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MA Department of Elementary and Secondary Education

Evaluation of the Statewide STEM Advanced Placement Program

Year 4 Teacher Survey Results 2016

February 27, 2017

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# Introduction

The Massachusetts Department of Elementary and Secondary Education (ESE) is engaged in numerous initiatives to increase the college and career readiness of students in the Commonwealth, to reduce proficiency gaps and improve academic achievement for all population groups, and to enhance the “STEM pipeline” of students who are interested in and well prepared for postsecondary education and careers in science, technology, mathematics, and engineering.

One of these initiatives is the Advancing STEM through an Advanced Placement Science and Mathematics program (hereafter “the program” or the “Advancing STEM AP program”). The goals of the program are to:

1. Increase AP science and mathematics course availability, particularly at schools with limited AP science and mathematics offerings and high percentages of low income and minority students;
2. Increase access to and participation in AP science and mathematics courses, particularly for students from ethnic, racial, gender, English proficiency, and socioeconomic groups that have been traditionally underserved, so the demographics of these courses better reflect the diversity of the student population of the school and district;
3. Increase student achievement in AP science and mathematics courses, particularly to close Massachusetts academic achievement gaps;
4. Increase readiness for college-level study in STEM fields;
5. Improve science and mathematics teacher effectiveness, including content knowledge and pedagogical skills; and
6. Increase student interest in pursuing a STEM degree or a STEM-related career after high school.

In order to meet these program goals and track efforts to improve student achievement, ESE contracted with Mass Insight Education’s Mass Math + Science Initiative (MMSI) as a vendor to implement tasks and responsibilities aligned with the purposes of the program. The implementation of the statewide Advancing STEM AP program involves four key tasks to be implemented in partner schools:

1. Increase participation in AP science and mathematics courses, particularly among underserved populations;
2. Increase performance in AP science and mathematics courses, particularly among underserved populations;
3. Increase the number of new and/or additional AP science and mathematics courses offered by the partner districts and schools; and
4. Work in conjunction with statewide Race to the Top (RTTT) pre-AP teacher training program, during RTTT which ended in 2016, to align efforts of both programs in those districts participating in both programs.

In their work to complete these tasks, MMSI is responsible for a variety of activities, including maintaining partnerships with schools with high percentages of minority and low income students, encouraging recruitment of minority and low income students into AP science and mathematics classes, educating stakeholders about the benefits of the AP program and STEM careers, assisting districts in eliminating barriers to STEM AP courses faced by typically underserved students, conducting extracurricular study sessions and test preparation sessions, providing exam fee subsidies to low income students, supporting professional development for STEM AP teachers, supporting teacher attendance at the College Board’s AP summer institute, encouraging curriculum alignment, providing guidance and funds for equipment in new or expanded STEM AP courses, monitoring teacher effectiveness and fidelity to the implementation of the program, and assisting vertical teams of grade 6–10 pre-AP trained science and mathematics teachers and STEM AP teachers.

ESE contracted the University of Massachusetts Donahue Institute (UMDI) to conduct the multiyear evaluation of the Advancing STEM AP program. Year 1, Year 2, and Year 3 interim and final evaluation reports were submitted previously. This report addresses the teacher survey results for Year 4 of the project.

Analysis of the data collected on the teacher survey is intended to yield findings regarding:

* Professional development and support offered to new and existing teachers of science, mathematics, and English at schools that participate in the Advancing STEM AP program, as well as teacher’s perceptions of any increases in their own knowledge and pedagogical skills
* Strategies used to increase science and mathematics AP course availability, and to identify and encourage participation of typically underserved students in these courses, as well as to participate in Advanced Placement exams

# Methodology

**Evaluation Design**

This report, as part of the fourth year of the evaluation study, focuses on information gathered through a teacher survey to inform the following **research questions** about the core activities of the program:

* What support has been provided for district efforts to offer additional AP courses?
* What professional development has been offered to current and newly recruited AP teachers?
* Have STEM teachers who received professional development increased their knowledge and pedagogical skills relevant to increasing student success in AP courses and exams?
* What strategies have been used to increase AP course availability, identify underrepresented students, and encourage them to take AP courses?

These research questions are based on the logic model depicted in Figure 1.

Figure 1. Advancing STEM AP Logic Model

Support district efforts to **offer** **additional** Advanced Placementcourses

**Provide PD** to current and newly recruited Advanced Placement teachers

**Identify and encourage** underrepresented studentsfor

Advanced Placement courses

**Increased underrepresented student participation in AP courses and AP exams**

**Improved teacher knowledge and skills**

**Increased AP course availability**

**More low income and minority students successfully completing AP mathematics, science, and ELA coursework and scoring 3 or higher on**

**AP exams**

**More students interested in pursuing STEM-related career or college major**

*Core Activities*

*Intermediate Outcomes*

*Overall Outcomes*

**Instrument**

The teacher survey provides data regarding professional development and support received from Mass Insight; strategies used to increase AP course availability, encourage traditionally underrepresented students to take AP courses, support the success of these students in coursework and exams, and gauge teachers’ improvements in knowledge and pedagogical skills relevant to the program through self-reporting. The survey was developed by UMDI researchers with iterative feedback from relevant ESE and Mass Insight personnel. The teacher survey is shown in Appendix A.

**Data Collection**

Data were collected through Qualtrics, an online survey platform. A link to the online teacher survey was sent to teachers who were included on an Advancing STEM AP participant roster provided by Mass Insight. The survey link was sent June 10, 2016 with 3 reminders sent June 17, 23, and 30.

**Data Analysis**

Data collected from the teacher survey were entered into a database in a statistical software package (SPSS). The data were analyzed using descriptive statistics. Chi square analyses were used to determine whether there were statistically significant response differences between:

* AP STEM (n=183) and AP English teachers (n=116)
* Teachers in schools actively participating in the AP STEM program (core intervention schools n=140) and teachers in schools that have exited the program and are continuing engagement with MMSI through the sustaining partnership program (sustainment status schools n=159)
* Teachers in urban schools, specifically Boston, Fall River, Holyoke, New Bedford, Springfield, and Worcester (n=75) and teachers in non-urban schools (n=224)

Results

This section provides background information on the survey respondents, and summarizes their responses on the following topics:

* Professional development opportunities and supports from Mass Insight
* The effectiveness of those supports
* Perceived improvement in teachers’ own professional practices
* Support that teachers and their schools offer to underrepresented students to encourage participation and success in AP courses and AP exams
* The extent to which staff in their school support the inclusion of underrepresented students in AP classes.

Most tables show results for all responding teachers. Chi square analyses were used to determine whether differences in responses between key subgroups and those are noted in the text associated with each table. Subgroups examined were: STEM vs. English teachers, teachers from urban schools vs. teachers from non-urban schools, and teachers in core intervention schools vs. schools in sustainment status. All open-ended survey responses are shown in Appendix B.

**Respondent Profile**

Half of the 664 teachers who were sent the survey responded. Once responses with only demographic data were removed there were 299 respondents (representing a 45 percent response rate) including 183 teachers (61 percent) who teach AP STEM courses and 116 teachers (39 percent) who teach AP English courses. These proportions represented by the survey respondents are consistent with the STEM/English teacher breakdown of the total population of the program (as represented by all individuals to whom the teacher survey was distributed).

Table 1 contains the percentages of respondents who taught each AP subject area in SY16 and within the past five years. For the most part, the proportion of respondents who indicated that they taught a particular course in SY16 was the same or similar to the percentage who said that they taught the same AP course within the last five years.

|  |  |  |
| --- | --- | --- |
| Table 1: Type of AP Courses Taught by Respondents  **(N=299)** | | |
| **AP Course** | **Percentage of AP Teacher Respondents (English and STEM)** | |
| **Taught Course in SY16** | **Taught Course Within Past 5 Years** |
| Biology | 10% | 10% |
| Calculus | 16% | 14% |
| Chemistry | 9% | 8% |
| Computer Science | 4% | 3% |
| Environmental Science | 9% | 7% |
| English | 38% | 33% |
| Physics | 8% | 6% |
| Statistics | 9% | 8% |

The majority of AP STEM and AP English respondents indicated that they were relatively new to teaching AP courses. Responses regarding respondents’ length of experience teaching AP courses are shown in Table 2.

|  |  |  |  |
| --- | --- | --- | --- |
| Table 2: Years Teaching AP STEM or AP English Courses | | | |
| **Years** | **Percentage of Respondents** | | |
| **AP STEM Teachers**  **(N=183)** | **AP English Teachers**  **(N=116)** | **All**  **Teachers**  **(N=299)** |
| 0 years | 2% | 0% | 1% |
| 1 – 5 years | 61% | 60% | 61% |
| 6 – 10 years | 22% | 16% | 20% |
| 11 – 15 years | 10% | 11% | 10% |
| 16 – 20 years | 3% | 4% | 4% |
| 21+ years | 1% | 5% | 3% |
| No Response | 2% | 3% | 2% |

### Professional Development Opportunities and Supports

According to respondents, Mass Insight–provided professional development and supports were made widely available (Table 3).

| Table 3: Professional Development Opportunities and Supports Offered to Teachers | | | |
| --- | --- | --- | --- |
| **Professional Development Opportunity or Support** | **AP STEM Teachers**  **(N=183)** | **AP English Teachers**  **(N=116)** | **All Teachers (N=299)** |
| Mass Insight Workshop (2 days) | 97% | 97% | 97% |
| Mass Insight AP Summer Institute (5 days) | 90% | 94% | 92% |
| Information, materials, and resources provided by my school’s AP lead teachers | 64% | 70% | 67% |
| Logistical support to maximize the use of technology, materials, and resources | 58% | 57% | 58% |
| Workshops or assistance on strategies to effectively encourage participation of students with varying levels of background content knowledge and study skills in an AP class \* | 45% | 59% | 50% |
| Workshops or assistance to prepare you to maintain high academic standards for underrepresented students (e.g., low income, minority, and female students) who may come to your AP class with varying levels of background content knowledge and study skills \*\* | 36% | 52% | 42% |
| Mass Insight–sponsored Pre-AP Training Institute (4 days) | 35% | 41% | 37% |
| Workshops or assistance on strategies to effectively accommodate the learning levels of underrepresented students | 32% | 41% | 35% |
| *A Chi Square analysis was used to test the difference between the responses of AP STEM and AP English respondents.*  *\* The difference between AP STEM and AP English teachers’ responses was statistically significant (p<.05)*  *\*\*The difference between AP STEM and AP English teachers’ responses was statistically significant (p<.01)* | | | |

The most commonly offered opportunities, as indicated by respondents, were the Two-Day Workshop and the AP Summer Institute. Two-thirds reported that they were offered information, materials, and resources by their schools’ lead teachers and more than half reported that they were offered general logistical assistance in helping them to maximize their use of technology, materials, and other resources. The least frequently offered supports, according to respondents, were the Mass Insight-sponsored pre-AP training institute and workshops or assistance to prepare teachers to maintain high academic standards and to effectively accommodate the learning levels for underrepresented students.

Chi-square analyses revealed the following significant differences in reported professional development and support:

* More AP English teachers were offered workshops or assistance on strategies to effectively encourage participation (59 percent vs. 45 percent, p<.05) and to prepare them to maintain high academic standards (52 percent vs. 36 percent, p<.01)
* More teachers from urban districts reported that they were offered a Mass Insight-sponsored Pre-AP training institute (48 percent vs. 34 percent, p<.05).
* More teachers in core status schools reported that they were offered the MMSI Summer Institute (98 percent vs. 87 percent, p<.01) and logistical support (64 percent vs. 52 percent, p<.05)

**Effectiveness of Professional Development Opportunities and Supports**

For the types of opportunities and supports listed in Table 4 most respondents reported that the summer institute and the two-day workshops were very effective. Approximately 80 percent of respondents reported that the Summer Institute was either somewhat or very effective. The Two-Day Workshop was also rated favorably by respondents; nearly 90 percent indicated it was at least somewhat effective, including 70 percent who reported that it was very effective. Respondents were generally positive about the information, resources, and materials provided through their lead teachers. A considerable proportion of respondents (70 percent) said this type of support was at least somewhat effective. Also, the majority of respondents (64 percent) reported that the logistical support they received in order to maximize the use or resources, materials, and technology was very or somewhat effective. There were no significant differences in responses between AP STEM and AP English teachers.

| Table 4: Effectiveness of Professional Development Opportunities and Supports | | | | | |
| --- | --- | --- | --- | --- | --- |
| **Professional Development Opportunity or Support** | **N** | **Very Effective** | **Somewhat Effective** | **Not At all Effective** | **Not Applicable** |
| Mass Insight AP Summer Institute | 269 | 68% | 11% | 2% | 20% |
| Mass Insight Two-Day Workshop | 272 | 69% | 19% | 3% | 9% |
| Mass Insight–sponsored Pre-AP Training Institute (4 days) | 205 | 16% | 7% | 2% | 75% |
| Information, materials, and resources provided by my school’s Advancing STEM AP lead teachers | 235 | 44% | 26% | 6% | 24% |
| Logistical support to maximize the use of technology, materials, and resources | 227 | 30% | 34% | 6% | 30% |
| Workshops or assistance on strategies to effectively accommodate the learning levels of underrepresented students | 213 | 21% | 20% | 8% | 52% |
| Workshops or assistance on strategies to effectively encourage participation of students with varying levels of background content knowledge and study skills in an AP class | 227 | 30% | 26% | 5% | 39% |
| Workshops or assistance to prepare you to maintain high academic standards for underrepresented students (e.g., low income, minority, and female students) who may come to your AP class with varying levels of background content knowledge and study skills | 219 | 28% | 22% | 5% | 46% |

Participants were asked the extent to which workshops or assistance were effective in providing strategies to (1) effectively accommodate the learning levels of underrepresented students, (2) to effectively encourage participation of students with varying levels of background content knowledge and study skills in an AP class, and (3) to maintain high academic standards for underrepresented students (e.g., low income, minority, and female students) who may come to an AP class with varying levels of background content knowledge and study skills. One-third to one-half of respondents reported that workshops or assistance for working with underrepresented students were “not applicable” because these were not offered or they had not participated in the supports. Of those who did respond, most reported that the assistance was at least somewhat effective.

