

**MEMORANDUM**

**December 5, 2013**

**TO:** The Honorable Chair and Members of The School Board of Miami-Dade County, Florida

**FROM:** Alberto M. Carvalho, Superintendent of Schools 

**SUBJECT: TRANSMITTAL OF RESEARCH BRIEF: MIAMI-DADE COUNTY PUBLIC SCHOOLS: 2012-2013 STUDENT PERFORMANCE IN INTERNATIONAL BACCALAUREATE AND CAMBRIDGE ADVANCED INTERNATIONAL CERTIFICATE OF EDUCATION PROGRAMS**

Attached please find a copy of the Research Brief, *Miami-Dade County Public Schools: 2012-2013 Student Performance in International Baccalaureate and Cambridge Advanced International Certificate of Education Programs*. The Research Brief summarizes the performance of Miami-Dade County Public Schools' (M-DCPS) students participating in the International Baccalaureate (IB) and Cambridge Advanced International Certificate of Education (AICE) programs. Outcome data are provided for the 12 M-DCPS schools offering the two programs and corresponding examinations. The number of IB examinations taken in M-DCPS increased by 7% from 2011-2012 to 2012-2013. The Cambridge program saw substantial growth in 2012-2013, with the number of AICE examinations taken by M-DCPS students increasing by 78%. Eighty percent of IB examinations received passing scores, and 57% of Cambridge AICE examinations received passing scores. At the conclusion of the 2012-2013 school year, 73% of eligible students received IB diplomas, and 48% of eligible Cambridge students received AICE diplomas.

If you need further information, please contact Ms. Milagros R. Fornell, Chief of Staff, at 305 995-4809, or Ms. Gisela Feild, Administrative Director, Assessment, Research, and Data Analysis, at 305 995-2943.

AMC:cb  
M492

Attachment

cc: School Board Attorney  
Superintendent's Cabinet  
Ms. Deborah Karcher  
Ms. Gisela Feild  
Dr. Aleksandr Shneyderman



# RESEARCH BRIEF

## Research Services

Vol. 1303  
December 2013

Christie Blazer, Supervisor

### **Miami-Dade County Public Schools: 2012-2013 Student Performance in International Baccalaureate and Cambridge Advanced International Certificate of Education Programs**

#### **Results at a Glance**

This Research Brief summarizes the performance of M-DCPS students participating in the International Baccalaureate (IB) and Cambridge Advanced International Certificate of Education (AICE) programs. Outcome data are provided for the 12 M-DCPS schools offering the two programs and corresponding examinations. The number of IB examinations taken in M-DCPS increased by 7% from 2011-2012 to 2012-2013. The Cambridge program saw substantial growth in 2012-2013, with the number of AICE examinations taken by M-DCPS students increasing by 78%. Eighty percent of IB examinations received passing scores and 57% of Cambridge AICE examinations received passing scores. At the conclusion of the 2012-2013 school year, 73% of eligible students received IB diplomas and 48% of eligible Cambridge students received AICE diplomas.

Beginning in the 2009-10 school year, Florida Senate Bill 1908 amended the School Performance Grade criteria for Florida's senior high schools. Half of each senior high school's performance grade is now based on FCAT scores and the other half is based on non-FCAT factors. Non-FCAT factors include the performance and participation of students in international studies programs, such as the International Baccalaureate (IB) and Cambridge Advanced International Certificate of Education (AICE) programs.

The IB and Cambridge AICE programs are rigorous pre-university curriculum and examination programs that emphasize the development of higher order thinking skills, including problem solving and creativity. The IB program provides students with a broad general education, while offering specialization in accordance with students' interests and plans. The Cambridge AICE program also provides a broad education and emphasizes a flexible curriculum that can be tailored to students' abilities, interests, and career plans. The IB and AICE diplomas are recognized at colleges and universities throughout the United States and worldwide.

This Research Brief includes a description of the IB and AICE programs and data on the 12 M-DCPS schools (six IB and six AICE) that implement these programs and administer the examinations. The number of IB and AICE examinations taken, the percentage of examinations

receiving passing scores, and the number and percentage of participating students earning diplomas are provided.

