study

		CXC English Language											
Parish	Name of School	Type	Eligible Cohort (Grade 11)	# Sitting	% of Eligible Cohort	Grade 1	%	Grade 2	%	Grade 3	%	Total Passes	%
Kingston/St. Andrew	Edith Dalton James	UH	243	57	23	2	4	5	9	40	70	47	82
Kingston/St. Andrew	Excelsior High	SH	345	349	101	34	10	65	19	96	28	195	56
Kingston/St. Andrew	Gaynstead High	UH	162	4	2	0	0	1	25	0	0	1	25
Kingston/St. Andrew	Haile Selassie High	UH	162	6	4	0	0	0	0	2	33	2	33
Kingston/St. Andrew	Holy Childhood High	SH	199	318	160	119	37	85	27	67	21	271	85
Kingston/St. Andrew	Holy Trinity High	UH	364	85	23	1	1	9	11	20	24	30	35
Kingston/St. Andrew	Immaculate Conception High	SH	220	215	98	158	73	38	18	15	7	211	98
Kingston/St. Andrew	Jamaica College	SH	236	199	84	13	7	28	14	57	29	98	49
Kingston/St. Andrew	Kingston College	SH	220	225	102	43	19	45	20	88	39	176	78
Kingston/St. Andrew	Kingston High	UH	186	25	13	1	4	0	0	4	16	5	20
Kingston/St. Andrew	Lister Mair Gilby High	UH											
Kingston/St. Andrew	Mavis Bank High	UH	70	11	16	0	0	0	0	1	9	1	9
Kingston/St. Andrew	Meadowbrook High	SH	219	231	105	58	25	65	28	58	25	181	78
Kingston/St. Andrew	Merle Grove High	SH	250	259	104	41	16	75	29	81	31	197	76
Kingston/St. Andrew	Mona High	UH	214	109	51	3	3	8	7	33	30	44	40
Kingston/St. Andrew	Norman Manley	UH	348	204	59	1	0	8	4	32	16	41	20
Kingston/St. Andrew	Oberlin High	SH	318	225	71	18	8	28	12	86	38	132	59
Kingston/St. Andrew	Papine High	SH	270	50	19	1	2	4	8	12	24	17	34
Kingston/St. Andrew	Pembroke Hall High	UH											
Kingston/St. Andrew	Penwood High	UH	103	7	7	0	0	0	0	0	0	0	0
Kingston/St. Andrew	Priory High	SH	55	55	100	8	15	6	11	9	16	23	42
Kingston/St. Andrew	St. Andrew High	SH	225	223	99	90	40	59	26	51	23	200	90
Kingston/St. Andrew	St. Hugh's High	SH	273	261	96	60	23	78	30	84	32	222	85
Kingston/St. Andrew	St. Anne's High	UH	91	6	7	1	17	0	0	2	33	3	50
Kingston/St. Andrew	St. George's College	SH	222	222	100	25	11	53	24	62	28	140	63
Kingston/St. Andrew	Tarrant High	UH	221	85	38	0	0	0	0	9	11	9	11
Kingston/St. Andrew	The Queen's School	SH	278	273	98	60	22	64	23	93	34	217	79
Kingston/St. Andrew	Tivoli Gardens High	SH	361	42	12	4	10	5	12	10	24	19	45
Kingston/St. Andrew	Trench Town High	SH	78	25	32	0	0	0	0	2	8	2	8
Kingston/St. Andrew	Vauxhall High	UH	379	61	16	2	3	7	11	18	30	27	44
Kingston/St. Andrew	Wolmer's Boys' School	SH	217	211	97	57	27	64	30	61	29	182	86
Kingston/St. Andrew	Wolmer's Girls' School	SH	172	172	100	67	39	61	35	39	23	167	97
Manchester	Bellfield High	UH	309	43	14	3	7	17	40	7	16	27	63
Manchester	Bishop Gibson High	SH	118	106	90	44	42	25	24	31	29	100	94
Manchester	Christiana High	UH	417	132	32	5	4	9	7	27	20	41	31
Manchester	Cross Keys High	UH	85	16	19	0	0	0	0	2	13	2	13
Manchester	Decarteret College	SH	159	160	101	37	23	39	24	55	34	131	82

		CXC English Language											
Parish	Name of School	Type	Eligible Cohort (Grade 11)	# Sitting	% of Eligible Cohort	Grade 1	%	Grade 2	%	Grade 3	%	Total Passes	%
Manchester	Manchester High	SH	293	276	94	61	22	64	23	79	29	204	74
Manchester	May Day High	UH	130	56	43	0	0	1	2	13	23	14	25
Manchester	Mile Gully High	UH	111	37	33	0	0	0	0	2	5	2	5
Manchester	Porus High	UH	198	32	16	6	19	9	28	11	34	26	81
Manchester	Winston Jones High	UH	64	14	22	1	7	4	29	5	36	10	71
Portland	Buff Bay High	UH	120	34	28	0	0	4	12	6	18	10	29
Portland	Fair Prospect High	UH	138	16	12	0	0	0	0	0	0	0	0
Portland	Happy Grove High	SH	187	25	13	5	20	5	20	12	48	22	88
Portland	Port Antonio High	UH	289	118	41	0	0	8	7	22	19	30	25
Portland	Titchfield High	SH	345	195	57	26	13	39	20	63	32	128	66
St. Ann	Aabuthnott Gallimore High	UH	196	20	10	2	10	3	15	5	25	10	50
St. Ann	Aboukir Educational Institution	Special											
St. Ann	Armadaile Juvenile Correctional Center	Special											
St. Ann	Brown's Town High	UH	575	175	30	3	2	8	5	33	19	44	25
St. Ann	Ferncourt High	SH	250	144	58	19	13	33	23	55	38	107	74
St. Ann	Iona High	UH	58	51	88	0	0	3	6	8	16	11	22
St. Ann	Marcus Garvey Technical	Tech											
St. Ann	Ocho Rios High	UH	486	47	10	3	6	12	26	16	34	31	66
St. Ann	St.Hilda's Diocesan High	SH	216	203	94	63	52	43	21	61	30	167	82
St. Ann	York Castle High	SH	196	79	40	8	10	16	20	25	32	49	62
St. Catherine	Ascot High	UH											
St. Catherine	Bog Walk High	UH	303	69	23	2	3	6	9	19	28	27	39
St. Catherine	Bridgeport High	UH	443	95	21	9	9	18	19	31	33	58	61
St. Catherine	Charlemont High	SH	189	158	84	15	9	29	18	43	27	87	55
St. Catherine	Ewarton High	UH	205	66	32	1	2	14	21	9	14	24	36
St. Catherine	Glengoffe High	UH	230	51	22	1	2	28	55	6	12	35	69
St. Catherine	Greater Portmore High	UH	166	56	34	1	2	6	11	19	34	26	46
St. Catherine	Guy's Hill High	UH	234	111	47	8	7	15	14	29	26	52	47
St. Catherine	Jonathan Grant High	UH	403	198	49	5	3	28	14	71	36	104	53
St. Catherine	Jose Marti Technical	Tech											
St. Catherine	McGrath High	UH	198	102	52	4	4	14	14	21	21	39	38
St. Catherine	Old Harbour High	UH	502	222	44	11	5	29	13	62	28	102	46
St. Catherine	Spanish Town High	UH	379	121	32	6	5	16	13	29	24	51	42
St. Catherine	St. Catherine High	SH	467	356	76	38	11	65	18	112	31	215	60
St. Catherine	St.Jago High	SH	292	234	80	54	23	50	21	62	26	166	71
St. Catherine	St.Mary's College	SH	162	108	67	8	7	19	18	42	39	69	64
St. Catherine	Tacius Golding High	UH	207	51	25	3	6	5	10	21	41	29	57