Chi-square analyses revealed the following significant differences in reported PD and support:

* More teachers in schools with core status found the MMSI Summer institute to be effective than teachers in schools with sustainment status (85 percent vs. 73 percent, p<.05)
* Fewer teachers from urban schools found the two-day workshop to be effective (78 percent vs. 91 percent, p<.05)
* Nearly twice as many teachers in sustainment schools noted that logistical support was not applicable – that such services were not offered or they did not participate. (39 percent vs. 21 percent, p<.05)
* Of those receiving logistical support, more of those in sustainment schools found it be very effective (47 percent vs. 39 percent, p<.05)

There were no statistically significant differences between STEM and English teachers.

**Content Director–Provided Supports**

Teachers were asked which supports they received from Mass Insight *content directors*. As shown in Table 5, at least three-quarters of teachers reported receiving support on content-specific professional development focused on AP instruction and providing lesson plans or classroom activities.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Table 5: Supports from Mass Insight Content Directors Offered to Teachers | | |  | |
| **Supports from Mass Insight Content Directors** | **AP STEM Teachers** | **AP English Teachers** | | **All Teachers** |
| Content-specific professional development focused on AP instruction | 77% | 80% | | 78% |
| Providing lesson plans or classroom activities | 76% | 81% | | 78% |
| Support in planning and logistics for the student study sessions | 67% | 71% | | 68% |
| Assisting with other test preparation activities | 69% | 62% | | 66% |
| Modeling by teaching an AP lesson while I observed | 66% | 59% | | 64% |
| Observing my classroom and providing feedback and instructional guidance | 62% | 60% | | 62% |
| Assisting with student assessment \*\* | 66% | 48% | | 59% |
| Strategizing or problem-solving on other issues (e.g., time constraints, scheduling, other) | 51% | 42% | | 47% |
| Strategizing or problem-solving on ways to increase student enrollment in AP courses | 40% | 38% | | 39% |
| Strategizing or problem-solving on ways to increase student motivation | 43% | 29% | | 37% |
| *\*\*A Chi Square analysis was used to test the difference between the responses of AP STEM and AP English respondents. The difference between AP STEM and AP English teachers’ responses was statistically significant (p<.01) for the support indicated*  *Also note that N’s varied for each item ranging from 164 to 170 for STEM Teachers, 99 to 105 for English Teachers, and 265 to 275 for All Teachers* | | | | |

Approximately two-thirds of respondents reported receiving support in planning and logistics for study sessions, assistance with other test preparation activities, modeling by teaching an AP lesson while the teacher observed, observing the classroom and providing feedback, and assisting with student assessment.

Fewer than half reported receiving assistance through strategizing or problem-solving on issues such as time constraints and schedule, ways to increase student enrollment in AP courses, and ways to increase student motivation. Many teachers specified other supports that were offered (see Appendix B). Some of these responses are examples of the categories listed in Table 5, such as receiving exam questions, administering mock exams, and examples of how specific content directors helped them. Some did not know the term “content director” and some noted they had little contact with Mass Insight outside the formal professional development activities.

Chi-square analyses revealed the following significant differences:

* More STEM teachers reported receiving assistance with student assessment (66 percent vs. 48 percent, p<.01)
* More urban teachers reported receiving support related to:
  + Strategizing or problem-solving on ways to increase student motivation (52 percent vs. 33 percent, p<.01)
  + Issues such as time constraints and scheduling (62 percent vs. 42 percent, 9<.01)

There were no statistically significant differences between teachers in core status or sustainment status schools on these items.

**Effectiveness of Content Director–Provided Support**

Considered most effective by teachers were content specific professional development focused on AP instruction, and modeling by teaching an AP lesson. Also considered very effective were providing lesson plans or classroom activities, assisting with student assessment, assisting with other test preparation activities, and observing classrooms to provide feedback and instructional guidance. The least effective supports were strategizing and or problem-solving on ways to increase student enrollment and motivation. All data on effectiveness of content director-provided supports are shown in Table 6.

| Table 6: Effectiveness Mass Insight Content Director-Provided Supports | | | | |
| --- | --- | --- | --- | --- |
| **Supports from Mass Insight Content Directors** | **N** | **Very Effective** | **Somewhat Effective** | **Not At all Effective** |
| Content-specific professional development focused on AP instruction | 184 | 76% | 21% | 3% |
| Providing lesson plans or classroom activities | 180 | 66% | 31% | 3% |
| Support in planning and logistics for the student study sessions | 162 | 55% | 41% | 4% |
| Assisting with other test preparation activities | 148 | 64% | 32% | 3% |
| Modeling by teaching an AP lesson while I observed | 193 | 76% | 19% | 6% |
| Observing my classroom and providing feedback and instructional guidance | 206 | 63% | 29% | 8% |
| Assisting with student assessment | 132 | 65% | 29% | 6% |
| Strategizing or problem-solving on other issues (e.g., time constraints, scheduling, other) | 105 | 52% | 41% | 7% |
| Strategizing or problem-solving on ways to increase student enrollment in AP courses | 89 | 46% | 45% | 9% |
| Strategizing or problem-solving on ways to increase student motivation | 90 | 47% | 46% | 8% |

There were no statistically significant differences on these items.

**Improvement in Teachers’ Professional Capacities**

Table 7 shows the extent to which teachers feel they have improved in their professional capacities due to their participation in the Advancing STEM AP program. About half of the teachers believe they improved substantially in content knowledge in the AP discipline, and 40 percent believed they improved substantially in pedagogical skills in the AP discipline. It is notable that more than one-third of the teachers reported little or no improvement in their ability to support the success of traditionally underrepresented students and more than one-quarter reported little or no improvement in their ability to maintain high expectations of all students.

| Table 7: Improvement in Teachers’ Professional Capacities Due to Their Participation in the Advancing STEM AP Program (N=287) | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | **Substantially** | **Moderately** | **Minimally** | **Not at All** | **Not Applicable** |
| Improvement in content knowledge in your AP discipline | 51% | 32% | 12% | 4% | 1% |
| Improvement in pedagogical skills in your AP discipline | 38% | 41% | 15% | 5% | 1% |
| Improvement in ability to support the success of traditionally underrepresented students | 28% | 31% | 23% | 13% | 6% |
| Improvement in ability to maintain high expectations for all students | 36% | 33% | 18% | 10% | 3% |

Significantly more English teachers reported improvements in pedagogical skills (50 percent vs. 31 percent, p<.01). There were no statistically significant differences between teachers in urban schools and non-urban schools or between teachers in core status and sustainment status schools on these items.

**Strategies to Support Underrepresented Students in AP**

Table 8 shows the extent to which a variety of strategies have been used to encourage *enrollment* of traditionally underrepresented students in AP STEM courses, and whether each strategy increased as a result of participation in the Advancing STEM AP program.

* More than 80 percent of teachers reported that their schools provide exam waivers for students with demonstrated financial need and help students complete and submit any forms required to register for AP exams. More than half of those teachers indicated that their schools’ use of those strategies increased as a result of participation in the Advancing STEM program.
* More than 70 percent of teachers reported that their schools provide outreach to students to promote increased participation in AP courses, increase the number of AP science and mathematics courses offered, and adjust AP and pre-AP course registration policies (e.g., eliminating requirements such as minimum GPA or taking honors-level prerequisite courses). About two-thirds of those teachers indicated that their schools’ use of those strategies increased as a result of participation in Advancing STEM.
* About half of the teachers reported that their schools help students complete and submit forms for fee waivers, increased the number of sections of AP science and mathematics courses offered, and hold AP-specific events such as AP Fairs and AP Days. Of those teachers about half indicated that their schools’ use of those strategies increased as a result of Advancing STEM participation.
* Fewer than half of the teachers reported that their schools provide outreach to families to promote increased participation in AP courses, notify students that they will receive awards for qualifying AP exam scores, or use the College Board’s “AP Potential” program to identify students for enrollment in AP courses. Of those teachers, between 30% and 40% indicated that their schools’ use of those strategies increased as a result of Advancing STEM participation.

Chi-square analyses revealed the following significant differences:

* More English teachers reported that their schools:
  + notify students that they will receive awards for qualifying AP exam scores (43 percent vs. 32 percent, p<.05) and that the use of that strategy increased as a result of the school’s Advancing STEM participation (49 percent vs. 34 percent, p<.05).
  + increased adjustment of AP and pre-AP course registration policies (74 percent vs. 55 percent, p<.01) as result of Advancing STEM participation
  + increased the amount of help provided to complete forms required to register for AP exams (65 percent vs. 49 percent, p<.05) as a result of Advancing STEM participation.
* Teachers in urban schools reported more use of the following strategies:
  + providing AP exam fee waivers (96 percent vs. 78 percent, p<.01) and that use of that strategy increased as a result of Advancing STEM participation (71 percent vs. 52 percent, p<.01)
  + helping students complete and submit forms for AP exam registration (96 percent vs. 78 percent, p<.01) and that use of that strategy increased as a result of Advancing STEM participation (57 percent vs. 44 percent, p<.01)
  + providing outreach to students (87 percent vs 65 percent, p<.01)
  + helping students complete and submit forms for fee waivers (79 percent vs. 51 percent, p<.01)
  + holding AP-specific events such as AP Fairs or AP Days (74 percent vs. 44 percent, p<.01)
  + providing outreach to families (54 percent vs. 35 percent, p<.05)
  + using the “AP Potential” program to identify students for enrollment (45 percent vs. 31 percent, p<.05)
  + although there was not a significant difference in the proportion of teachers reporting that their schools notify student that they will receive awards for qualifying AP exam scores, more teachers from urban schools reported that use of the strategy increased as a result of Advancing STEM participation (56 percent vs. 34 percent, p<.05)
* More teachers from sustainment status schools report:
  + helping students complete and submit forms for AP exam registration (89 percent vs. 74 percent, p<.01)
  + helping students complete and submit forms for fee waivers (66 percent vs. 50 percent, p<.05)
  + using the “AP Potential” program to identify students for enrollment (41 percent vs. 27 percent p<.05)
  + there were no significant differences between teachers from core intervention and sustainment schools related to whether strategies increased as a result of their participation.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Table 8: Schools’ Use of Strategies to Encourage Enrollment of Traditionally Underrepresented Students in AP STEM Courses  **N = 178** | | | | | | |
| **Strategy** | **Our school uses this strategy** | | | **Our school’s use of this strategy has increased as a result of our participation in the Advancing STEM AP Program^** | | | |
| **Agree** | **Disagree** | **Don’t Know** | **Agree** | **Disagree** | **Don’t Know** | |
| Providing AP exam fee waivers for students with demonstrated financial need | 82% | 6% | 12% | 57% | 11% | 32% | |
| Helping students complete forms required to register for AP exams | 82% | 5% | 13% | 55% | 15% | 30% | |
| Providing outreach to students to promote increased participation in AP courses | 71% | 16% | 13% | 68% | 13% | 19% | |
| Increasing the number of AP science and mathematics courses offered | 71% | 14% | 15% | 68% | 9% | 23% | |
| Adjusting AP and pre-AP course registration policies (e.g., eliminating requirements such as min. GPA or taking honors-level prerequisite courses) | 71% | 12% | 16% | 62% | 13% | 25% | |
| Helping students complete and submit any forms required for fee waivers | 58% | 10% | 32% | 48% | 11% | 42% | |
| Increasing the number of sections of AP science and mathematics courses offered | 56% | 23% | 21% | 57% | 16% | 28% | |
| Holding AP-specific events such as AP Fairs or AP Days | 51% | 42% | 7% | 49% | 25% | 26% | |
| Providing outreach to families to promote increased participation in AP courses | 40% | 34% | 26% | 40% | 23% | 38% | |
| Notifying students that they will receive awards for qualifying AP exam scores | 37% | 44% | 19% | 40% | 26% | 35% | |
| Using the College Board’s “AP Potential” program to identify students for enrollment in AP courses | 34% | 26% | 39% | 30% | 22% | 48% | |
| *Note: For some strategies, the total of the percentages does not equal 100 percent. Some teachers did not respond to these questions.*  *^Percentages presented in these columns are calculated using the number of respondents who agreed that their school used the given strategy.* | | | | | | |

As shown in Table 9, to support the *success* of underrepresented students in AP STEM courses and exams most schools offer study sessions prescribed by the Advancing STEM AP program (86 percent) and provide transportation to study sessions if needed (69 percent). Teachers report relatively few schools are collaborating with curriculum leaders and feeder middle schools to address student preparation, encouraging students to take the AP exam again if they did not receive a score of three or higher, or providing support for students retaking an AP exam.