## **CAMBRIDGE ADVANCED INTERNATIONAL CERTIFICATE OF EDUCATION (AICE)**

The AICE program is based on Britain's A Level examinations and is administered and assessed by the University of Cambridge International Examinations, a department of the University of Cambridge in the United Kingdom. The four-year curriculum progresses from two years of preparatory classes in grades 9 and 10 to participation in the AICE diploma program in grades 11 and 12. The program emphasizes the development of higher order thinking skills, oral skills, writing skills, problem solving, real word applications, independent skills, teamwork, and international understanding. AICE courses are the equivalent of those offered at the U.S. university freshman level or beyond. The AICE program is available at four M-DCPS traditional high schools, one full service high school/vocational-technical training center, and one charter school: American Senior, G. Holmes Braddock Senior, Hialeah Gardens Senior, Keys Gate Charter High School, Miami Lakes Educational Center, and Ronald W. Reagan/Doral Senior.

The AICE program provides students with flexibility in class selection, allowing them to tailor their studies to their individual interests, abilities, and future plans. Students are required to complete six full-credit AICE courses and pass the corresponding examinations for each course. Within the AICE program, there are over 50 subjects from three curriculum areas: mathematics and science; languages; and arts and humanities. At least one course and examination must be from each of the three subject areas.

The AICE program uses a point system to award diplomas at three levels - Distinction, Merit, and Pass - based on students' coursework performance and examination scores. Students are required to demonstrate knowledge, understanding, and application. They must also show that they have acquired the skills of analysis, synthesis, and evaluation. Examinations receive passing letter grades ranging from A to E, with A being the highest. The lowest passing grade of E (or a score of 3) is equivalent to a U.S. grade of C or a 3 on an Advanced Placement examination. Performance below a grade of E receives a grade of U, ungraded, which is not considered as passing. Students must receive a score of E or higher on all of their examinations in order to receive an AICE diploma. Upon successful completion of the AICE program and admission to a college or university, high school students may be awarded up to 45 hours of credit from universities throughout the U.S. and from all public universities and colleges in Florida, based on each subject and examination grade earned.

The reader should note that the tables below include only the subject area examinations taken by students at M-DCPS schools, although the AICE program offers courses and examinations in over 50 subjects. General Paper is multi-disciplinary subject matter drawn from across the curriculum. The syllabus encourages candidates to make cross-curricular links; develop a maturity of thought; and achieve an understanding and usage of the English language that enables them to express arguments, ideas, and opinions in a reflective and academic manner. Data on students receiving AICE diplomas are not provided for American Senior and Keys Gate Charter High School. American Senior does not offer a full diploma track program and Keys Gate Charter High students were not yet eligible for AICE diplomas in 2012-2013.

Highlights of Cambridge AICE program outcomes are provided below. Results are not reported if fewer than 10 examinations were taken.

### **Participation in Cambridge AICE Examinations**

- In 2012-2013, AICE examinations were taken in 26 content areas. The number of AICE examinations taken by M-DCPS students increased by 78% (from 1,885 examinations in 2011-2012 to 3,349 examinations in 2012-2013).
- Of all AICE examinations taken during the 2012-2013 school year, the largest number was taken by students at Hialeah Gardens Senior. They participated in 36% of all AICE examinations. The percentages of examinations taken at the other five M-DCPS Cambridge schools were as follows:
  - Ronald W. Reagan/Doral Senior: 28%
  - G. Holmes Braddock Senior: 16%
  - American Senior: 10%
  - Miami Lakes Educational Center: 6%
  - Keys Gate Charter High School: 4%
- Overall, the most AICE examinations were taken in Thinking Skills, History, and General Paper (multi-disciplinary subject matter drawn from across the curriculum) in 2012-2013.
- In 2012-2013, AICE examinations were taken in more content areas (21) at Ronald W. Reagan/Doral Senior than at the other five M-DCPS Cambridge schools (15 content areas at Hialeah Gardens Senior, 14 content areas at G. Holmes Braddock Senior, 6 content areas at American Senior, 5 content areas at Miami Lakes Educational Center, and 2 content areas at Keys Gate Charter High School).
- Of the four M-DCPS high schools that administered AICE examinations in 2011-2012 and 2012-2013, the number of examinations taken increased by 15% at Miami Lakes Educational Center, 14% at Ronald W. Reagan/Doral Senior, and 4% at American Senior. The number of AICE examinations taken at G. Holmes Braddock Senior decreased by 4%.