		CXC English Language											
Parish	Name of School	Type	Eligible Cohort (Grade 11)	# Sitting	% of Eligible Cohort	Grade 1	%	Grade 2	%	Grade 3	%	Total Passes	%
St. Catherine	Waterford High	UH	265	69	26	2	3	7	10	20	29	29	42
St. Catherine	Y.W.C.A School Leavers	Tech											
St. Elizabeth	B.B Coke High	UH	277	75	27	4	5	11	15	17	23	32	43
St. Elizabeth	Balaclava High	UH	202	35	17	3	9	5	14	12	34	20	57
St. Elizabeth	Black River High	UH	319	163	51	12	7	25	15	38	23	75	46
St. Elizabeth	Hampton High	SH	131	101	77	31	31	32	32	29	29	92	91
St. Elizabeth	Lacovia High	UH	331	46	14	1	2	3	7	18	39	22	48
St. Elizabeth	Lewisville High	UH	134	30	22	0	0	1	3	4	13	5	17
St. Elizabeth	Maggotty High	UH	401	139	35	3	2	10	7	34	24	47	34
St. Elizabeth	Munro College	SH	136	133	98	27	20	34	26	39	29	100	75
St. Elizabeth	Newell High	UH	129	42	33	0	0	2	5	5	12	7	17
St. James	Anchovy High	UH	386	67	17	1	1	19	28	22	33	42	63
St. James	Cambridge High	UH	267	120	45	4	3	10	8	34	28	48	40
St. James	Cornwall College	SH	232	225	97	44	20	50	22	61	27	155	69
St. James	Maldon High	UH	303	73	24	1	1	5	7	17	23	23	32
St. James	Montego Bay High	SH	151	130	86	72	55	26	20	19	15	117	90
St. James	Mount Alvernia High	SH	480	218	45	65	30	57	26	66	30	188	86
St. James	St.James High	UH	646	194	30	7	4	18	9	37	19	62	32
St. James	Teamwork Preparatory	Prep											
St. Mary	Brimmer Vale High	UH	185	23	12	2	9	2	9	6	26	10	43
St. Mary	Islington High	UH	201	36	18	0	0	1	3	1	3	2	6
St. Mary	Marymount High	SH	117	127	109	18	14	44	35	37	29	99	78
St. Mary	Oracabessa High	UH	238	11	5	0	0	2	18	5	45	7	64
St. Mary	St.Mary High	SH	258	237	92	33	14	44	19	75	32	152	64
St. Thomas	Tacky High	UH	171	84	49	3	4	4	5	26	31	33	39
St. Thomas	Morant Bay High	SH	188	189	101	64	34	47	25	53	28	164	87
St. Thomas	Robert Lightbourne High	UH	123	18	15	0	0	0	0	3	17	3	17
St. Thomas	Seafort High	UH	332	101	30	11	11	16	16	27	27	54	53
St. Thomas	St. Thomas Technical	Tech											
St. Thomas	Yallahs High	UH	223	6	3	1	17	0	0	2	33	3	50
Trelawny	Albert Town High	UH	313	96	31	7	7	6	6	32	33	45	47
Trelawny	Cedric Titus High	UH	202	35	17	0	0	5	14	6	17	11	31
Trelawny	Muschette High	UH	233	68	29	7	10	7	10	26	38	40	59
Trelawny	Westwood High	SH	128	109	85	58	53	32	29	17	16	107	98
Trelawny	William Knibb High	SH	204	125	61	19	15	27	22	39	31	85	68
Westmoreland	Frome Technical	Tech											
Westmoreland	Godfrey Stewart High	UH	262	35	13	3	9	0	0	5	14	8	23