Chi-square analyses revealed the following significant differences:

* More English teachers reported that their school provided additional study support for students who retake the AP exam (23 percent vs. 10 percent, p<.01)
* Fewer teachers from urban schools reported that their school provided transportation when it was needed (45 percent vs. 77 percent, p<.01)
* More teachers from sustainment schools reported that their school provided additional study support to students retaking the AP exam (20 percent vs. 9 percent, p<.05)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Table 9. Schools’ Use of Strategies to Support the Success of Traditionally Underrepresented Students in AP STEM Courses and Exams  **N = 182** | | | | | | |
| **Strategy** | **Our school uses this strategy** | | | **Our school’s use of this strategy has increased as a result of our participation in the Advancing STEM AP Program.^** | | |
| **Agree** | **Disagree** | **Don’t Know/ No Response** | **Agree** | **Disagree** | **Not Applicable/ No Response** |
| Offering the study sessions prescribed by the Advancing STEM AP Program | 86% | 8% | 6% | 80% | 7% | 13% |
| Providing transportation to study sessions, if transportation is not available | 69% | 21% | 9% | 64% | 11% | 25% |
| Collaborating with curriculum leaders and feeder middle schools to address student preparation for AP courses in grades 6 to 8 | 18% | 55% | 27% | 18% | 26% | 56% |
| Encouraging students to take the AP exam again if they don’t receive a score of ‘3’ or higher | 25% | 51% | 24% | 23% | 22% | 55% |
| Providing additional study support to students who are retaking an AP exam | 15% | 53% | 32% | 15% | 24% | 61% |
| *^Percentages presented in these columns are calculated using the number of respondents who agreed that their school used the given strategy.* | | | | | | |

Table 10 shows the extent to which individual teachers report using identified strategies to support the success of traditionally underrepresented students in AP STEM courses and exams and whether the use of the strategy increased as a result of their participation in the Advancing STEM AP program.

* Nearly all encourage students to attend study sessions (97 percent) and teach the AP curriculum as outlined in the College Board guidelines (95 percent). Most of those teachers (89 percent and 69 percent, respectively) report that their use of those strategies increased as a result of their participation in Advancing STEM. A larger percentage of STEM teachers report teaching the AP curriculum according to College Board guidelines (98 percent vs. 90 percent, p<.01).
* Strong majorities also attend and support the prescribed study sessions (88 percent) and provide out-of-class tutoring or review sessions to AP students (87 percent). More than half of those teachers (86 percent and 56 percent, respectively) report that their use of those strategies increased as a result of their participation in Advancing STEM AP. More STEM teachers report that they provide out-of-class tutoring or review sessions (90 percent vs. 81 percent, p<.05)
* Only about one-third encourage students to take the AP exam again if they don’t receive a score of ‘3’ or higher and about one-quarter provide additional study support to students retaking an AP exam. For both strategies only about one-quarter reported that their use of those strategies increased as a result of their participation in Advancing STEM AP. Use of these strategies was more commonly reported by English teachers (encouraging retakes was 45 percent vs. 26 percent, p<.01 and additional study support was 36 percent vs 21 percent, p<.01)
* There were no statistically significant differences between teachers from urban and non-urban schools or between teachers from core intervention schools and sustainment schools related their personal use of strategies to support the success of underrepresented students in AP courses and exams.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Table 10: Teachers’ Use of Strategies to Support the Success of Traditionally Underrepresented Students in AP STEM Courses and Exams | | | | | |
| **Strategy** | **I use this strategy** | | **My use of this strategy has increased as a result of my participation in the Advancing STEM AP Program.^** | | |
| **Agree** | **Disagree** | **Agree** | **Disagree** | **Not Applicable/**  **No Response** |
| Encouraging students to attend the study sessions | 97% | 3% | 89% | 7% | 4% |
| Teaching the AP curriculum as outlined in the College Board guidelines | 95% | 5% | 69% | 26% | 6% |
| Attending and supporting the study sessions prescribed by the Advancing STEM AP program | 88% | 12% | 86% | 8% | 6% |
| Providing out-of-class tutoring or review sessions to AP students | 87% | 14% | 56% | 35% | 9% |
| Encouraging students to take the AP exam again if they don’t receive a score of ‘3’ or higher | 34% | 67% | 27% | 34% | 39% |
| Providing additional study support to students who are retaking an AP exam | 27% | 73% | 23% | 30% | 47% |
| *^Percentages presented in these columns are calculated using the number of respondents who agreed that their school used the given strategy.*  *Also note that N’s varied for each item ranging from 251 to 263 for “I use this strategy” and from 194 to 236 for the impact of Advancing STEM participation.* | | | | | |

**Classroom Practices**

Teachers were asked how often they use a variety of practices in their classroom. As shown in Table 11, more than two-thirds report using the following practices almost every day: developing students’ ability to communicate aspects of the discipline verbally and in writing, scaffolding instruction to support student understanding, and developing students’ ability to make connections among topics. More than half promote student interaction and discussion using inquiry-based techniques, have students collaborate in small groups to enhance thinking and reasoning skills, and use the results of classroom assessments to inform instructional decisions. Fewer use students’ interests and background experiences to make connections to content, develop students’ ability to make connections among topics, or model planning, goal setting, and strategy development.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Table 11: How often do you do each of the following in your AP class? | | | | | |
| **Dimension** | **N** | **Almost Every Day** | **Once or Twice a Week** | **Once or Twice a Month** | **Never or Hardly Ever** |
| Develop students’ ability to communicate aspects of the discipline verbally and in writing | 268 | 70% | 25% | 5% | 0% |
| Scaffold instruction to support student understanding | 267 | 70% | 22% | 7% | 1% |
| Develop students’ ability to make connections among topics in your discipline | 267 | 67% | 27% | 6% | 0% |
| Promote student interaction and discussion using inquiry-based techniques | 267 | 61% | 31% | 7% | 0% |
| Have students collaborate in small groups to enhance thinking and reasoning skills | 269 | 58% | 34% | 7% | 0% |
| Use the results of classroom assessments to inform instructional decisions | 269 | 51% | 34% | 15% | 1% |
| Use students’ interest and background experiences to make connections to your content | 267 | 48% | 36% | 13% | 2% |
| Develop students’ ability to make connections among topics in your discipline and other disciplines | 267 | 36% | 40% | 22% | 2% |
| Model planning, goal setting, and strategy development | 268 | 35% | 39% | 22% | 4% |

Chi-square analyses revealed that significantly more English teachers reported that they us the following practices almost every day:

* Developing students’ ability to communicate aspects of the discipline verbally and in writing (91 percent vs 56 percent, p<.01)
* Scaffolding instruction to support student understanding (81 percent vs 64 percent, p<.05)
* Developing students’ ability to make connections among topics in their discipline (80 percent vs 58 percent, p<.01)
* Promoting student interaction and discussion using inquiry-based techniques (79 percent vs. 50 percent, p<.01)
* Using student interest and background experiences to make connections to content (67 percent vs. 36 percent, p<.01)
* Developing students’ abilities to make connections among topics in their discipline and other disciplines (45 percent vs 31 percent, p<.05)

There were no statistically significant differences between teachers from urban and non-urban schools or between teachers from core intervention schools and sustainment schools related to their use of instructional practices in their classrooms.

**Support for Inclusion of Underrepresented Students**

About two-thirds of the teachers report substantial support for the inclusion of underrepresented students in AP courses and exams from principals, vice-principals/academic deans, AP coordinators, and content area chairs. In addition, more than half of the teachers report substantial support from guidance counselors. Only about one-third indicate such levels of support from other teachers, SPED/ELL support staff, and parents. Some teachers also noted support from the METCO coordinator, psychologists, and students who have taken a course.

Teachers in urban schools reported significantly higher levels of support from other teachers (55 percent vs. 30 percent, p<.05) and SPED/ELL support staff (49 percent vs. 25 percent, p<.05). Teachers in sustainment status schools report significantly higher levels of support from SPED/ELL support staff (43 percent vs. 20 percent, p<.01) and parents (37 percent vs. 22 percent, p<.05). There were no statistically significant differences in responses between STEM and English teachers.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Table 12: To what extent do people in your school support the inclusion of underrepresented students in AP classes? | | | | | |
| **Role** | **N** | **Substantially** | **Moderately** | **Minimally** | **Not at All** |
| Principal | 249 | 67% | 20% | 9% | 4% |
| Vice-Principal or Academic Dean | 229 | 64% | 19% | 11% | 6% |
| AP Coordinators | 224 | 68% | 21% | 7% | 4% |
| Content-area Chairs | 233 | 67% | 23% | 8% | 3% |
| Other Teachers | 236 | 36% | 47% | 12% | 5% |
| Guidance Counselors | 257 | 55% | 28% | 12% | 5% |
| SPED/ELL Support Staff | 209 | 32% | 30% | 27% | 11% |
| Parents | 219 | 30% | 37% | 27% | 6% |

**Teacher Perceptions of Underrepresented Students’ Preparation**

Nearly all teacher respondents (94 percent) agree or strongly agree that students benefit from their AP course even if they don’t receive a qualifying score on the AP exam. More than half agree that underrepresented students have less developed study skills and less background knowledge in the content area. While 57 percent agree that they are able to adequately support the learning needs of the underrepresented students in their AP classes, 58 percent indicated that they would like more assistance to better support those students.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Table 13: To what extent do you agree or disagree with the following statements? | | | | | | |
| **Statement** | **N** | **Strongly Agree** | **Agree** | **Not Sure** | **Disagree** | **Strongly Disagree** |
| Underrepresented students in my AP course often have less background knowledge in the content area than more traditional AP students \*\* | 267 | 16% | 42% | 21% | 18% | 2% |
| Underrepresented students in my AP course often have less developed study skills than more traditional AP students \* | 266 | 16% | 46% | 18% | 17% | 4% |
| I am able to adequately support the learning needs of underrepresented students in my AP course | 266 | 8% | 49% | 29% | 13% | 2% |
| I would like more assistance to better support underrepresented students in my AP course | 264 | 16% | 42% | 24% | 16% | 2% |
| Students benefit from my AP course even if they do not receive a qualifying score of 3 or above on the AP exam | 266 | 60% | 34% | 5% | 0% | 1% |

Chi-square analyses revealed the following statistically significant differences:

* More English teachers agree that underrepresented students often have less developed study skills (71 percent vs. 56 percent, p<.05) and less background in the content area (71 percent vs. 56 percent, p<.01).
* More teachers from urban schools would like additional assistance to better support underrepresented students in their AP courses (72 percent vs. 53 percent, p<.01)

There were no statistically significant differences between teachers from core intervention schools and sustainment schools on these items.

Teachers who noted they would like more assistance to better support underrepresented students specified some desired activities. A representative sampling is listed here. A complete list is found in Appendix B.

* A primer on specific curriculum, strategies, and best practices that work in a specific content area
* Ability to observe other teachers and their classes
* Additional professional development and collaboration time with colleagues
* Assistance in convincing the school to implement a Pre-AP program and help implementing it
* Computer training on setting up an online class
* Cultural proficiency training
* ELL strategies
* How to encourage more females to take computer science
* Learning styles and writing strategies
* More differentiation strategies
* Strategies to attract non-traditional students
* Strategies to develop study skills

Almost all teachers believe that students benefit from their AP course even if they do not receive a qualifying score of three or above on the AP exam. They provide a variety of reasons why students benefit including the academic skill set, becoming aware of what a college course is likely to require, being around other students who take scholarship seriously, developing critical thinking skills and confidence, and developing study skills.