### **Cambridge AICE Examination Results**

- Overall, the percentage of AICE examinations receiving passing scores decreased by 4 percentage points, from 61% in 2011-2012 to 57% in 2012-2013.
- From 2011-2012 to 2012-2013, the percentage of AICE examinations receiving passing scores increased at three of the four M-DCPS Cambridge high schools that administered AICE examinations both years (G. Holmes Braddock Senior, Miami Lakes Educational Center, and Ronald W. Reagan/Doral Senior). The percentage of passing examinations decreased at American Senior.
- During the 2012-2013 school year, Miami Lakes Educational Center had the highest percentage of AICE examinations receiving passing scores (88%), followed by Ronald

W. Reagan/Doral Senior (77%), G. Holmes Braddock Senior (63%), Keys Gate Charter High School (59%), Hialeah Gardens Senior (45%), and American Senior (12%).

- Overall, the 2012-2013 content areas in which the highest percentages of AICE examinations received passing scores were French Language, Spanish Language, and Spanish Literature. Content areas in which the lowest percentages of examinations received passing scores were Geography and Travel/Tourism.

### **Cambridge AICE Diploma Results**

- Grades 11 and 12 students who were enrolled in the AICE program and met all program requirements were eligible to receive AICE diplomas. Districtwide, the number of students eligible to receive AICE diplomas increased by 66% (from 118 students in 2011-2012 to 196 students in 2012-2013).
- A total of 94 M-DCPS students, or 48% of the 196 M-DCPS students enrolled in Cambridge full diploma track programs, received AICE diplomas at the conclusion of the 2012-2013 school year.
- Overall, the percentage of AICE program students receiving diplomas decreased by 18 percentage points (from 66% in 2011-2012 to 48% in 2012-2013).
- Ronald W. Reagan/Doral Senior had the highest percentage of Cambridge students receiving AICE diplomas (76%), followed by G. Holmes Braddock Senior (52%), Miami Lakes Educational Center (32%), and Hialeah Gardens Senior (21%).
- Of the three M-DCPS schools with students eligible for AICE diplomas in both 2011-2012 and 2012-2013, the percentage of students receiving diplomas increased at G. Holmes Braddock Senior, but decreased at Miami Lakes Educational Center and Ronald W. Reagan/Doral Senior.

Cambridge AICE program outcomes are presented in the following tables. Data are provided for the six M-DCPS AICE senior high schools combined and then separately for each school.

Table 9. Number of Students Taking Cambridge AICE Examinations and Percent Passing Examinations by Subject Area, 2011-2012 and 2012-2013  
**M-DCPS, All Cambridge AICE Schools Combined**

| Subject Area                   | # of Tests Taken |           | % of Tests Passed |           |
|--------------------------------|------------------|-----------|-------------------|-----------|
|                                | 2011-2012        | 2012-2013 | 2011-2012         | 2012-2013 |
| Art and Design                 | 0                | 136       | n/a               | 45%       |
| Biology                        | 56               | 87        | 20%               | 39%       |
| Biology 2                      | 45               | 3         | 42%               | n/a       |
| Business Studies               | 9                | 0         | n/a               | n/a       |
| Chemistry                      | 59               | 91        | 31%               | 22%       |
| Chemistry 2                    | 9                | 4         | n/a               | n/a       |
| Economics                      | 96               | 86        | 35%               | 52%       |
| English Language               | 201              | 355       | 78%               | 83%       |
| English Literature             | 221              | 206       | 59%               | 48%       |
| Environmental Management       | 0                | 97        | n/a               | 87%       |
| French/French Language         | 46               | 34        | 100%              | 100%      |
| French Literature              | 0                | 4         | n/a               | n/a       |
| General Paper                  | 123              | 434       | 90%               | 88%       |
| Geography                      | 34               | 28        | 0%                | 4%        |
| Global Perspectives & Research | 0                | 29        | n/a               | 90%       |
| History                        | 240              | 448       | 50%               | 38%       |
| Marine Science                 | 0                | 172       | n/a               | 37%       |
| Mathematics                    | 92               | 303       | 57%               | 31%       |
| Music                          | 0                | 3         | n/a               | n/a       |
| Physics                        | 53               | 34        | 36%               | 32%       |
| Physics 2                      | 9                | 28        | n/a               | 29%       |
| Psychology                     | 109              | 77        | 66%               | 61%       |