PARISH	NAME OF SCHOOL	Type	Eligible Cohort (Grade 11)	SSC D2 - Language and Communication (Cont.)							SSC D1 - Language and Communication (Funct.)						
				Regis- tered	Absent	Sitting	5	4	3	2	1	Regis- tered	Absent	Sitting	3	2	1
Kingston/St. Andrew	Clan Carthy High	UH	245	106	5	101	3	26	37	21	14	144	25	119	3	40	76
Kingston/St. Andrew	Convent of Mercy (Alpha)	SH	187														
Kingston/St. Andrew	Denham Town High	UH	271	73		73	2	20	29	19	3	118	8	110	7	51	52
Kingston/St. Andrew	Donald Quarrie High	UH	259	168	1	167		35	61	53	18	89	6	83	1	29	53
Kingston/St. Andrew	Dunoon Park Technical	Tech		154	1	153	3	15	23	110	2	43		43	7	1	35
Kingston/St. Andrew	Edith Dalton James	UH	243	68	1	67	5	33	16	10	3	148	15	133	31	54	48
Kingston/St. Andrew	Excelsior High	SH	345														
Kingston/St. Andrew	Gaynstead High	UH	162														
Kingston/St. Andrew	Haile Selassie High	UH	162	15		15	1	4	5	2	3	59	1	58	4	21	33
Kingston/St. Andrew	Holy Childhood High	SH	199														
Kingston/St. Andrew	Holy Trinity High	UH	364	95		95		34	37	15	9	237	13	224	22	88	114
Kingston/St. Andrew	Immaculate Conception High	SH	220														
Kingston/St. Andrew	Jamaica College	SH	236														
Kingston/St. Andrew	Kingston College	SH	220														
Kingston/St. Andrew	Kingston High	UH	186	14		14	1	2	9	1	1	120	4	116	10	59	47
Kingston/St. Andrew	Lister Mair Gilby High	UH										2		2			2
Kingston/St. Andrew	Mavis Bank High	UH	70	23		23	1	7	10	5		48		48	4	22	22
Kingston/St. Andrew	Meadowbrook High	SH	219														
Kingston/St. Andrew	Merle Grove High	SH	250														
Kingston/St. Andrew	Mona High	UH	214	137	2	135		39	56	31	9	60	2	58	12	40	6
Kingston/St. Andrew	Norman Manley	UH	348	206		206	7	48	77	50	24	121	2	119	7	48	64
Kingston/St. Andrew	Oberlin High	SH	318	127		127		20	55	35	17						
Kingston/St. Andrew	Papine High	SH	270	92	3	89	2	29	44	8	6	156	25	131	16	71	44
Kingston/St. Andrew	Pembroke Hall High	UH		59		59		20	27	9	3	167	8	159	18	87	54
Kingston/St. Andrew	Penwood High	UH	103	17	2	15		2	6	4	3	66	21	45	1	24	20
Kingston/St. Andrew	Priory High	SH	55														
Kingston/St. Andrew	St. Andrew High	SH	225														
Kingston/St. Andrew	St. Hugh's High	SH	273														
Kingston/St. Andrew	St. Anne's High	UH	91	22		22		2	8	7	5	67	6	61	3	22	36
Kingston/St. Andrew	St. George's College	SH	222														
Kingston/St. Andrew	Tarrant High	UH	221	82	2	80	1	33	32	13	1	111	4	107	3	66	38
Kingston/St. Andrew	The Queen's School	SH	278														
Kingston/St. Andrew	Tivoli Gardens High	SH	361														
Kingston/St. Andrew	Trench Town High	SH	78	62		62		6	28	14	14	2		2		2	
Kingston/St. Andrew	Vauxhall High	UH	379	76	4	72	10	34	16	11	1	235	36	199	24	81	94
Kingston/St. Andrew	Wolmer's Boys' School	SH	217														
Kingston/St. Andrew	Wolmer's Girls' School	SH	172														
Manchester	Bellfield High	UH	309	157		157	15	37	63	36	6	144	2	142	32	66	44

PARISH	NAME OF SCHOOL	Type	Eligible Cohort (Grade 11)	SSC D2 - Language and Communication (Cont.)							SSC D1 - Language and Communication (Funct.)						
				Registered	Absent	Sitting	5	4	3	2	1	Registered	Absent	Sitting	3	2	1
Manchester	Bishop Gibson High	SH	118														
Manchester	Christiana High	UH	417	172	5	167	4	51	57	46	9	166	8	158	46	64	48
Manchester	Cross Keys High	UH	85	22		22	1	11	9	1		57	1	56	4	25	27
Manchester	Decarteret College	SH	159														
Manchester	Manchester High	SH	293														
Manchester	May Day High	UH	130	65		65	12	29	18	6		48		48	5	18	25
Manchester	Mile Gully High	UH	111	47	2	45		9	20	12	4	62	3	59	2	23	34
Manchester	Porus High	UH	198	34		34	13	16	2	2	1	166	3	163	49	70	44
Manchester	Winston Jones High	UH	64	26		26		7	11	5	3	42		42	10	11	21
Portland	Buff Bay High	UH	120	24		24	2	17	4	1		98	4	94	18	34	42
Portland	Fair Prospect High	UH	138	11		11		3	4	2	2	91	6	85		42	43
Portland	Happy Grove High	SH	187														
Portland	Port Antonio High	UH	289	149		149		24	44	50	31	116	37	79		18	61
Portland	Titchfield High	SH	345														
St. Ann	Aabuthnott Gallimore High	UH	196	88		88	11	41	23	13		95	7	88	22	41	25
St. Ann	Aboukir Educational Institution	Special	Special	21		21			14	7		22		22	6	11	5
St. Ann	Armadae Juvenile Correctional Center	Special	Special	13	2	11	1	1	4	5		8	2	6	4	2	
St. Ann	Brown's Town High	UH	575	222	1	221	8	65	97	43	8	349	4	345	50	148	147
St. Ann	Ferncourt High	SH	250														
St. Ann	Iona High	UH	58														
St. Ann	Marcis Garvey Technical	Tech		261	7	254	5	65	89	65	30	118	16	102	1	41	60
St. Ann	Ocho Rios High	UH	486	204	1	203	22	47	50	46	38	238	3	235	12	102	121
St. Ann	St.Hilda's Diocesan High	SH	216														
St. Ann	York Castle High	SH	196														
St. Catherine	Ascot High	UH		21		21		12	6	2	1	71	5	66	15	28	23
St. Catherine	Bog Walk High	UH	303	137		137	4	24	61	31	17	128	3	125	13	56	56
St. Catherine	Bridgeport High	UH	443	182	1	181	4	59	73	23	22	223	1	222	43	90	89
St. Catherine	Charlemont High	SH	189														
St. Catherine	Ewarton High	UH	205	22		22	1	9	3	8	1	181	3	178	24	70	84
St. Catherine	Glengoffe High	UH	230	90	7	83		7	33	33	10	105	1	104	5	23	76
St. Catherine	Greater Portmore High	UH	166	93	1	92	5	27	30	25	5	56		56	15	24	17
St. Catherine	Guy's Hill High	UH	234	147		147	14	63	44	17	9	66	2	64	4	33	27
St. Catherine	Jonathan Grant High	UH	403	362	4	358	7	112	106	96	37	14		14	1	9	4
St. Catherine	Jose Marti Technical	Tech		175	5	170	2	47	55	35	31	24	1	23	1	10	12
St. Catherine	McGrath High	UH	198	124		124	2	39	62	16	5	64		64	8	38	18
St. Catherine	Old Harbour High	UH	502	283	10	273	4	81	77	77	34	216	23	193	17	67	109
St. Catherine	Spanish Town High	UH	379	193	24	169	3	53	43	52	18	164	26	138	36	56	46

PARISH	NAME OF SCHOOL	Type	Eligible Cohort (Grade 11)	SSC D2 - Language and Communication (Cont.)							SSC D1 - Language and Communication (Funct.)						
				Registered	Absent	Sitting	5	4	3	2	1	Registered	Absent	Sitting	3	2	1
Trelawny	William Knibb High	SH	204														
Westmoreland	Frome Technical	Tech		234	7	227	22	62	74	49	20						
Westmoreland	Godfrey Stewart High	UH	262	37	3	34	2	12	16	3	1	197	15	182	18	73	91
Westmoreland	Grange Hill High	UH	260	135	10	125		22	51	33	19	100	13	87	14	25	48
Westmoreland	Little London High	UH	182	14		14		5	6	1	2	149	10	139	8	56	75
Westmoreland	Mannings High	SH	314														
Westmoreland	Maud McLeod High	UH	211	90	8	82	1	12	46	21	2	114	9	105	14	55	36
Westmoreland	Peter'sfield High	UH	396	322	24	298	3	42	74	106	73	88	25	63		16	47