**College Board Curriculum**

Most STEM teachers (82 percent) reported completing “all or nearly all” of the College Board recommended curriculum in their AP subject, while less than half of the English teachers (49 percent) reported the same (p<.01)

There were no statistically significant differences between teachers from urban and non-urban schools or between teachers from core intervention schools and sustainment schools related to the amount of the College Board recommended curriculum in their AP subject.

|  |  |  |  |
| --- | --- | --- | --- |
| Table 14. Approximate amount of the College Board recommended curriculum in AP subject completed | | | |
|  | **AP STEM Teachers**  **(N=162)** | **AP English Teachers**  **(N=102)** | **All**  **Teachers (N=264)** |
| One-half or less | 0% | 3% | 1% |
| More than one-half but less than two-thirds | 2% | 14% | 6% |
| About three-quarters | 16% | 34% | 23% |
| All or nearly all \*\* | 82% | 49% | 69% |

# Conclusion

This report has provided results and summaries of responses to the 2016 Teacher Survey. The survey gathered teachers’ opinions regarding a range of areas including:

* professional development opportunities and supports from Mass Insight
* the effectiveness of those supports
* perceived improvement in teachers’ professional practices
* support that they and their school offer to underrepresented students to encourage participation and success in AP courses and AP exams
* the extent to which staff in their school support the inclusion of underrepresented students in AP classes
* self-reported teacher practices and curriculum in relation to AP courses.

Most teachers reported that Mass Insight-provided professional development and supports were widely available and attended. The October two-day workshops and five-day Summer Institute were most commonly acknowledged, followed by information, materials, and resources, and logistical support to maximize the use of technology, materials, and resources. The least frequently offered supports, according to respondents, were the Mass Insight-sponsored pre-AP training institute and workshops or assistance to prepare teachers to maintain high academic standards and to effectively accommodate the learning levels for underrepresented students. Most teachers were offered positive responses about the effectiveness of the assistance they received.

Most respondents reported receiving a variety of supports from the Mass Insight content directors. The supports considered most effective by teachers were content specific professional development focused on AP instruction, and modeling by teaching an AP lesson. Also considered very effective were providing lesson plans or classroom activities, assisting with student assessment, assisting with other test preparation activities, and observing classrooms to provide feedback and instructional guidance. The least effective supports were strategizing and or problem-solving on ways to increase student enrollment and motivation.

About half of the teachers believe they improved substantially in content knowledge in the AP discipline, and 40 percent believed they improved substantially in pedagogical skills in the AP discipline. It is notable that more than one-third of the teachers reported little or no improvement in their ability to support the success of traditionally underrepresented students and more than one-quarter reported little or no improvement in their ability to maintain high expectations of all students.

Schools use a variety of strategies to encourage *enrollment* of traditionally underrepresented students. Some of the most commonly used strategies include providing outreach to students to promote participation in AP courses, providing exam fee waivers for students with demonstrated financial need, helping students complete forms for fee waivers and to register for AP exams, and adjusting AP and Pre-AP course registration policies, such as eliminating prerequisites or GPA requirements. Fewer than half of the teachers reported that their schools provide outreach to families to promote increased participation in AP courses, notify students that they will receive awards for qualifying AP exam scores, or use the College Board’s “AP Potential” program to identify students for enrollment in AP courses.

To support the *success* of underrepresented students in AP STEM courses and exams most schools offer study sessions prescribed by the Advancing STEM AP program and provide transportation to study sessions if needed. Teachers report relatively few schools are collaborating with curriculum leaders and feeder middle schools to address student preparation, encouraging students to take the AP exam again if they did not receive a score of three or higher, or providing support for students retaking an AP exam.

The majority of teachers agree that underrepresented students have less background knowledge in the content area and less developed study skills than more traditional AP students, but feel able to adequately support their learning needs. Many would, nevertheless, like more assistance to better support these students. Teachers already report using a variety of classroom practices that support the success of underrepresented students. More than two-thirds report using the following practices almost every day: developing students’ ability to communicate aspects of the discipline verbally and in writing, scaffolding instruction to support student understanding, and developing students’ ability to make connections among topics. More than half promote student interaction and discussion using inquiry-based techniques, have students collaborate in small groups to enhance thinking and reasoning skills, and use the results of classroom assessments to inform instructional decisions. In addition most teachers complete at least three-quarters of the College Board recommended curriculum and many complete all or nearly all of it. Fewer use students’ interests and background experiences to make connections to content, develop students’ ability to make connections among topics, or model planning, goal setting, and strategy development.

Nearly all teachers believe that students benefit from their AP course even if they do not receive a qualifying score of three or above on the AP exam. They provide a variety of reasons why students benefit including the academic skill set, becoming aware of what a college course is likely to require, being around other students who take scholarship seriously, developing critical thinking skills and confidence, and developing study skills.

Teachers report that they receive the most support for the inclusion of underrepresented students in AP courses and exams from principals, vice-principals/academic deans, AP coordinators, content areas chairs, and guidance counselors, with less support from other teachers and from SPED/ELL support staff.

⁂

Overall, teachers reflected positively on the professional development and support they and their schools have received from Mass Insight to encourage the participation and success of traditionally underrepresented students in AP courses and exams. In addition they report that they personally, and their schools, use a variety of strategies to support the success of all students. The data also highlighted a few areas in which the STEM AP Program could be improved including engaging more teachers in the pre-AP training institute and providing support related to student enrollment and motivation. The latter may include increasing utilization of the College Board’s AP Potential program and working with feeder middle schools to address student preparation issues.

# Appendix A

**2016 Teacher Survey**

Thank you for your participation in this survey. Its purpose is to deepen our understanding of what is happening in schools and districts that are conducting the Advanced Placement Training and Awards Program in collaboration with the Mass Insight Education. Your candid responses are important so that the information provided here can be used to make changes in the program that may better focus programming on traditionally underrepresented students.

Your responses are confidential and will help us improve the Mass Insight Education’s AP Program for teachers and students. Although we will be sharing our findings with interested parties, no information that could identify you personally will be included. Please contact Sue Leibowitz (sleibowitz@donahue.umassp.edu) with any questions related to this survey.

The name of your school district: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ [MAYBE NOT ASK]

The name of your school: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ [MAYBE NOT ASK]

What AP STEM courses have you taught during the 2015-16 school year? [Check all that apply]

* + Biology
  + Calculus
  + Chemistry
  + Computer Science
  + English
  + Environmental Science
  + Physics
  + Statistics

What AP STEM courses have you taught within the past five school years? [Check all that apply]

* + Biology
  + Calculus
  + Chemistry
  + Computer Science
  + English
  + Environmental Science
  + Physics
  + Statistics

For how many years have you taught AP STEM courses? \_\_\_\_\_\_\_\_\_\_\_\_\_

| Indicate which of the professional development opportunities and support below you have been offered. If you were offered the opportunity or support, also indicate how effective it has been in terms of helping you to increase student success in AP STEM courses and exams. | I was offered this opportunity/support | | Effectiveness of this support in helping me to increase student success in AP STEM courses and exams | | | |
| --- | --- | --- | --- | --- | --- | --- |
| Agree | Disagree | Not at All Effective | Somewhat Effective | Very Effective | Not Applicable | |
| MMSI AP Summer Institute (5 days) | O | O | O | O | O | O | |
| MMSI Workshop (2 days) | O | O | O | O | O | O | |
| MMSI-sponsored Pre-AP Training Institute (4 days) | O | O | O | O | O | O | |
| Information, materials, and resources provided by my school’s AP Program lead teacher(s) | O | O | O | O | O | O | |
| Logistical support to maximize the use of technology, materials and resources | O | O | O | O | O | O | |
| Workshops or assistance on strategies to effectively encourage participation of students with varying levels of background content knowledge and study skills in an AP class | O | O | O | O | O | O | |
| Workshops or assistance to prepare you to maintain high academic standards for underrepresented students (e.g., low-income, minority, and female students) who may come to your AP class with varying levels of background content knowledge and study skills | O | O | O | O | O | O | |
| Workshops or assistance on strategies to  effectively accommodate the learning levels of underrepresented students | O | O | O | O | O | O | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Indicate which of the following supports you were offered from Mass Insight Education's Content Directors. If you were offered the support, also indicate how effective the support was in helping you to increase student success in AP STEM courses and exams. | I was offered this opportunity/support | | Effectiveness of this support in helping me to increase student success in AP STEM courses and exams | | | |
| Agree | Disagree | Not at All Effective | Somewhat Effective | Very Effective | Not Applicable | |
| Observing my classroom and providing feedback and instructional guidance | O | O | O | O | O | O | |
| Modeling by teaching an AP lesson while I observed | O | O | O | O | O | O | |
| Content-specific professional development focused on AP instruction | O | O | O | O | O | O | |
| Support in planning and logistics for the student study sessions | O | O | O | O | O | O | |
| Assisting with other test preparation activities | O | O | O | O | O | O | |
| Assisting with student assessment | O | O | O | O | O | O | |
| Strategizing or problem-solving on ways to increase enrollment in AP courses | O | O | O | O | O | O | |
| Strategizing or problem-solving on ways to increase student motivation | O | O | O | O | O | O | |
| Strategizing or problem-solving on other issues (e.g., time constraints, scheduling, other) | O | O | O | O | O | O | |
| Providing lesson plans or classroom activities | O | O | O | O | O | O | |
| Other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | O | O | O | O | O | O | |

Please specify below what other supports you were offered from MMSI Content Directors relevant to increasing success in AP STEM courses and exams. [Open-ended]

Please indicate how participating in the MMSI AP Program improved your professional capacity in regard to the following dimensions:

|  | Substantially | Moderately | Minimally | Not At All | NA |
| --- | --- | --- | --- | --- | --- |
| Content knowledge in your AP discipline, relevant to increasing student success in AP courses and exams | O | O | O | O | O |
| Pedagogical skills in your AP discipline, relevant to increasing student success in AP courses and exams | O | O | O | O | O |
| Ability to support the success in AP courses and exams of students who have been traditionally underrepresented in AP STEM courses (e.g., low-income, minority, and female students) | O | O | O | O | O |
| Maintain high expectations for all students | O | O | O | O | O |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| What strategies has your school used to encourage traditionally underrepresented (e.g., low-income, minority, and female) students to take AP STEM courses and exams? | Our school uses this strategy. | | | Our school’s use of this strategy has increased as a result of our participation in the MMSI AP Program. | | |
| Agree | Disagree | DK | Agree | Disagree | Don’t Know |
| Providing outreach to students to promote increased participation in AP courses | O | O | O | O | O | O |
| Hold AP-specific events such as AP Fairs or AP Days | O | O | O | O | O | O |
| Providing outreach to families to promote increased participation in AP courses | O | O | O | O | O | O |
| Notifying students that they will receive awards for qualifying AP exam scores | O | O | O | O | O | O |
| Providing AP exam fee waivers for students with demonstrated financial need | O | O | O | O | O | O |
| Helping students complete and submit any forms required for fee waivers | O | O | O | O | O | O |
| Helping students complete forms required to register for AP exams | O | O | O | O | O | O |
| Using the College Board’s “AP Potential” program to identify students for enrollment in AP courses | O | O | O | O | O | O |
| Increasing the number of AP STEM courses offered | O | O | O | O | O | O |
| Increasing the number of sections of AP STEM courses offered | O | O | O | O | O | O |
| Adjusting AP and Pre-AP course registration policies (e.g., eliminating requirements such as minimum GPAs or taking honors-level pre-requisite courses) | O | O | O | O | O | O |

Please describe any additional strategies (not mentioned in the table above) that your school has used to encourage traditionally underrepresented students to take AP STEM courses and exams. [Open-ended]

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| What strategies has your school used to support the success of traditionally underrepresented students in AP STEM courses and exams? | Our school uses this strategy. | | | Our school’s use of this strategy has increased as a result of our participation in the MMSI AP Program. | | | |
| Agree | Disagree | DK | Agree | Disagree | Don’t Know | NA |
| Offering the study sessions prescribed by the MMSI AP Program (i.e., 18 hours per course, provided as three Saturday sessions or six after-school sessions) | O | O | O | O | O | O | O |
| Providing transportation to study sessions, if public transportation is not available | O | O | O | O | O | O | O |
| Collaborating with curriculum leaders and feeder middle schools to address student preparation for AP courses in grades 6 to 8 | O | O | O | O | O | O | O |
| Encouraging students to take the AP exam again if they don’t receive a score of ‘3’ or higher | O | O | O | O | O | O | O |
| Providing additional study support to students who are re-taking an AP exam | O | O | O | O | O | O | O |

Please describe any additional strategies (not mentioned in the table above) that your school has used to support the success of traditionally underrepresented students in AP STEM courses and exams. [Open-ended]