|                            |              |              |            |            |
|----------------------------|--------------|--------------|------------|------------|
| Sociology                  | 27           | 79           | 52%        | 60%        |
| Spanish Literature         | 3            | 34           | n/a        | 100%       |
| Spanish/Spanish Language   | 126          | 74           | 98%        | 100%       |
| Thinking Skills            | 327          | 483          | 66%        | 53%        |
| Travel/Tourism 1           | 0            | 20           | n/a        | 0%         |
| <b>Total, All Subjects</b> | <b>1,885</b> | <b>3,349</b> | <b>61%</b> | <b>57%</b> |

Table 10. Number of Students Taking Cambridge AICE Examinations and Percent Passing by Subject Area, 2011-2012 and 2012-2013  
**American Senior High**

| Subject Area               | # of Tests Taken |            | % of Tests Passed |            |
|----------------------------|------------------|------------|-------------------|------------|
|                            | 2011-2012        | 2012-2013  | 2011-2012         | 2012-2013  |
| Business Studies           | 9                | 0          | n/a               | n/a        |
| Chemistry                  | 20               | 26         | 0%                | 0%         |
| English Language           | 56               | 28         | 43%               | 25%        |
| English Literature         | 38               | 26         | 21%               | 8%         |
| Geography                  | 34               | 28         | 0%                | 4%         |
| History                    | 65               | 84         | 14%               | 6%         |
| Thinking Skills            | 98               | 142        | 17%               | 17%        |
| <b>Total, All Subjects</b> | <b>320</b>       | <b>334</b> | <b>18%</b>        | <b>12%</b> |



Table 11. Number of Students Taking Cambridge AICE Examinations and Percent Passing Examinations by Subject Area, 2011-2012 and 2012-2013

**G. Holmes Braddock Senior**

| Subject Area               | # of Tests Taken |            | % of Tests Passed |            |
|----------------------------|------------------|------------|-------------------|------------|
|                            | 2011-2012        | 2012-2013  | 2011-2012         | 2012-2013  |
| Biology                    | 52               | 27         | 14%               | 22%        |
| Chemistry                  | 16               | 13         | 75%               | 77%        |
| Economics                  | 36               | 18         | 22%               | 11%        |
| English Language           | 50               | 95         | 78%               | 84%        |
| English Literature         | 95               | 86         | 56%               | 28%        |
| General Paper              | 53               | 81         | 100%              | 90%        |
| History                    | 51               | 41         | 26%               | 32%        |
| Mathematics                | 25               | 11         | 28%               | 82%        |
| Physics                    | 9                | 7          | n/a               | n/a        |
| Psychology                 | 35               | 46         | 77%               | 54%        |
| Sociology                  | 27               | 47         | 52%               | 70%        |
| Spanish Literature         | 3                | 3          | n/a               | n/a        |
| Spanish/Spanish Language   | 56               | 21         | 96%               | 100%       |
| Thinking Skills            | 65               | 55         | 74%               | 78%        |
| <b>Total, All Subjects</b> | <b>573</b>       | <b>551</b> | <b>60%</b>        | <b>63%</b> |

Table 12. Number of Students Taking Cambridge AICE Examinations and Percent Passing Examinations by Subject Area, 2011-2012 and 2012-2013  
**Hialeah Gardens Senior**