PARISH	Name of School	Type	Eligible Cohort (Grade 11)	CXC Mathematics									
				# Sitting	% of Eligible Cohort	Grade 1	%	Grade 2	%	Grade 3	%	Total Passes	%
Clarendon	Alston High	UH	139	29	21	1	3	0	0	1	3	2	7
Clarendon	Bustamante High	UH	159	48	30	0	0	1	2	8	17	9	19
Clarendon	Central High	UH	425	24	6	0	0	1	4	0	0	1	4
Clarendon	Clarendon High	SH	296	183	62	0	0	11	6	29	16	40	22
Clarendon	Claude McKay Hig	UH	165	11	7	0	0	0	0	1	9	1	9
Clarendon	Denbigh High	UH	240	36	15	0	0	4	11	11	31	15	42
Clarendon	Edwin Allen High	SH	427	225	53	0	0	9	4	34	15	43	19
Clarendon	Garvey Maceo High	UH	276	176	64	0	0	9	5	6	3	15	9
Clarendon	Glenmuir High	SH	232	163	70	9	6	30	18	63	39	102	63
Clarendon	Kellits High	UH	230	31	13	0	0	0	0	1	3	1	3
Clarendon	Kemps High	UH	230	43	19	0	0	0	0	8	19	8	19
Clarendon	Knox College	SH	204	207	101	3	1	27	13	50	24	80	39
Clarendon	Lennon High	UH	271	67	25	0	0	3	4	4	6	7	10
Clarendon	Lister Mair Gilby (MayPen)												
Clarendon	Spaldings High	UH	411	109	27	1	1	5	5	18	17	24	22
Clarendon	Thompson Town High	UH	112	22	20	0	0	0	0	2		2	9
Hanover	Green Island High	UH	340	50	15	1	2	3	6	5	10	9	18
Hanover	Knocklava Technical	Tech											
Hanover	Merlene Ottey High	UH	0	50		1	2	2	4	6	12	9	18
Hanover	Rusea's High	SH	367	82	22	1	1	11	13	27	33	39	48
Kingston/St. Andrew	Ardenne High	SH	304	316	104	18	6	61	19	66	21	145	46
Kingston/St. Andrew	Calabar High	SH	309	185	60	2	1	12	6	36	19	50	27
Kingston/St. Andrew	Camperdown	SH	199	150	75	2	1	15	10	45	30	62	41

PARISH	Name of School	Type	Eligible Cohort (Grade 11)	CXC Mathematics									
				# Sitting	% of Eligible Cohort	Grade 1	%	Grade 2	%	Grade 3	%	Total Passes	%
Kingston/St. Andrew	Campion College	SH	208	205	99	116	57	61	30	23	11	200	98
Kingston/St. Andrew	Charlie Smith High	SH	90	27	30	0	0	0	0	2	7	2	7
Kingston/St. Andrew	Clan Carthy High	UH	245	51	21	0	0	0	0	1	2	1	2
Kingston/St. Andrew	Convent of Mercy (Alpha)	SH	187	262	140	12	5	53	20	74	28	139	53
Kingston/St. Andrew	Denham Town High	UH	271	40	15	0	0	0	0	4	10	4	10
Kingston/St. Andrew	Donald Quarrie High	UH	259	47	18	0	0	0	0	6	13	6	13
Kingston/St. Andrew	Dunoon Park Technical	Tech											
Kingston/St. Andrew	Edith Dalton James	UH	243	41	17	0	0	4	10	10	24	14	34
Kingston/St. Andrew	Excelsior High	SH	345	235	68	2	1	10	4	69	29	81	34
Kingston/St. Andrew	Haile Selassie High	UH	162	10	6	0	0	0	0	0	0	0	0
Kingston/St. Andrew	Holy Childhood High	SH	199	316	159	15	5	41	13	94	30	150	47
Kingston/St. Andrew	Holy Trinity High	UH	364	54	15	0	0	1	2	11	20	12	22
Kingston/St. Andrew	Immaculate Conception High	SH	220	216	98	46	21	72	33	59	27	177	82
Kingston/St. Andrew	Jamaica College	SH	236	142	60	1	1	11	8	33	23	45	32
Kingston/St. Andrew	Kingston College	SH	220	239	109	12	5	45	19	78	33	135	56
Kingston/St. Andrew	Kingston High	UH	186	10	5	0	0	0	0	3	30	3	30
Kingston/St. Andrew	Lister Mair Gilby High												
Kingston/St. Andrew	Mavis Bank High	UH	70	10	14	0	0	0	0	0	0	0	0
Kingston/St. Andrew	Meadowbrook High	SH	219	237	108	6	3	28	12	45	19	79	33
Kingston/St. Andrew	Merle Grove High	SH	250	278	111	1	0	6	2	52	19	59	21
Kingston/St. Andrew	Mona High	UH	214	74	35	0	0	1	1	10	14	11	15
Kingston/St. Andrew	Norman Manley	UH	348	81	23	1	1	1	1	8	10	10	12
Kingston/St. Andrew	Oberlin High	SH	318	162	51	0	0	4	2	35	22	39	24
Kingston/St. Andrew	Papine High	SH	270	46	17	0	0	0	0	0	0	0	0
Kingston/St. Andrew	Penwood High	UH	103	10	10	0	0	0	0	0	0	0	0
Kingston/St. Andrew	Priory High	SH	55	47	85	0	0	0	0	3	6	3	6
Kingston/St. Andrew	St. Andrew High	SH	225	226	100	27	12	50	22	63	28	140	62
Kingston/St. Andrew	St. Hugh's High	SH	273	191	70	0	0	31	16	83	43	114	60
Kingston/St. Andrew	St. Anne's High	UH	91	5	5	1	20	0	0	0	0	1	20
Kingston/St. Andrew	St. George's College	SH	222	203	91	5	2	13	6	46	23	64	32
Kingston/St. Andrew	Tarrant	UH	221	55	25	0	0	0	0	1	2	1	2
Kingston/St. Andrew	The Queen's High	SH	278	273	98	4	1	17	6	56	21	77	28
Kingston/St. Andrew	Tivoli Gardens High	SH	361	29	8	0	0	1	3	8	28	9	31
Kingston/St. Andrew	Trench Town High	SH	78	30	38	0	0	0	0	2	7	2	7
Kingston/St. Andrew	Vauxhall High	UH	379	28	7	0	0	0	0	8	29	8	29
Kingston/St. Andrew	Wolmer's Boys' School	SH	217	211	97	21	10	55	26	45	21	121	57