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| In addition to the strategies identified in the previous question, what strategies have you personally used to support the success of traditionally underrepresented students in AP STEM courses and exams? | I use this strategy. | | My use of this strategy has increased as a result of our participation in the Mass Insight AP Program. | | |
| Agree | Disagree | Agree | Disagree | NA |
| Teaching the AP curriculum as outlined in the College Board guidelines | O | O | O | O | O |
| Providing out-of-class tutoring or review sessions to my AP students | O | O | O | O | O |
| Attending and supporting the study sessions prescribed by the MMSI AP program (i.e., 18 hours per course, provided as three Saturday sessions or six after-school sessions) | O | O | O | O | O |
| Encouraging my students to attend the study sessions | O | O | O | O | O |
| Encouraging students to take the AP exam again if they don’t receive a score of ‘3’ or higher | O | O | O | O | O |
| Providing additional study support to students who are re-taking an AP exam | O | O | O | O | O |

Please describe any additional strategies (not mentioned in the tables above) that you personally have used to support the success of traditionally underrepresented students in AP STEM courses and exams. [Open-ended]

How often do you do each of the following in your AP class?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Never or Hardly Ever | Once or Twice a Month | Once or Twice a Week | Almost Every Day |
| Promote student interaction and discussion using inquiry-based techniques | O | O | O | O |
| Use students’ interest and background experiences to make connections to our content | O | O | O | O |
| Develop students’ ability to make connections among topics in our discipline | O | O | O | O |
| Develop students’ ability to make connections between our discipline and other disciplines | O | O | O | O |
| Use the results of classroom assessments to inform instructional decisions | O | O | O | O |
| Use a variety of teaching methods to engage diverse learning styles | O | O | O | O |
| Have all students collaborate in small groups to enhance thinking and reasoning skills | O | O | O | O |
| Model planning, goal-setting, and strategy development | O | O | O | O |
| Scaffold instruction to support student understanding | O | O | O | O |
| Develop students’ ability to communicate aspects of the discipline verbally and in writing | O | O | O | O |

Approximately how much of the College Board recommended curriculum in your AP subject do you complete?

O One-half or less

O More than one-half but less than two-thirds

O About three-quarters

O All or nearly all

To what extent do the following people in your school support the inclusion of underrepresented students in your AP class/es?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Not At All | Minimally | Moderately | Substantially | NA |
| Principal | O | O | O | O | O |
| Vice-Principal or Academic Dean | O | O | O | O | O |
| AP Coordinator/s | O | O | O | O | O |
| Content Area Chairs (e.g., math, science, English) | O | O | O | O | O |
| Other teachers | O | O | O | O | O |
| Guidance counselors | O | O | O | O | O |
| SPED/ELL support staff | O | O | O | O | O |
| Parents | O | O | O | O | O |
| Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | O | O | O | O | O |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| To what extent do you agree or disagree with the following statements | Strongly Disagree | Diagree | Not Sure | Agree | Strongly Agree |
| Underrepresented students in my AP courses often have less background knowledge in the content area than more traditional AP students. | O | O | O | O | O |
| Underrepresented students in my AP course often have less developed study skills than more traditional AP students. | O | O | O | O | O |
| I am able to adequately support the learning needs of underrepresented students in my AP course. | O | O | O | O | O |
| I would like more assistance to better support underrepresented students in my AP course. \* | O | O | O | O | O |
| Students benefit from my AP course even if they do not receive a qualifying score of 3 or above on the AP exam. \*\* | O | O | O | O | O |

\*If agree or strongly agree… You indicated in the previous question that you would like more assistance to better support underrepresented students in your AP course. What type/s of assistance would be beneficial? [open-ended]

\*\*If agree or strongly agree… You indicated in the previous question that students benefit from your AP course even if they do not receive a qualifying score of 3 or above on the AP exam.  In what ways have students benefitted? [open-ended]

**If you wish to go back and review your responses, add any information, or make any changes, please do so BEFORE hitting the NEXT button at the bottom of this page.**

Once you hit the next button, your responses will be recorded and you will not be able to modify these responses.

Questions should be directed to Sue Leibowitz at [sleibowitz@donahue.umassp.edu](mailto:sleibowitz@donahue.umassp.edu) or (413) 587-2403.

# Appendix B

**Open-end Comments**

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| **Q8 - Please specify below what other supports you were offered from Mass Insight Education's Content Directors relevant to increasing success in AP STEM courses and exams.** |
| 3 Saturday Sessions for students |
| Access to AP Exam questions that I didn't already have. |
| Administration of a mock exam, graded by other instructors. |
| Amy Johnson was always available for any questions. |
| Amy offered to teach a lesson in an area I wasn't very strong in. We hadn't been able to coordinate the time. I may take her up on it this year, however. |
| At any time if I needed help of any nature John Souther was there. He would either help me directly and/or guide me to others who could help. The program is a God send for new teachers, too, to help guide them through what is undoubtedly one of the hardest APs out there. |
| Books and calculators |
| Collaboration with other participating schools. Mock exams that were graded by peer teachers. Saturday sessions as opportunities for students and teachers from participating schools to collaborate |
| Copies of old AP questions |
| Drop box with AP type questions. |
| For both AP Calculus and AP Statistics I was offered unlimited communication and access to our content directors to assist me in strategizing or problem solving to gain the optimal student success, both for a day-to-day classroom achievement and engagement basis and also for long term success on assessment, student success on understanding and demonstration of content knowledge. Support with resources and ideas for improvement were ongoing, and they are great listeners! There was never judgement by the content directors, always support, which was extremely helpful and key to my improvement. Also key for me, living in the Western part of MA, I now had access to a network of ideas and teacher collaboration, that just isn't possible where I live, with so few AP math teachers. My AP Calculus director is incredible with his support and continual interest in both teacher and student success. He also took MANY long trips from Boston area out to the Berkshires for my 7:35 class start time! My students and I both benefited from his insight and style of teaching. He has a great ability to reach students and tap different ways of thinking, that lead to better understanding. I appreciate his willingness to be helpful, and always easily available to help. These content directors are invaluable. |
| Fortunately our content director has been relieved! |
| Help in finding instructors for Saturday study sessions |
| I actually don't even know what the word "content director" is. Is this the local team leader? If it does, they do a good job, but student motivation and achievement is still low in our district for ELA because of delays in social, emotional, and executive functioning areas. I don't understand why increasing enrollment equates to better performance. |
| I am not familiar with this "Content Director" terminology. The head of our cohort did not do any of these supports. Some speakers at the Summer Institutes and/or the 2 day seminars were awesome and some were not so good. The very good ones did most of the things listed above and their suggestions and materials were very helpful. |
| I am not sure who you refer to specifically as a content director..... |
| I attended the 1/2 day study sessions offered to my students and sat in and observed other teachers and their AP lessons-- I found these sessions useful to myself as well as to my students. |
| I did not teach AP Chemistry last year. Our school offers it every other year.The previous year, I did not attend the conference in Bridgewater over the summer because it was over an hour from my home and I have a young child for whom I could not make arrangements for overnight care.I attended a MMIS conference the year before that, which I did find helpful. |
| I didn't get along with my content director |
| I don't teach STEM |
| I don't teach STEM so this doesn't really apply, but I have always had full support from MIE. Also, most of our students are from underrepresented demographics, but our whole school was involved in increasing enrollment. We did get support from MIE but our primary supports came from our teachers and building admin. |
| I found the 2 day workshops and summer session very helpful. The Saturday sessions for students weren't very helpful for students. I feel like if they were able to do field or lab experiences on Saturdays rather than PowerPoint lectures they would be more beneficial to students. |
| I have had very little contact with MIE outside of the two day and five-day training. I have not asked for much but have been offered very little. No one has reached out to or initiated any communication with me. |
| I needed assistance with my AP Biology syllabus audit, but never received a response. I did have my support consultant come and teach a lesson which was phenomenal! My students really learned a lot and it helped me understand the strategies to move quickly through a topic. |
| I think the mock reading is something that every AP teacher should take part in if you are not an AP Reader already. While I was unable to take advantage of it, the offer to help/direct one of the labs or at a minimum, provide lab equipment to run a lab would be great. I plan to take advantage of that next year as long as it is still offered. |
| I was able to get more multiple choice questions with answer rationale--that was helpful. |
| I was never contacted the Content Director for Environmental Science during the year. |
| I was offered opportunities to have MMSI representatives visit our school and talk with classes or hold assemblies. |
| In summary, I received the following from MA Insight:  -Access to several lesson resources (in digital form) that were invaluable to my instruction this year -Assistance with instruction for a guided inquiry lesson on one Physics unit |
| John Souther is amazing |
| John Souther is an awesome resource - he offered to teach classes and observe classes; he offered pre-made midterms and review exams composed of old AP questions; he offered to grade mock exams and break down the results. He is The Man. |
| John Souther was a great resource |
| John Souther was tremendously helpful and continuously offered support. |
| Just the summer institute thing and the October sessions, really, and they were both terrific. Less useful was my contact with the Stats person for the region. |
| Leslie has been a tremendous resource and continuously supports me whenever I call or email. She has contributed greatly to my success with the course. |
| Leslie Prudhomme shared AP Biology lab materials with me and offered support throughout the year. Unfortunately due to outside factors I was unable to take advantage of all of the offered support. |
| Leslie was awesome she came in with a cool lab for cell respiration. She has been very helpful |
| Mass Insight has been great especially with the mock exam which gives me a really good sense of where the students are just past the half way point. |
| MIE Science Team met with the Science Dept to discuss strategies for our school to better utilize the MIE program for the school.  Meeting the local instructors of our area at an informal meeting to share ideas and lessons. |
| Mock exam |
| Money for supplies-was greatly appreciated! |
| My AP course does not fall under the STEM category. |
| My Content Director came to my classroom with an high tech equipment and many organisms to teach a two day lab on cellular respiration and photosynthesis. This was an inquiry based lab and was excellent in helping my students ask questions, make hypothesis and analyze data. |
| My content director was always available to answer questions about material to be covered, AP exam information and anything else I needed help with. |
| My liaison, John Souther, is incredibly supportive. He checks in often and seeks to provide whatever I need. I think of him as a valuable resource and am grateful for all he does. |
| My school allowed me to be an A.P. reader |
| Myra Morgan has spent a large amount of time and energy meeting with me this year, corresponding by email, co-teaching a laboratory class and otherwise being a wonderful resource - I love her! |
| Occasional emails offering "help" if we needed it. |
| Once my school no longer paid money to be part of MMSI, all training and funding was cut for AP ES via MMSI. Thus, I received nothing for the last two years. In the beginning, Myra Morgan provided outstanding support and training to me.  Also, the instructors that are hired to teach for the SSS are terrible and lack rigorous content teaching. |
| Our Lead teacher dealt mostly with the Content Director and passed along any information. We are all offered these items, but do not necessarily need to avail ourselves of them due to our years of experience, past trainings, and the diverse demographics of our school population, which has led to training in addressing "the under-represented populations" needs on a general scale. Therefore, I have checked "not applicable" for a number of selections where the service is offered but not needed to pursue. We have a track record of success in English, so we must be doing something right - for we have always, since its 1980 inception, had open enrollment in the AP English course. |
| Patti came in to teach my class and provided invaluable resources. |
| Patti was absolutely amazing at supporting us when both of our AP English Literature teachers took extended maternity leaves. We are very thankful and feel that she is there to help whenever we need it. Thanks! |
| PD opportunities for Calculus (BC) were offered and attended. These were GREAT! All of the PD offered has been very helpful. |
| Practice Tests and Answers |
| Provided lab materials and procedures. Provided study session instruction. Modeled teaching methods. |
| Provided TONS of multiple choice lessons.  The AP Summer Institute is Amazing.  This experience has completely changed how and what I teach-- for the better!! |
| Received emails with helpful lessons. |
| Sally came in and give distinct lessons twice for my students when I had to be out of district, and this was very helpful! |
| Sally G is fabulous! |
| Sally was amazing. She was always available for support and information. |
| Sally was very helpful whenever I emailed and asked her for anything. |
| Saturday sessions should not repeat activities we already do in the classroom |
| Sharon Hessney communicated via email and newsletter on a very consistent basis with planning and strategies. She was a readily available advisor and coach. She was highly effective as a model teacher for a few lessons each year and engaged the students in rigorous activities! |
| Sharon's Stats newsletter was fantastic! Great resource. |
| Some of the boxes I ticked not offered, I wouldn't need, but some would be helpful. I would be particularly interested in how to support under-represented or non-typical AP student. |
| Summer Institute was great! |
| Technically, none of this is applicable. I was teaching AP Literature, and not a STEM AP. However, I was given materials, and found the student sessions useful. |
| Test prep lessons, released exams, answers to my many questions She was fabulous!! |
| The content director was very helpful in modeling the teaching of specific topics, in relating specific areas that are regularly tested, in providing database for test questions and solutions. |
| The lead teachers offer strategic support. |
| The Mass Insight program transformed what I was doing and the content I was providing in my classroom. As part of my summer training I was given five different course curriculums from Leon Schramm and his Exposure Java. I implemented that curriculum in two of my courses this year and had much greater success with educating my students. The Mock Exam readings and two-day trainings were also very valuable. The mock reading really helped me to understand the AP exams and the grading process, which made me a more informed teacher who could more effectively instruct my students on the test and how they should approach it. Every Mass Insight training increased my knowledge of the Java programming language, the AP exam, and it allowed me to network with other computer science teachers, which was also very valuable. I not only learned further tips and tricks to help my students with the test, but I also got tips on how to improve the computer science program at my school. From working with guidance to better define what my classes were and the sequence they should be taught in, to making one of my classes a true pre-AP class to give my students a greater chance at success. I would say that the Mass Insight training is the number one training resource I received that improved me as a teacher and the content I provided to my students. |
| The Summer Institute and the 2 Day workshop leaders, as well as the teachers I met, provided a wonderful networking base sharing materials. |
| The week-long and 2-day workshops rank as the best professional development I have experienced, as it is balanced between theoretic and pragmatic. |
| They did an excellent job helping with data analysis, connecting me to accomplished educators at other schools and providing an opportunity to discuss and brainstorm ideas. |
| Use of equipment |
| Very disappointed in the grant, supported my admin when they took the class away from me after teaching AP for 10 years. During the first five years I paid for the AP and then advanced AP myself. The school then took the class from me due to my reaching retirement age and no support to me after all my hard work. |
| We have been offered nothing for AP English |
| We have had PREAP training for all the ELA teachers in my school |
| We were offered a plethora of old tests and lesson plans, and the support in this area was wonderful. Initially, we had a big pep rally to encourage participation, but with a new principal this was not continued (not due to lack of interest on his part, but maybe just a lack of continuity/communication). |
| Weekly emails with activities, strategies, and relevant media for use in AP Statistics. Each weekly email contained MORE than I could possibly use during any given week. There is an abundance of useful information provided every single week! |