| Subject Area               | # of Tests Taken |              | % of Tests Passed |            |
|----------------------------|------------------|--------------|-------------------|------------|
|                            | 2011-2012        | 2012-2013    | 2011-2012         | 2012-2013  |
| Art and Design             | 0                | 136          | n/a               | 45%        |
| Biology                    | 0                | 20           | n/a               | 20%        |
| Chemistry                  | 0                | 27           | n/a               | 22%        |
| English Language           | 0                | 125          | n/a               | 85%        |
| English Literature         | 0                | 2            | n/a               | n/a        |
| Environmental Management   | 0                | 12           | n/a               | 67%        |
| General Paper              | 0                | 207          | n/a               | 87%        |
| History                    | 0                | 173          | n/a               | 20%        |
| Marine Science             | 0                | 144          | n/a               | 35%        |
| Mathematics                | 0                | 206          | n/a               | 14%        |
| Music                      | 0                | 3            | n/a               | n/a        |
| Sociology                  | 0                | 32           | n/a               | 44%        |
| Spanish/Spanish Language   | 0                | 22           | n/a               | 100%       |
| Thinking Skills            | 0                | 73           | n/a               | 36%        |
| Travel Tourism 1           | 0                | 20           | n/a               | 0%         |
| <b>Total, All Subjects</b> | <b>0</b>         | <b>1,202</b> | <b>n/a</b>        | <b>45%</b> |

Table 13. Number of Students Taking Cambridge AICE Examinations and Percent Passing by Subject Area, 2011-2012 and 2012-2013  
**Keys Gate Charter High School**

| Subject Area               | # of Tests Taken |            | % of Tests Passed |            |
|----------------------------|------------------|------------|-------------------|------------|
|                            | 2011-2012        | 2012-2013  | 2011-2012         | 2012-2013  |
| General Paper              | 0                | 66         | n/a               | 84%        |
| Thinking Skills            | 0                | 61         | n/a               | 33%        |
| <b>Total, All Subjects</b> | <b>0</b>         | <b>127</b> | <b>n/a</b>        | <b>59%</b> |

Table 14. Number of Students Taking Cambridge AICE Examinations and Percent Passing by Subject Area, 2011-2012 and 2012-2013  
**Miami Lakes Educational Center**

| Subject Area               | # of Tests Taken |            | % of Tests Passed |            |
|----------------------------|------------------|------------|-------------------|------------|
|                            | 2011-2012        | 2012-2013  | 2011-2012         | 2012-2013  |
| English Language           | 40               | 40         | 100%              | 100%       |
| English Literature         | 28               | 39         | 93%               | 97%        |
| History                    | 28               | 39         | 82%               | 82%        |
| Mathematics                | 14               | 35         | 86%               | 69%        |
| Psychology                 | 17               | 0          | 47%               | n/a        |
| Thinking Skills            | 44               | 43         | 89%               | 91%        |
| <b>Total, All Subjects</b> | <b>171</b>       | <b>196</b> | <b>87%</b>        | <b>88%</b> |

Table 15. Number of Students Taking Cambridge AICE Examinations and Percent Passing Examinations by Subject Area, 2011-2012 and 2012-2013  
**Ronald W. Reagan/Doral Senior**

| Subject Area                   | # of Tests Taken |            | % of Tests Passed |            |
|--------------------------------|------------------|------------|-------------------|------------|
|                                | 2011-2012        | 2012-2013  | 2011-2012         | 2012-2013  |
| Biology                        | 4                | 40         | n/a               | 60%        |
| Biology 2                      | 45               | 3          | 42%               | n/a        |
| Chemistry                      | 23               | 25         | 26%               | 16%        |
| Chemistry 2                    | 9                | 4          | n/a               | n/a        |
| Economics                      | 60               | 68         | 43%               | 63%        |
| English Language               | 55               | 67         | 96%               | 93%        |
| English Literature             | 60               | 53         | 73%               | 66%        |
| Environmental Management       | 0                | 85         | n/a               | 89%        |
| French/French Language         | 46               | 34         | 100%              | 100%       |
| French Literature              | 0                | 4          | n/a               | n/a        |
| General Paper                  | 70               | 80         | 83%               | 91%        |
| Global Perspectives & Research | 0                | 29         | n/a               | 90%        |
| History                        | 96               | 111        | 77%               | 76%        |
| Marine Science                 | 0                | 28         | n/a               | 46%        |
| Mathematics                    | 53               | 51         | 62%               | 67%        |
| Physics                        | 44               | 27         | 36%               | 26%        |
| Physics 2                      | 9                | 28         | n/a               | 29%        |
| Psychology                     | 57               | 31         | 65%               | 71%        |
| Spanish Literature             | 0                | 31         | n/a               | 100%       |
| Spanish/Spanish Language       | 70               | 31         | 100%              | 100%       |
| Thinking Skills                | 120              | 109        | 93%               | 94%        |
| <b>Total, All Subjects</b>     | <b>821</b>       | <b>939</b> | <b>74%</b>        | <b>77%</b> |