PARISH	Name of School	Type	Eligible Cohort (Grade 11)	CXC Mathematics									
				# Sitting	% of Eligible Cohort	Grade 1	%	Grade 2	%	Grade 3	%	Total Passes	%
Kingston/St. Andrew	Wolmer's Girls' School	SH	172	174	101	19	11	27	16	59	34	105	60
Manchester	Bellfield High	UH	309	79	26	0	0	1	1	8	10	9	11
Manchester	Bishop Gibson High	SH	118	118	100	6	5	16	14	24	20	46	39
Manchester	Christiana High	UH	417	56	13	0	0	0	0	4	7	4	7
Manchester	Cross Keys High	UH	85	5	6	0	0	0	0	1	20	1	20
Manchester	Decarteret College	SH	159	125	79	2	2	13	10	40	32	55	44
Manchester	Manchester High	SH	293	261	89	4	2	39	15	79	30	122	47
Manchester	May Day High	UH	130	41	32	0	0	0	0	4	10	4	10
Manchester	Mile Gully High	UH	111	39	35	0	0	0	0	0	0	0	0
Manchester	Porus High	UH	198	21	11	0	0	0	0	4	19	4	19
Manchester	Winston Jones High	UH	64	12	19	0	0	0	0	0	0	0	0
Portland	Buff Bay High	UH	120	16	13	0	0	1	6	4	25	5	31
Portland	Fair Prospect High	UH	138	8	6	0	0	0	0	2	25	2	25
Portland	Happy Grove High	SH	187	95	51	1	1	2	2	13	14	16	17
Portland	Port Antonio High	UH	289	86	30	0	0	1	1	1	1	2	2
Portland	Titchfield High	SH	345	119	34	4	3	15	13	47	39	66	55
St. Ann	Aabuthnott Gallimore High	UH	196	23	12	0	0	0	0	2	9	2	9
St. Ann	Armada Juvenile Correction Ctr	Special											
St. Ann	Brown's Town High	UH	575	186	32	0	0	3	2	12	6	15	8
St. Ann	Ferncour SH High	SH	250	178	71	0	0	7	4	16	9	23	13
St. Ann	Iona High	UH	58	16	28	0	0	0	0	3	19	3	19
St. Ann	Marcus Garvey Technical	Tech											
St. Ann	Ocho Rios High	UH	486	230	47	1	0	3	1	16	7	20	9
St. Ann	St.Hilda's Diocesan High	SH	216	149	69	2	52	23	15	49	33	74	50
St. Ann	York Castle High	SH	196	123	63	0	0	2	2	12	10	14	11
St. Catherine	Ascott High	UH	98	29	30	0	0	0	0	2	7	2	7
St. Catherine	Bog Walk High	UH	303	59	19	0	0	5	8	14	24	19	32
St. Catherine	Bridgeport High	UH	443	42	9	0	0	6	14	12	29	18	43
St. Catherine	Charlemont High	SH	189	143	76	0	0	7	5	29	20	36	25
St. Catherine	Ewarton High	UH	205	52	25	0	0	0	0	4	8	4	8
St. Catherine	Glengoffe High	UH	230	27	12	0	0	0	0	0	0	0	0
St. Catherine	Greater Portmore High	UH	166	21	13	0	0	0	0	1	5	1	5
St. Catherine	Guy's Hill High	UH	234	81	35	2	2	6	7	11	14	19	23
St. Catherine	Jonathan Grant High	UH	403	153	38	0	0	3	2	16	10	19	12
St. Catherine	Jose Marti Technical	Tech											
St. Catherine	McGrath High	UH	198	52	26	0	0	6	12	5	10	11	21

PARISH	Name of School	Type	Eligible Cohort (Grade 11)	CXC Mathematics									
				# Sitting	% of Eligible Cohort	Grade 1	%	Grade 2	%	Grade 3	%	Total Passes	%
St. Catherine	Old Harbour	UH	502	135	27	3	2	14	10	24	18	41	30
St. Catherine	Spanish Town High	UH	379	88	23	0	0	2	2	17	19	19	22
St. Catherine	St. Catherine High	SH	467	331	71	1	0	3	1	40	12	44	13
St. Catherine	St.Jago High	SH	292	196	67	3	2	20	10	52	27	75	38
St. Catherine	St.Mary's College	SH	162	72	44	0	0	2	3	24	33	26	36
St. Catherine	Tacius Golding High	UH	207	67	32	0	0	3	4	4	6	7	10
St. Catherine	Waterford High	UH	265	73	28	0	0	1	1	9	12	10	14
St. Catherine	YWCA School Leavers	Special											
St. Elizabeth	B.B Coke High	UH	277	75	27	0	0	2	3	6	8	8	11
St. Elizabeth	Balaclava High	UH	202	37	18	0	0	0	0	1	3	1	3
St. Elizabeth	Black River High	UH	319	148	46	0	0	2	1	26	18	28	19
St. Elizabeth	Hampton High	SH	131	128	98	5	4	16	13	29	23	50	39
St. Elizabeth	Lacovia High	UH	331	55	17	0	0	2	4	4	7	6	11
St. Elizabeth	Lewisville High	UH	177	32	18	0	0	1	3	1	3	2	6
St. Elizabeth	Maggotty High	UH	401	109	27	1	1	2	2	7	6	10	9
St. Elizabeth	Munro College	SH	136	127	93	5	4	25	20	35	28	65	51
St. Elizabeth	Newell High	UH	129	23	18	0	0	0	0	1	4	1	4
St. James	Anchovy High	UH	386	105	27	0	0	3	3	12	11	15	14
St. James	Cambridge High	UH	267	59	22	0	0	0	0	17	29	17	29
St. James	Cornwall College	SH	232	223	96	9	4	19	9	36	16	64	29
St. James	Maldon High	UH	303	70	23	0	0	0	0	5	7	5	7
St. James	Montego Bay High	SH	151	133	88	17	13	30	23	43	32	90	68
St. James	Mount Alvernia High	SH	480	216	45	1	0	23	11	55	25	79	37
St. James	St.James High	UH	646	88	14	0	0	0	0	7	8	7	8
St. James	Teamwork Prep	Special											
St. Mary	Brimmer Vale High	UH	154	24	0	0	1	1	4	2	8	3	13
St. Mary	Islington High	UH	193	15	8	0	0	0	0	2	13	2	13
St. Mary	Marymount High	SH	110	102	93	1	1	10	10	30	29	41	40
St. Mary	Oracabessa High	UH	238	25	11	0	0	0	0	10	40	10	40
St. Mary	St.Mary High	SH	270	210	78	2	1	18	9	51	24	71	34
St. Mary	Tacky High	UH	176	42	24	1	2	2	5	6	14	9	21
St.Thomas	Morant Bay High	SH	188	124	66	1	1	14	11	32	26	47	38
St.Thomas	Robert Lightbourne High	UH	123	9	7	0	0	0	0	0	0	0	0
St.Thomas	Seafort High	UH	332	89	27	0	0	1	1	9	10	10	11
St.Thomas	St. Thomas Technical	Tech											
St.Thomas	Yallahs High	UH	223	35	16	0	0	2	6	3	9	5	14