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| **Question 11: Please describe additional strategies (not mentioned in the table above) that your school has used to encourage traditionally underrepresented students to TAKE STEM courses and exams.** |
| Aggressive recruiting by AP teachers through classroom visits and one-on-one conversations with students. |
| Begging, cajoling, pleading...although not with any notable degree of success |
| Establishing the Engineering Minority Outreach Club in conjunction with MIT SHPE |
| Extra help sessions to improve academic skills necessary to succeed in an AP course. |
| Giving AP students t-shirts to wear. Creating an AP Study Hall Adding additional class time for some AP classes. |
| Having low income minority girls sign up for the class is not a problem. It is getting the boys to sign up, and then not drop it that is the problem in my classroom. I get 40 kids signing up for a 24 person class, and they are all minority kids. |
| Having present AP students visit classrooms to share their experiences and answer questions, thus cheerleading for the worth of the experience and giving the peer perspective. These students may also speak to the whole group of scheduled students for the next year at the time of distributing summer reading assignments. |
| I believe we have always been a MMSI school. |
| I don't teach stem. |
| I teach AP environmental science to an alternative education population - students that normally would not be considered for AP level coursework. |
| In some cases, we have adjusted requirements to get into AP classes, but some teachers and administrators at our school are still barring students from access based on their past grades (even in other classes), which I completely disagree with. I could really use help spreading the word that MMSI is specifically focused on improving access to AP course to ALL students, regardless of past classes and grades, so long as they demonstrate potential and are willing to make the commitment, |
| Much of the outreach was done by the principal and guidance departments |
| My AP course does not fall under the STEM category. |
| My program has just finished its second year so it is just developing. My school has a large population of minority and financially needy students and many of my students this past year fit in that category. However, since I am new to teaching and just developing my program, my major priority has been to improve my knowledge of Java and the AP exam as well as develop an effective curriculum. I would say one problem with my classes was that the registration policies allowed students below standard GPAs and honor level work. A number of my students did not have the necessary study skills and work habits necessary to be successful and in the future that is something I hope to address and improve. I think the most important element to improve my program is the pre-AP class that allows students to be exposed to computer science principles and the java language at a slower pace and without the pressure of the test. The importance of a pre-AP class is something I heard from many other computer science teachers I met through the Mass Insight program. I think an effective pre-AP class will lead to having students that are truly interested in computer science in my AP class, students that have a decent foundation in the language and programming principles so they can handle the pace of the AP class that is necessary to cover all the topics of the AP exam. |
| My school started to increase the numbers and sections but then they got annoyed that students wanted to take so many science classes so now they are limiting the number of AP classes that a student can take if they have already taken an AP class. I do not agree with practice. |
| No matter what, I have to answer "Our school's use of this strategy has increased as a result of our participation in the Mass Insight AP Program" because it is a part of the program. This data will inherently be somewhat biased.To clarify, I don't believe that there is a general benefit even though there is an increase. |
| Not all schools have written in their contract that students receive awards for qualifying AP exam scores. PHS does not monetarily award students for qualifying scores. |
| Offer AP to different grade levels not traditionally 'allowed' get rid of Honors level and only have AP level available |
| Our admin team actively supports staff training and encourages staff to explore new AP programs. The extent of the admin support has brought many educators in our school to AP/MMSI training. Our student/staff participation has been exponential. |
| Our increase in enrollment has come from a number of factors but it's less from specific strategies and more a cultural shift in our building. MIE gave teachers the opportunity to implement the change we had always wanted, and the support to overcome doubts from some of our faculty. |
| Our school has increased the participation in AP Courses but our success with these courses in minimal. The school has also increased the number of AP Courses and has also dropped an honors option in several departments which has caused the numbers in AP math classes to drop. |
| Our school has never put up barriers to AP courses. |
| Pittsfield High School has a high level of AP enrollment because our philosophy is every student should take an AP course. We will run classes with a low number of students just to run AP classes. We expand sections as needed. No one is denied a place and there are few prerequisites, none grade related. |
| Promoting courses by visiting pre-AP classes during registration time. |
| Rigorous Pre-Calculus lessons, Northeastern University Bridge to Calculus |
| Science Fair, School Assembly |
| So many students now take the English classes that we are faced with having to pass under qualified students. Grade inflation results in GPA boost. There's the incentive. |
| Teacher recommendations and recruiting |
| Teachers recommend certain students, due to their academic abilities. |
| There are no awards offered to our students at MHS - there used to be; however, Mass Insight stopped that practice at our school. |
| There is a divide in our school currently over who should be taking AP courses. |
| This is the first year I have taught the pre-AP course as well as the AP course, so I have been identifying and encouraging qualified students all year long. It has paid off to have both the feeder/preparatory classes as well as the AP as the enrollment has picked up for next year. Traditionally underrepresented students feel they are welcome and can be successful. |
| Visiting classrooms prior to course selection/registration and talking about the AP benefits. |
| We have encouraged students to explore their own willingness to take the challenges of AP courses. This was happening before our partnership with MIE. |
| We have no prerequisites. This means students that are not AP caliber take AP classes. Then, staff has to make changes to curriculum to attempt to get these students to work at minimum level. So, we have more students taking AP courses and have offered more AP courses. But the courses are compromised and those students that should be in AP level have to accept that the pace and rigor of their courses is compromised. |
| We no longer get rewards |
| We provide/encourage additional support where it is apparent that previous course work was insufficient to provide adequate prerequisite preparation. |

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| **Question 13: Please describe any additional strategies (not mentioned in the table above) that your school has used to support the success of underrepresented students in AP STEM courses and exams.** |
| 90 minutes of mandatory after school tutoring every two weeks in AP science courses with college students as tutors, funded by GEAR-UP program at our school (pays for tutors and snacks) Bridge program the previous June for students enrolling in AP science course the following year (at least 15 hours of instructional time) |
| A majority of our students work and therefore are unable to participate in Saturday sessions. Students have also expressed that when they do go they do not like being taught by teachers they do not know and they do not find the sessions helpful. |
| Additional class time for some AP classes |
| After school help provided for students who feel they require it |
| I am available after school every day for extra help |
| I am not aware of this part of the history as I am new |
| I buy them breakfast for study sessions and on the morning of the test. I text them repeatedly to keep their spirits up and remind them to study. I meet with them during vacation to practice for the test. |
| I have, personally engaged in the last two strategies listed above; I have no knowledge of any other teacher in the school doing so. For years, I and other English teachers in my department have recommended collaboration with middle schools to address student high school preparation as well as preparation/training for higher level learning; documentation of this is available. In my school, we are prepared to challenge high school students with engaging higher level classroom learning to achieve advanced skill levels, interest, and motivation. |
| Individual teachers providing after-school tutoring sessions for students throughout the year |
| Individual teachers run extra study sessions |
| Mass Insight did drive Saturday study sessions at our school, but I only really know about how it worked in my program. We had only two Saturday sessions so that is why I said disagree to that question. The Saturday sessions were very useful, but getting my students to go was a challenge. Another challenge is that we are a small program that is in a remote part of the state far from other schools. We were able to pair with our sister high school in the city, but our turnout was small. Last year we had to travel by bus to Westfield for the Saturday session. So having the Saturday session in Pittsfield this year was an improvement. If the program can grow and get greater enrollment I think we could also grow the Saturday sessions. If it were not for Mass Insight we wouldn't have had any Saturday sessions. |
| My AP class does not fall under the STEM category. |
| Note: The last two items are so dependent on student motivation as to be of minimal implementation. In English we provide after school quick focus sessions in years when the population has a need for them, usually in the second semester when students are more worried about the upcoming exam. |
| Our science classes have an after school session every other week for 1.5 hours. This is run by the teachers, and not funded by the school. |
| Our teachers always provide extra help both during and after school for students. Students that may not consider taking an AP course, but teachers see the potential, teachers will reach out to those students and have them talk personally with an AP teacher to understand their potential and describe the AP courses. |
| Sadly, nothing. |
| There's nothing that we don't do to support these students. It's pretty much the mission of our entire school. |
| These strategies do not help underrepresented students be prepared for the exam, except perhaps for #1. |
| We only provided the study sessions participation during the years we were involved with Mass Insight, not this year. |

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| **Question 15: Please specify below what other supports you PERSONALLY have used to support the success of underrepresented students in AP STEM courses and exams.** |
| A colleague and I have been fighting to increase access to AP English for underrepresented students over the past two years by actively recruiting and identifying potential students, especially those who may be traditionally overlooked. As a result, our participation in AP English has increased threefold. However, we still need more support and training to help assist these particular students coming from different backgrounds and with different skill sets in a classroom with a wide range of abilities. In my opinion, we also need to start MUCH earlier in incorporating a Pre-AP program at our school to start developing and introducing these skills starting in 9th and 10th grade instead of waiting until 11th or 12th. |
| APTAP program... I have not heard of this. We do send & encourage/incent our students to go to all Saturday sessions, so I indicated rating as such. |
| Being available during AP enhancement block and after school |
| Diversifying instruction. |
| Don’t know of any students that re-took an exam after a non-qualifying score |
| Email and the mastering biology website have been a huge support for my students in preparing for the AP exams. |
| Even though I offer many after-school opportunities for extra help, very few students take advantage of the opportunity to work one on one with the teacher. The 11th grade students commonly do not like to stay after school; many have sport commitments and jobs, and attending the Saturday sessions is a tough one; however, more did attend this year than last year. Also, students are learning more and more that colleges are not accepting AP Language scores of "3" and even "4" as a substitute for college freshman English or even for an elective. The "5's" are commonly known to be accepted, and the students earning "5's" are limited in numbers. Some students "rise above" that perk, but many do not. |
| Finding Spanish-language chemistry materials for ELLs |
| Framing projects in ways that interest a variety of students. Decorating the classroom with images of diverse people successful in the field I'm teaching. Decorating the classroom in a welcoming way (colors, plants, etc.) |
| I do anything that my students need. I use all the listed supports plus meet any other needs that arise- providing materials, paying fees, transportation, tutorials to help students catch up who decide to transfer into AP courses. I meet whatever needs they have to the best of my ability. |
| I give the students a 100 on a quiz score to get them to the Saturday sessions |
| I teach a senior course- encouraging students to take the exam again is not an option |
| In class - lots of cultural allusions pertinent to what's being studied for relational/comprehension grasps, and reading works of literary merit that come from those cultures for discussion and reinforcement of importance purposes. |
| Last year all my students earned qualifying scores, so there was no need to encourage them to retake the Biology exam or provide study support for the exam. |
| Most of our students attend the Saturday study sessions. All students are required to take the AP exam if enrolled in the course. |
| My AP course does not fall under the STEM category. |
| My students are seniors, so there is not opportunity to retake the AP exam |
| Retaking exams does not apply to students that are 12th graders at point of exam |
| Students who attended the Saturday session were given a quiz grade of 100. Students who did not attend the session were required to complete one of the packets given at the session for a quiz grade. |
| This is my first year teaching AP, so I haven't had to help students who haven't received a 3 or higher. I did work with students who did not qualify on the mock exam in January. |
| This survey is super confusing. I don't teach STEM. |
| Was not aware that students could re-take AP exams |
| Was not aware that students could retake the AP exam. |
| We do not have a history of students retaking AP exams. Primarily the students are taking other AP classes so their focus is on that subject. |
| We usually don't have the students the following year, so it would be difficult to suggest retaking or preparing for the test again. |