Table 16. Number and Percent of Students Receiving Cambridge AICE Diplomas, by School and M-DCPS Overall, 2011-2012 and 2012-2013

| School                                   | Number of Students Eligible for AICE Diplomas* |            | Number of Students Receiving AICE Diplomas |           | Percent of Students Receiving AICE Diplomas |            |
|--|--|------------|--|-----------|---|------------|
|  | 2011-2012                                      | 2012-2013  | 2011-2012                                  | 2012-2013 | 2011-2012                                   | 2012-2013  |
| American Senior**                        | n/a  | n/a        | n/a  | n/a       | n/a   | n/a        |
| G. Holmes Braddock                       | 46   | 50         | 17   | 26        | 37%   | 52%        |
| Hialeah Gardens                          | n/a  | 14         | n/a  | 3         | n/a   | 21%        |
| Keys Gate Charter***                     | n/a  | 0          | n/a  | n/a       | n/a   | n/a        |
| Miami Lakes Educational Center           | 11   | 81         | 6  | 26        | 55%   | 32%        |
| Ronald W. Reagan/<br>Doral Senior        | 61   | 51         | 55   | 39        | 90%   | 76%        |
| <b>Total, All Cambridge AICE Schools</b> | <b>118</b>                                     | <b>196</b> | <b>78</b>                                  | <b>94</b> | <b>66%</b>                                  | <b>48%</b> |

Notes:

- \* Computation of Number of Students Eligible for AICE Diplomas includes grades 11 and 12 students who met all AICE program requirements.
- \*\* Data on students receiving Cambridge AICE diplomas are not provided for American Senior because the school did not offer a full diploma track program.
- \*\*\* Students enrolled in the Cambridge AICE program at Keys Gate Charter High School were not yet eligible for diplomas in 2012-2013.

## CONCLUSION

This Research Brief summarized the performance of M-DCPS students participating in the IB and Cambridge AICE programs. The IB and Cambridge AICE programs are rigorous pre-university curriculum and examination programs that emphasize the value of broad and balanced study. Both programs promote the development of higher order thinking skills, intercultural understanding, and independent learning.

Six M-DCPS high schools offered the IB program and administered the corresponding IB examinations during the 2012-2013 school year: Coral Gables Senior, Coral Reef Senior, John A. Ferguson Senior, Miami Beach Senior, North Miami Senior, and South Dade Senior. Six M-DCPS schools offered the Cambridge AICE program and administered the corresponding examinations during 2012-2013: American Senior, G. Holmes Braddock Senior, Hialeah Gardens Senior, Keys Gate Charter High School, Miami Lakes Educational Center, and Ronald W. Reagan/Doral Senior.

Participation in the IB program continued to grow, with the number of IB examinations taken increasing by 7% from 2011-2012 to 2012-2013. Over 3,000 IB examinations were taken by M-DCPS students in 26 content areas in 2012-2013. Passing rates ranged from 57% to 89% at each of the schools, with an overall passing rate of 80% across the six schools. Coral Reef Senior and Miami Beach Senior had the highest percentages of IB examinations receiving passing scores. Overall, 73% of eligible students received an IB diploma at the conclusion of the 2012-2013 school year.

The Cambridge program saw substantial growth in 2012-2013. The number of Cambridge AICE examinations taken by M-DCPS students increased by 78% from 2011-2012 to 2012-2013. M-DCPS students took 3,349 AICE examinations in 26 content areas in 2012-2013. Two new M-DCPS schools (Hialeah Gardens Senior and Keys Gate Charter High School) administered AICE examinations for the first time in 2012-2013. Passing rates on AICE examinations ranged from 12% to 88% at each of the schools, with an overall passing rate of 57% across the six participating schools. Miami Lakes Educational Center had the highest percentage of AICE examinations receiving passing scores. Overall, 48% of eligible students received a Cambridge AICE diploma at the conclusion of the 2012-2013 school year.