PARISH	Name of School	Type	Eligible Cohort (Grade 11)	CXC Mathematics									
				# Sitting	% of Eligible Cohort	Grade 1	%	Grade 2	%	Grade 3	%	Total Passes	%
Trelawny	Albert Town High	UH	313	83	27	0	0	2	2	12	14	14	17
Trelawny	Cedric Titus High	UH	202	31	15	0	0	1	3	1	3	2	6
Trelawny	Muschette High	UH	233	35	15	0	0	0	0	5	14	5	14
Trelawny	Westwood High	SH	128	92	72	9	10	18	20	35	38	62	67
Trelawny	William Knibb High	SH	204	141	69	0	0	5	4	15	11	20	14
Westmoreland	Fromm Technical	Tech											
Westmoreland	Godfrey Stewart High	UH	262	24	9	0	0	0	0	2	8	2	8
Westmoreland	Grange Hill High	UH	260	118	45	0	0	0	0	15	13	15	13
Westmoreland	Little London High	UH	182	9	5	0	0	1	11	1	11	2	22
Westmoreland	Mannings High	SH	314	307	98	10	3	33	11	70	23	113	37
Westmoreland	Maud McLeod High	UH	211	33	16	0	0	1	3	3	9	4	12
Westmoreland	Peter'sfield High	UH	396	10	3	0	0	0	0	0	0	0	0
			32,098	13,265								4,199	
												32%	of sitting
												13%	of cohort

Parish	Name of School	Type	Eligible Cohort (Grade 11)	SSC D4 - Mathematics (Cont.)							SSC D3 - Mathematics (Funct.)						
				Registered	Absent	Sitting	5	4	3	2	1	Registered	Absent	Sitting	3	2	1
Clarendon	Alston High	UH	139	82	1	81		2	13	33	33	66	4	62			62
Clarendon	Bustamante High	UH	159	33		33		1	5	23	4	115	16	99			99
Clarendon	Central High	UH	425	35	7	28	1		7	16	4	363	78	285	19		266
Clarendon	Clarendon High	SH	296														
Clarendon	Claude McKay Hig	UH	165	22		22		3	3	9	7	122	12	110	4		106
Clarendon	Denbigh High	UH	240	59		59	3	9	20	25	2	160		160	49		111
Clarendon	Edwin Allen High	SH	427														
Clarendon	Garvey Maceo High	UH	276	135		135	1	5	35	93	1	1		1			1
Clarendon	Glenmuir High	SH	232														
Clarendon	Kellits High	UH	230	75		75			7	37	31	99		99	3		96
Clarendon	Kemps High	UH	230	90	2	88		5	11	50	22	125	9	116	5		111
Clarendon	Knox College	SH	204														
Clarendon	Lennon High	UH	271	137	4	133	1	4	26	57	45	73	4	69			69
Clarendon	Lister Mair Gilby (MayPen)			1		1						7	1	6			6
Clarendon	Spaldings High	UH	411	143	8	135		3	14	55	63	172	8	164	1		163
Clarendon	Thompson Town High	UH	112	22	1	21		2	6	9	4	84	7	77	5		72
Hanover	Green Island High	UH	340	62	1	61	2	2	14	24	19	211	15	196	21		175
Hanover	Knocklava Technical	Tech		121	1	120	1	8	23	42	46	62		62	1		61
Hanover	Merlene Ottey High	UH	0	54	1	53	1	3	5	37	7	92	3	89	10		79
Hanover	Rusea's High	SH	367	165		165	9	20	44	65	27	171	7	164	36		128
Kingston/St. Andrew	Ardenne High	SH	304														
Kingston/St. Andrew	Calabar High	SH	309														
Kingston/St. Andrew	Camperdown	SH	199														
Kingston/St. Andrew	Campion College	SH	208														
Kingston/St. Andrew	Charlie Smith High	SH	90														
Kingston/St. Andrew	Clan Carthy High	UH	245	99	3	96		2	13	40	41	155	27	128	1		127
Kingston/St. Andrew	Convent of Mercy (Alpha)	SH	187														
Kingston/St. Andrew	Denham Town High	UH	271	20		20	1	1	3	11	4	69	4	65	12		53
Kingston/St. Andrew	Donald Quarrie High	UH	259	157	2	155		1	9	44	101	100	13	87	1		86
Kingston/St. Andrew	Dunoon Park Technical	Tech		121	1	120	4	5	12	95	4	50		50	9		41
Kingston/St. Andrew	Edith Dalton James	UH	243	63	3	60	1	3	12	22	22	153	10	143	4		139
Kingston/St. Andrew	Excelsior High	SH	345														
Kingston/St. Andrew	Haile Selassie High	UH	162	15		15				4	11	59	2	57			57
Kingston/St. Andrew	Holy Childhood High	SH	199														
Kingston/St. Andrew	Holy Trinity High	UH	364	42	2	40		5	7	17	11	290	5	285	17		268