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| **Question 18: To what extent do the following people in your school support the inclusion of underrepresented students in your AP class/es?** |
| All support, but don't actively seek |
| Me |
| METCO Coordinator |
| Psychologists |
| Students who have taken a course |
| **Question 20: You indicated in the previous question that you would like more assistance to better support underrepresented students in your AP course. What type/s of assistance would be beneficial?** |
| .. A primer perhaps on specific strategies or best practices that work in my content area .. Ability to observe other AP Physics teachers and their classes  .. Having an exemplar AP Physics 1 teacher come to my classroom and model a lesson would be ideal |
| A reading program that begins in Pre-K. Financial and social assistance for families outside of school. Executive functioning, study skills, and future planning skills for all students, but especially those in AP. I feel like I am fine, but my students are not prepared emotionally or intellectually for this exam. |
| Activities, plans... |
| Additional pd and collaboration time with my colleagues |
| Additional strategies to help underrepresented students; stronger pre-AP preparation/strategies for underclassmen including research strategies; increased technical support/access to computers in and out of school |
| All my students are "underrepresented" so I have no I idea what "traditional" AP students your survey asks about are. |
| All of my students are "underrepresented students." For the most part, their reading, writing and vocabulary skills are below the level of the typical AP student. It is very difficult to make up for these deficits in one year, but that is the type of basic support I need. |
| Any help with additional strategies to use. |
| Assistance in convincing my school to implement a Pre-AP program and help in implementing it, particular strategies that have been proven to work in helping to scaffold and develop students with less background knowledge and exposure to the skills needed to be successful in an AP class, including developing essential study skills and tips on how to breakdown and tackle the writing process including with timing. I also really could use help in developing students' academic vocabulary, as they come in at a significant disadvantage in this particular area given lifelong lack of exposure, which hurts them in particular in tackling and understanding passages with more difficult language as well as with understanding the wording of some multiple choice questions. |
| Background summaries. Diagnostic testing for background material and problem solving strategies. |
| Computer training on setting up an online class with worksheets, videos and assessments. I need to be more streamlined to identify potential problems and address them in a timely manner. |
| Continued support by Mass Insight of underrepresented students taking AP coursework. |
| Cultural proficiency training and AP specific pd |
| Curriculum and/or support strategies which target these students |
| Curriculum designed for underrepresented students |
| Different strategies |
| Early identification and teaching of pre-AP skills.  More time to fill in skill gaps. |
| ELL strategies. |
| Examples of lessons that can be differentiated for different levels of AP learners but keep the same level of rigor. |
| Financial incentives for students - these need to be put back into place. |
| Funding to improve outreach to parents to help with absence issues and increase parental understanding of the AP curriculum. |
| Funds for additional study sessions |
| Help for AP coordinator to identify and reach out to them. Help for me to be able to fill in the gaps in their knowledge |
| Help my students to develop and sustain motivation to study throughout the program |
| Help recruiting more. |
| Help with unit and lesson planning along support with labs. This will be my 2nd year next year and could use the support |
| Helping ELLs with reading and understanding FRQs Helping students who have trouble with abstract logical thinking |
| How to encourage more females to take computer science. |
| How to use examples applicable to small minded small town teens to show them that stats is useful. |
| I am not sure but depending on different cases, maybe more time with students or maybe some kind of motivational tool to make them stay after school for extra tutoring. Also AP exam prep books or vocabulary/concepts cards would help in studying |
| I don't know what support is currently offered. I don't think I received any! |
| I had a real issue with students who refused to do assigned homework or seemed to understand the importance and value of education. Getting students to understand and buy into the value and importance of working outside of the classroom to improve their academic success is something I have to improve on and develop in my program. |
| I need assistance in making physics more appealing to all students so more students will take the course. This year, my class is small and they are all male and most are Caucasians. |
| I took the SEI course and found the vocabulary scaffolding helpful. Are there other resources to help students refresh on vocabulary? I have used Stats4Stem and Stattrek. |
| I would like more support for students that struggle in my class, particularly with mathematical problem-solving skills. |
| I would like more support from administration and the adequate time to teach the course for all students. 44 minutes a day is not enough. |
| I would like to know/learn the best ways to teach underrepresented students and how to bring them up to a level that will allow them to be successful (get at least a 3). I would like to see veteran AP teachers with these populations in action. |
| I would like to: \* track longitudinal data on student outcomes from AP courses. \* form connections with teachers at schools that are demographically similar to the O'Bryant that are having success. |
| I would love to be able to have additional workshops during the school year to assist ELLs. |
| I would need more time to focus on the needs of these students for study sessions or one on one teaching, if necessary. Students with IEP's have had difficulty keeping up with the pace of the class including the workload. I have had students exhibit anxiety and stress behavior in the class, I would appreciate additional resources from the special education department and student services for these students. |
| Identification of those students before entering the classroom to know areas of concern |
| Identifying students who require help so I can provide the support they need. |
| I'm just not so sure of why they come with a lack of study skills as is usually the case. Just wondering if there is some word/help with that. |
| I'm not really sure... maybe a workshop on this at this fall's 2-day conference? |
| I'm not sure |
| I'm not sure what is available, but I'm always open to new ideas! |
| I'm not sure--I know at the 5 day summer workshop my facilitator could not offer any help to teachers who have ELL students and that was very discouraging. |
| Improved methods of communication between parents, administration and faculty. |
| It would be extremely helpful to have a leadership (administrative) team in the building that knew and understood what AP is all about. Our principal had been an elementary teacher and our assistant principal was a middle school art teacher.  We also had NOT BOOKS for our AP Courses until 19 weeks into the semester long course. We received the books we requested a year in advance the week before final exams. |
| It would be helpful to watch a model class where scaffolding takes place throughout the whole class to include everyone while still maintaining very high expectations. |
| Learning styles and writing strategies |
| Lessons or content that was successful in teaching students with minimal skills the content, how did another teacher get the under prepared students the skills to be successful. Model the lesson for me. |
| Lessons to help students improve basic skills before tackling more challenging material. Topics could include critical thinking development and help building their ability to analyze and think more deeply. |
| Lessons, graphic organizers, possibly study skills personnel |
| Materials |
| Materials and Curriculum Planning/Testing Materials, Scaffolding |
| Materials for supporting the concepts and science practices. I have materials that go with my book and other books, but if students are struggling due to a lack of background or time to prepare/study, it is difficult to find additional materials that might help scaffold the content. |
| Money! Books...I was able to order 8 new textbooks because of the Mass Insight grant (thank you!) but I could use a few more. Being able to pay for pizzas/snacks for study sessions would be great, too. Maybe even some supplies - notebooks, pens, binders, etc...? |
| More class time. |
| More differentiation strategies would be helpful. |
| More look-after of students' basic needs such as shelters, food, and personal safety outside school. |
| More PD focused on scaffolding strategies and confidence building for underrep students. |
| More strategies, especially in scaffolding and particularly in the area of language - grammar, comprehension, etc. so there is more capability to analyze the literature. |
| More support from guidance and special education |
| more support from guidance counselors while enrollment |
| More technology for these students (laptops to bring home).  Test prep books to annotate and keep. |
| More training on scaffolding instructional strategies |
| My AP class last year had no students that do not fit the "underrepresented" category. I would like to see better development of nonfiction reading and writing outside of the sciences so that students are better prepared district wide to be successful on the AP exams. |
| My school needs to increase pre-AP courses so that more underrepresented students are in the courses. I'd like to see students taking fewer AP courses in their senior year and try to spread them out more so that they aren't overwhelming all in the last year. |
| My underrepresented students are weakest in reading comprehension skills mostly caused by lack of vocabulary. This prevents them from accessing some of the longer works of literature due to frustration. Much of this vocabulary development should begin in 7th and 8th grade. They also need help in writing at a higher level of sophistication. While I work on this throughout the year, many would benefit from earlier help in this area. |
| No idea, what is available? Almost all my students would be considered "underrepresented." |
| One day workshop with strategies to help and still hold high expectations for underrepresented students would be great |
| Outreach by guidance to identify and encourage. |
| Pre-AP strategies |
| Professional development during the school year would be great. |
| Professional Development specifically targeted for underrepresented students. |
| Professional Development, time to align underclass curriculum to align vertically with the AP curriculum. |
| Providing scaffolding techniques to improve their basic writing skills prior to attending the class or during the class to improve their reading AND writing skills. |
| Since I teach AP Language, and many of my students are ELL students, I would love help with actual writing techniques (grammar, etc.) and how to incorporate this into my AP curriculum better than I currently do. My students are brilliant thinkers and have wonderful ideas, but they often lack the fundamentals of writing, so they are unable to score well on the exam. |
| Smaller class sizes |
| Smaller classes |
| Some type of incentive for students to try hard and do the work. |
| Specific lessons that scaffold strategies needed to be successful in AP Literature. Information on literature that students will be able to access and connect with, yet will still be "AP" quality. |
| Specific PD to address this |
| Specific strategies and/or targeted instruction for students who do not come from "feeder" schools; specific strategies for students who are not "readers" and lack background knowledge. While MMSI workshops are filled with great information, they are not necessarily applicable when there is no control over the pre-high school experience. |
| Strategies for assessing and filling the gaps in underrepresented students' knowledge |
| Strategies to attract non-traditional students. |
| Strategies to fill in the gaps of missing content knowledge while still covering the required material on time |
| Strategies, lesson plans |
| Strategies, this is something I recently worked on one to one with the content director |
| Teaching ELL students how to handle the linguistic complexity of the AP exam. Teaching students who have significant algebra gaps. |
| Teaching strategies to develop study skills; motivational activities to support the complexities of writing for the AP exam; motivating students who take the course but get overwhelmed and sometimes just stop doing the work. |
| Teaching students how to study. How to create a notebook? How to create an assignment notebook, etc. |
| Teaching vocab to English Language Learners |
| Test taking strategies for student with reading and writing struggles/specific disabilities (including questions on reasonable accommodations). |
| Test taking strategies, strategies on how to deliver the curriculum in a simpler way for easier understanding. |
| There should be more frequent contact between AP teachers in cohorts. Once a month meetings to share experiences and practices. |
| They may benefit from skills review in summer before taking the AP course |
| This is a difficult question. My school population is light on the under-represented population, and I feel that the MIE work is focused, not necessarily on this population, but upon increasing enrollment and general teaching strategies/best practices. Inclusion and better practices touch all student populations, but I don't see an emphasis on the under-represented. In terms of course access, my school's schedule seems to be the biggest impediment. |
| This is my first year teaching APES and it is very confusing how the reading, labs, group projects etc. are supposed to mesh and work together. I feel that the best thing to do is to scrap the whole AP thing and develop my own curriculum for each unit. I would like some assistance on how this is supposed to be put together. |
| Training during the summer institute or fall workshop or here for teachers in my school. |
| Training, strategies, etc. |
| Trainings regarding recruitment, culturally responsive teaching, and culturally relevant pedagogy. |
| Unsure |
| Ways to keep students up to speed without sacrificing the rate at which we must proceed through the AP curriculum outline. |
| We need College Board presenters who have taught students recently. Sometimes PD we are offered is inappropriate for our student population. |
| Whatever is available; how do you "catch up" students with weak background skills? |
| Workshop |
| Workshop identifying/teaching specific strategies for the classroom as well as recruiting and identifying where their weaknesses may be from the start |
| Workshops |
| Workshops and supplemental materials |
| Workshops and/or teacher guide/manual of strategies with examples |
| Workshops Maybe a 2 day |
| Workshops would be beneficial along with power points that could be sent. |
| Writing instruction and a classroom assistant is needed to better provide guidance and feedback. |