Parish	Name of School	Type	Eligible Cohort (Grade 11)	SSC D4 - Mathematics (Cont.)							SSC D3 - Mathematics (Funct.)								
				Registered	Absent	Sitting	5	4	3	2	1	Registered	Absent	Sitting	3	2	1		
Kingston/St. Andrew	Immaculate Conception High	SH	220																
Kingston/St. Andrew	Jamaica College	SH	236																
Kingston/St. Andrew	Kingston College	SH	220									2		2				2	
Kingston/St. Andrew	Kingston High	UH	186	24		24		1		3	20	109	3	106		2		104	
Kingston/St. Andrew	Lister Mair Gilby High											2		2				2	
Kingston/St. Andrew	Mavis Bank High	UH	70	14		14	4	6	2	2		60	8	52		16		36	
Kingston/St. Andrew	Meadowbrook High	SH	219																
Kingston/St. Andrew	Merle Grove High	SH	250																
Kingston/St. Andrew	Mona High	UH	214	87	1	86	1	8	33	31	13	113	2	111		44		67	
Kingston/St. Andrew	Norman Manley	UH	348	148		148	2	6	27	67	46	173	5	168		15		153	
Kingston/St. Andrew	Oberlin High	SH	318	56		56			1	31	24	41		41		2		39	
Kingston/St. Andrew	Papine High	SH	270	59	1	58			7	37	14	190	27	163		2		161	
Kingston/St. Andrew	Penwood High	UH	103	47		47		7	10	15	15	179	12	167		13		154	
Kingston/St. Andrew	Priory High	SH	55	17	4	13		1	5	7		66	19	47				47	
Kingston/St. Andrew	St. Andrew High	SH	225																
Kingston/St. Andrew	St. Hugh's High	SH	273																
Kingston/St. Andrew	St. Anne's High	UH	91	17		17		2	4	8	3	72	1	71		11		60	
Kingston/St. Andrew	St. George's College	SH	222																
Kingston/St. Andrew	Tarrant	UH	221	75	1	74	1	2	9	54	8	119	6	113		10		103	
Kingston/St. Andrew	The Queen's High	SH	278																
Kingston/St. Andrew	Tivoli Gardens High	SH	361																
Kingston/St. Andrew	Trench Town High	SH	78	24		24		2	5	16	1	41	1	40		8		32	
Kingston/St. Andrew	Vauxhall High	UH	379	39	2	37		4	15	12	6	268	51	217		40		177	
Kingston/St. Andrew	Wolmer's Boys' School	SH	217																
Kingston/St. Andrew	Wolmer's Girls' School	SH	172																
Manchester	Bellfield High	UH	309	144		144	1	8	36	78	21	157	1	156		26		130	
Manchester	Bishop Gibson High	SH	118																
Manchester	Christiana High	UH	417	100	3	97		3	23	40	31	218	8	210		24		186	
Manchester	Cross Keys High	UH	85	27		27		1	5	14	7	52		52		3		49	
Manchester	Decarteret College	SH	159																
Manchester	Manchester High	SH	293																
Manchester	May Day High	UH	130	37	1	36		1	6	21	8	76	6	70		4		66	
Manchester	Mile Gully High	UH	111	43	1	42			6	29	7	66	2	64		2		62	
Manchester	Porus High	UH	198	39		39			9	18	12	161	6	155		4		151	
Manchester	Winston Jones High	UH	64	11		11			3	3	5	57		57		2		55	
Portland	Buff Bay High	UH	120	20		20	2	3	8	4	3	102	6	96		8		88	

Parish	Name of School	Type	Eligible Cohort (Grade 11)	SSC D4 - Mathematics (Cont.)							SSC D3 - Mathematics (Funct.)						
				Registered	Absent	Sitting	5	4	3	2	1	Registered	Absent	Sitting	3	2	1
St. Elizabeth	Lacovia High	UH	331	32	1	31	1	3	7	15	5	294	6	288	14	274	
St. Elizabeth	Lewisville High	UH	177	31	2	29		2	9	8	10	141	12	129	16	113	
St. Elizabeth	Maggotty High	UH	401	140	3	137	3	3	22	62	47	165	13	152	6	146	
St. Elizabeth	Munro College	SH	136														
St. Elizabeth	Newell High	UH	129	65	1	64		2		29	33	60		60	2	58	
St. James	Anchovy High	UH	386	44	22	22			1	7	14	175	28	147	20	127	
St. James	Cambridge High	UH	267	121	5	116		6	21	63	26	128	5	123	4	119	
St. James	Cornwall College	SH	232														
St. James	Maldon High	UH	303	81	1	80		2	19	28	31	186	16	170	1	4	165
St. James	Montego Bay High	SH	151														
St. James	Mount Alvernia High	SH	480														
St. James	St.James High	UH	646	84	2	82	2	7	23	32	18	538	63	475	45	430	
St. James	Teamwork Prep	Special		9		9				5	4	5		5		5	
St. Mary	Brimmer Vale High	UH	154	36	2	34		1	4	11	18	121	15	106	2	104	
St. Mary	Islington High	UH	193	62		62		1	4	9	48	128	6	122	1	121	
St. Mary	Marymount High	SH	110														
St. Mary	Oracabessa High	UH	238	27		27	2	5	15	4	1	211	2	209	2	30	177
St. Mary	St.Mary High	SH	270	75	4	71			3	37	31	74	3	71	1	70	
St. Mary	Tacky High	UH	176	57		57	1	4	21	29	2	107	8	99	7	92	
St.Thomas	Morant Bay High	SH	188														
St.Thomas	Robert Lightbourne High	UH	123	7		7			3	4		111	5	106	11	95	
St.Thomas	Seafort High	UH	332	180	3	177		4	36	84	53	99	1	98	3	95	
St.Thomas	St. Thomas Technical	Tech		51		51	2	14	14	16	5	181	8	173	55	118	
St.Thomas	Yallahs High	UH	223	108	5	103	1	3	16	39	44	111	29	82	4	78	
Trelawny	Albert Town High	UH	313	152	4	148		7	24	73	44	82	6	76	4	72	
Trelawny	Cedric Titus High	UH	202	41		41		5	24	12		142	3	139	1	45	93
Trelawny	Muschette High	UH	233	60	2	58		4	14	23	17	174	2	172	14	158	
Trelawny	Westwood High	SH	128														
Trelawny	William Knibb High	SH	204														
Westmoreland	Fromm Technical	Tech		186	4	182	4	8	52	73	45	71	2	69	5	64	
Westmoreland	Godfrey Stewart High	UH	262	37	3	34			4	13	17	197	21	176	2	174	
Westmoreland	Grange Hill High	UH	260	66		66			3	35	28	168	14	154	6	148	
Westmoreland	Little London High	UH	182	6		6			4	1	1	157	10	147	26	121	
Westmoreland	Mannings High	SH	314														
Westmoreland	Maud McLeod High	UH	211	37	3	34		5	5	17	7	164	14	150	11	139	
Westmoreland	Peter'sfield High	UH	396	277	31	246	2	3	17	103	121	132	17	115	2	113	

Appendix D provides tables listing the public secondary school institutions registering students for CXC and/or SSC examinations for English language and mathematics. The tables provide registration and performance data by institution for 2001. Analyses of the data indicate:

- Secondary high (SH) schools (traditional high schools) register students for CXC exams and not for SSC exams (only six of the 52 SH schools access CXC and SSC English language exams; only seven SH schools access CXC and SSC mathematics exams).
- Technical high schools register students for SSC exams and not for CXC exams.
- Upgraded high schools (UH), or comprehensive high schools, access both CXC and SSC exams; of the 83 UH schools, only four have no students sitting CXC and only two have no students sitting SSC.
- A large percentage of students in the eligible cohort (11th grade) do not sit either CXC or SSC exams; of students in secondary highs, 2,088 (17% of the eligible cohort, assuming no dual registration and no out-of-grade registrants) do not sit either CXC or SSC English language exams and 2,758 (23% of eligible cohort, assuming no dual registration and no out-of-grade registrants) do not sit either a CXC or SSC mathematics examination. (These figures were calculated by totaling the number of CXC and SSC registrants for each school and subtracting the total from the eligible 11th grade cohort in the school. Only schools where the eligible cohort was larger than the total exam registrations for the school were included in the calculations.)
- In most UH schools (63 schools for English language and 63 for mathematics) and in some SH schools (17 schools for English language and 14 for mathematics) the total number of exam registrations (CXC and SSC) for a subject is greater than the number of students in the eligible cohort. This likely reflects some registrations of out-of-grade students (e.g., those repeating a test) but it also appears that some students must be sitting both the CXC and the SSC.

Appendix E: Cost Estimate for Involvement of the Caribbean Examinations Council (CXC) in Jamaican Assessment Development Activities

The cost estimate that follows is based on information obtained at a meeting in September, 2002 at the CXC headquarters in Barbados. Mr. Baldwin Hercules was asked by Dr. Lucy Steward to convene the meeting in her absence. Mr. Hercules also invited Dr. Yuland Wright, Head of Measurement and Evaluation; and Mrs. Patricia King, Senior Registrar. Mrs. Loretta Anderson represented the National and Regional Secondary Level Examinations and the Reform of Secondary Education (Rose II) project team.

All figures on the attached cost estimate are in U.S. dollars. The cost estimate does not include costs that are currently part of the SSC testing program in Jamaica. It does include those marginal costs associated with the involvement of the CXC in developing and assuring the quality of the Jamaican examinations. *The costs shown are for the first year of operation. Certain one-time startup costs will not recur, such as syllabus setting, but would be replaced with less expensive review and revision activities.*

Background. At present, the CXC does the scoring and reporting of the Common Entrance Examination for Barbados, Trinidad & Tobago, and St. Lucia. The Local Examination project in Barbados was on the drawing board for two years, and its operational implementation is presently on hold. Mrs. Anderson explored the cost implications of CXC's providing a similar test development service to Jamaica. It is the assumption of the project team that such a service would improve the public and professional support, or social currency, for Jamaica's secondary school examinations as described in the body of our report.

For the purposes of planning, the CXC staff and Mrs. Anderson assumed that Jamaica would require a core of five subject areas and an individual student profile. In addition, some students would continue to take the CXC examinations as they do now. All of this test data, plus additional educational information, would be presented to each student on a special transcript at the time of his or her school leaving.

Assumptions about initial test development for a core of five subject areas. If asked to put in place the core of subjects, CXC would want to put together a team of two persons (a curriculum specialist and subject specialist) for two weeks for each course. Each member of the team would cost approximately US\$300 per day plus per diem, transportation, and accommodation cost. The latter direct costs have been estimated here at \$1000 per person, per trip for both Jamaica and CXC staff members. The CXC also highly recommended the inclusion of a continuous assessment component in the assessment, which is included in the cost estimate.

CXC staff felt strongly that there should be included at some point components for one Personal & Social Development assessment, one on Healthy Life Styles (could be included in a food and nutrition component), and one on Family Values.

The functions that the CXC would take on, after the decision is taken as to what should be on the Proficiency Certificate once it is completed, would be:

- The preparation of specimen papers
- Item writing and test development activities
- Assistance with data analysis and scoring

It was suggested that multiple choice, short answer, and structured responses be used. These would require pretesting with students in Jamaica.

Scoring by Barbados, if required, would be included in their management costs, as they already have in place software for this (for which Jamaica would pay a users' fee, included in the attached cost estimate). It was suggested by CXC that *at least* 15 classes totaling 400 students should be used for pretesting each subject.

For reasons of economy and efficiency, the production of test papers would be carried out in Jamaica. Circulation of the tests and their administration would also be the responsibility of Jamaica.

If needed, alternatively CXC Barbados could print and package examinations similar to what is done for the CXC examinations. The cost of this has *not* been included in the attached estimate, but they would need to set up at least an administrator and three assistants to carry out these functions.

The suggested time for this examination is mid-May, with marking to be done in June in Jamaica. The approximate rate of marking is 25 scripts per person per day for mathematics; English can be expected to have a lower rate, 20 scripts per person per day.

The preparation of each certificate with security features can be done by the CXC and is included in the estimate.

It was suggested that seasonal staff could be employed in Jamaica for the pretesting and operational testing preparatory work, marking, and data entry. This would require approximately 40 persons working 15 to 20 days each at an approximate rate of US \$40.00 per day.

Notes on schedule: The first draft test would take about one week (requiring one individual from Barbados and one from Jamaica). This would be followed by at least six weeks for Jamaican stakeholders to review and make comments on the first draft. The second draft would also take about one week (requiring one individual from Barbados and one from Jamaica). The CXC also indicated that to start off activities one month for item development and ten weeks for syllabus development would be needed.

Appendix Table E-1: Cost Estimate for Involvement of the Caribbean Examinations Council (CXC) in Jamaican Assessment Development Activities					
	N Subjects	N Technical Staff	Unit Cost US\$	# of Days	Total US\$
Preparing m/c & f/r items; test assembly*					
CXC staff time	5	5	300	10	75,000
CXC travel to Jamaica		15	1,000		15,000
Jamaica staff time	5	5	0	10	0
Jamaica travel to Barbados		10	1,000		10,000
Preparing continuous assessment component					
CXC staff time	5	5	300	3	22,500
CXC travel to Jamaica					
Jamaica staff time	5	5	0	3	0
Jamaica travel to Barbados					
Field testing in Jamaica					
		N temp clerical			
Printing and distribution	5		5	1,000	25,000
Preparatory work		10	40	2	800
Marking & QC		10	40	5	2,000
Data entry		10	40	5	2,000
Supervision of temps	2		300	5	3,000
Data analysis	2		300	5	3,000
Test revision	5		300	2	3,000
Operational testing in Jamaica**					
Scoring & reporting software from CXC					6,000
Create & print secure certificates		1		50,000	50,000
Communications					10,000
Total					\$227,300
* Multiple-choice questions and free-response (essays, problem sets, etc.) questions.					
** Comparable to current expenses for SSC; not estimated here.					