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| **Question 21: You indicated in the previous question that students benefit from your AP course even if they do not receive a qualifying score of 3 or above on the AP exam. In what ways have students benefitted?** |
| ??? I don't understand your question. Isn't learning about environmental science and how they will be affected by our rapidly changing world; preparing for their futures, etc. worth knowing even if they don't score a "3"?? |
| A student that gets a two would have gotten less than that before the course. They learn important things even if they aren't yet able to do college level work. |
| Academic skill sets increase substantially |
| Acquired skills |
| After taking my course they understand the expectations of a college-level course, they have improved their understanding of chemistry and their critical thinking and study skills regardless of their score on the exam. |
| Almost all my students who score below a 3, but made it college have indicated to me taking AP Chemistry was an eye opener for them. One of them received an ACS Award for maintaining the highest GPA in his first year Chemistry program in a local community college. |
| AP courses help students get familiar with the content in college level so when they take those courses in college, they know what are expected. |
| AP Lang is a skill-based course; thus, any student who puts in the effort will become, to his or her degree, a better reader, writer, and thinker. |
| Become aware of what a college course is likely to require |
| Being around other students who take scholarship seriously. High quality instruction. I also do not agree that achieving a qualifying score is the only way to measure the amount of learning that took place in the class. |
| Being exposed to a class that provides academic and social stimulation at a college level. |
| Being in a challenging course where they are accountable for college-level work. |
| Being in a challenging environment that has support |
| Being introduced to a rigorous college curriculum in HS |
| Better prepared and have a good foundation for when they take calculus or computer science in college. |
| Challenging themselves, building study habits, building a sense of self-efficacy |
| Class discussions and academic rigor |
| Confidence, exposure to a college level course and content |
| Content exposure for college |
| Content knowledge, study, reading, and writing skills are enhanced |
| Critical thinking skills and confidence. |
| Critical thinking skills, scientific writing, college course expectations |
| Develop better writing and reading skills. |
| Develop study skills that prepare them for college Develop critical thinking and problem solving skills |
| Due to the in depth curriculum and the high standards/expectations of the class, students leave better prepared for college level work and the rigor required in college classes. They practice critical thinking, writing/communication, and laboratory skills, which they will need in a variety of college courses, not just science. The format of the class is different from a typical high school class and the increase in rigor helps to prepare them for college level work, since more responsibility is put on the students. Students often identify study habits and learn which strategies work best for them, an adjustment many college students struggle to identify. In addition, the in depth content knowledge provides a foundation that they can continue to build on in college. All of these experiences likely contribute to increased success. Most students return from college indicating their college science classes were "easier" than AP Bio and they felt "better prepared" than their peers, even those from larger schools. I believe all students experience these benefits, regardless of their scores on the AP exam. |
| Even before scores are released, students have told me how much they have benefitted from taking the course. Their reading, writing, and thinking skills have improved tremendously. |
| Even if they don't score a 3 or higher, they are still well prepared to take Calculus in college and succeed. |
| Every student who goes off to college (and even those that don't) need to be able to think critically, analyze arguments and formulate arguments. This is not only needed for the Freshman Writing Course, but for the writing of most papers at the college level. Therefore, the skills they learn in this course, and the new genres of writing they gain practice in make this one of the most valuable courses I teach. The exam is beside the point. |
| Experience of a college type course and how to handle such a course load |
| Experience of college level work and expectations before entering college. Preparation for what is to come. |
| Experience of rigorous course, experience in making connections and truly understanding concepts, instead of acting like a machine |
| Experience what college classes are like |
| Experiencing the rigor of an AP class as well as the level of inquiry/writing makes them prepared to deal with the demands of college classes. Many students come back to me and say that as a result of their experience in AP, they were more comfortable and successful in the college classes. |
| Exposure to college level questions and topics. Amount of time spent on each topic also a lot less that a regular class, even though not exactly at college speed. |
| Exposure to college-level expectations, texts and writing assignments; interaction with college-prep peers; overall high expectations for college readiness |
| Exposure to curriculum, work habits, vigorous discussion, rigorous expectations |
| Exposure to high rigor and expectations. Firsthand experience in accountability related to high level learning. Difficult project work needed creativity, perseverance and collaboration to succeed. |
| Exposure to rigor.  Better prepared for college |
| Exposure to rigorous and rich content |
| Exposure to sophisticated concepts. Stronger comprehension and composition skills. |
| Exposure to teaching and testing they would face later on attending colleges. |
| Exposure to the content prepares them for college and the work place even if a qualifying score is not attained. |
| Familiarity with heavy course-load, rigorous work, and high expectations; time-management skills; accountability and responsibility; close-reading and analysis skills; study and research skills; familiarity with MLA conventions and documentation; crafting a well-written college level essay; development of correct/effective grammar, mechanics, and style; ability to support a claim completely and in an organized manner; collaboration and presentation skills using a variety of methods and electronic tools; appreciation for literature and familiarity with the literary canon. |
| For most of my students, it is the first time they read a textbook! The pace and work is harder, but the supports allow them to get most things done! |
| Former students come back and share that even if they did not get a qualifying score they still benefit from the experience because they get exposed to the rigor of the course. Content knowledge also helped them excel in their college calculus classes. |
| Gain experience in a college class and following college like practices such as large exams |
| Greater success in post-secondary courses...all report back that corresponding college courses are more accessible than those students not taking AP mathematics courses. |
| Have a better understanding of the expectations of college, how to study and manage time when in college. They also learnt there are outcomes for the decisions they make, if they don't study or prepare for an exam, they probably won't pass it. The consequences of their decisions and actions are more pronounced in college than high school. |
| Higher level of academic discourse. Exposure to more current events. More work with non-fiction. |
| I believe exposure to the material will prove helpful when they encounter it again. In fact, a previous student who did not receive a qualifying score told me that she was doing very well in her college programming course because of this very reason. |
| I believe my students left my course better prepared to navigate a college level class. They learned study, research, and presentation skills that they previously did not have. |
| I believe that exposure to CS content is valuable even if mastery isn't achieved but this opinion is not based on tangible data. I would like to collect and analyze data around this question. |
| I do believe that all students who are planning to attend college will benefit from seeing college content and being more independent in their learning. They should not expect it to be all lecture and regurgitation. |
| I do not subscribe to the idea that the College Board is capable of measuring student success by a single test. I think that the College Board outlines a rigorous academic curriculum that any student, who wishes to pursue college-level learning, can benefit from. |
| I have been teaching a Pre-AP course for 3 years but the 2015-2016 school year was my first teaching AP Lang & Comp. It was a learning experience for us all. I do not know how my students did on the AP exam but I do know that they developed critical thinking skills, they developed their writing skills, and some of the students "got it" - they understood how to present an argument and are still working on refining and polishing their skills. |
| I have had several students come back and tell me that their college class was much easier than they thought because it was all a review, I also have had students realize the vigor and want to challenge themselves in future AP classes |
| I have previously addressed this question briefly; however, I will elaborate as follows: learn daily in an atmosphere that challenges, promotes, and engages all students in higher level thinking, speaking, reading, and writing. The students readily know this and respect it as well. Simultaneously, the students know that their fortes have great merit, and they learn to use their talents to hone in on their foibles/area to improve upon while being supported by their teacher. |
| I hold all students to the same high expectations. Students have the opportunity to develop the skills they need to be successful, and I will support that development |
| I keep in touch with my students after they graduated high school and almost all of them have told me that they were very successful in their first calculus class in college because of my class |
| I know they are exposed to academically challenging texts of varying genres and periods. I hope they gain skills to handle these texts and learn to appreciate them and perhaps enjoy the intellectual exercise. |
| I make it clear to my students that there is evidence that taking an AP course increases the chances of success in college even if they don't pass the exam. |
| I teach them how to solidly think. Thus, it’s not necessarily about the Java programming language nor about getting a certain score via a rubric. Instead, it’s about showing that one understands and duplicate/create an algorithm successfully. |
| I think a rigorous AP classroom environment is helpful for all students. |
| Increased literacy skills--reading and written analysis-- with dense texts; increased confidence and informed opinions in verbal discussion of dense texts from 17th century treatises through contemporary op-ed pieces |
| Increased rigor |
| It is a rigorous course that challenges them |
| Just because the student doesn't score a 3 or higher does not mean that they did not benefit from taking my course. They were taught a full year of Calculus topics and can use that as a foundation for the Calculus that they take in college. They also benefit from the classroom experience and the life lessons that are taught. To use a number on a test to gauge the benefits that a classroom experience provides is totally illogical and is why too many people stress a grade on this test as a measure of a student’s intelligence. |
| Learning about the Planet and the challenges we as a species face in the coming years in addition to basics like recycling, water quality, food safety and energy needs and consumption is important. I believe that this course should be required as a general education requirement for all students. |
| Learning higher order thinking, critical analysis of difficult texts, confidence in writing at the college level. |
| Learning important content about environmental issues.  Participation in Socratic Seminars improves their dialogue skills. Preparation for a similar course in college (many students in college tell me how well this course prepared them for courses they take as freshman) |
| Learning to look at the world in a new way with a critical eye. Enhances writing & speaking skills |
| Many care passionately about my subject, and if they first encountered it an university lecture they might decide that they're so bad at it as to change majors. It's challenging to learn totally new material, and after a year in my course they'll be ready to really understand that introductory college course and then have a strong foundation for the rest of college. |
| Many students have come back to me after taking Calculus in college, even though they did not receive a qualifying score in my class, and told me that thanks to that class, taking Calculus in college was very easy for them. |
| Materials |
| Materials that allow me to better prepare lessons. Reading suggestions. Writing materials. |
| My course introduced students to the computer science field. Some realized it wasn't something they were really interested in while others found it to be something they enjoyed. I had two programming classes this year the AP and pre-AP classes. Since this is a new program the student's experience level in both classes was about the same. At the end of the year I would say that the overall ability and engagement from students was higher in the pre-AP class than the AP class. Although I am not returning to PHS next year I think my pre-AP group are in an excellent position to be successful next year. I think to start with a group of students that have a good foundational knowledge in Java and computer science as well as an understanding of the rigor required of the AP curriculum will lead to greater success. |
| My course work and work load are more rigorous than they would get in an ELA 11 course, and my focus on rhetorical analysis and more complex expression of their ideas will help them in all their classes and college. |
| My students have had better success in college and their other courses because of their AP English. |
| Oh, immeasurably! They learn to look at literature in different ways, to find meaning in texts that would be incomprehensible in the past, to see syntactical elements that aid in constructing that meaning, to discuss what they find in an academic setting, to write responses that are clearly focused, to use technology as a part of the learning process--I could go on and on. The feedback from my students who are away at college has been overwhelmingly positive--regardless of their scores. |
| Pacing, Rigor, Independent Reading for understanding, Discussion, Constructive arguments... These skills are needed to succeed in college. |
| Preparation for college courses |
| Problem solving, pushing out of their comfort zone. |
| Provides them with the background for further courses |
| Rich learning. That's our real goal in here. Scoring high on the test is an adjunct bonus, but not my central goal, even though I do dedicate a significant amount of instruction and practice to test taking strategies, for the sake of student competence, |
| Rigor of college course work |
| Several students who did not receive a 3 on the exam have told me then when they took Statistics in college it was relatively easy for them, and they received high grades. Also, students still learn a lot about statistics, and they can apply this knowledge, even if they don't pass the exam. |
| Some of my students cannot multiple fractions correctly. They are still learning science, how to think, how to experiment, and how to use chemistry to solve a problem. This is regardless of their test scores. |
| Some of them really don't have the communication skills to earn a 3. But they still learn a lot about the normal distribution and how the processes are done and why. |
| Some students learn problem solving at a slower pace. Taking the exam a second time gives them a little breathing room to succeed. |
| Students are better prepared to meet the expectations in college and they often find success there even after struggling in AP Lit. They are better writers, thinkers, and readers. |
| Students are better prepared with the critical reading and thinking skills that they will need to succeed in college. |
| Students are challenged by the level of the material and the complexity of the writing assignments and feel better prepared for college because of the course, regardless of whether they achieve a "3." On student wrote in an evaluation, " the rest of my English work seems like a breeze after this class." |
| Students are exposed to full year’s curriculum even if they score a 1 on the exam. End of year assessment shows that virtually all students learned enough to pass the state MCAS chemistry exam even though there were topics on the MCAS that are not on the AP curriculum - students in the honors and regular chemistry class do not get as broad an exposure due to time constraints. Also feedback from students who scored 1's but went on to college chemistry has been very positive. Students were able to succeed in their college chemistry courses while classmates were struggling. However, I have found that students with PSAT scores lower than 900 have a tendency to struggle in the AP course and have had to adjust curriculum for those students which does slow down the pace of the class. |
| Students are exposed to the rigor of a college level course and are also introduced to the content which both are required in college. |
| Students are exposed to the rigor of college level work and learn strategies how to study and be able to complete more rigorous workload. They learn a lot even though their test scores might not indicate that. |
| Students are exposed to ways of thinking and material that they would not typically see in high school. It broadens their vision of the world. |
| Students are getting insight into what a college course will be like. |
| Students are introduced to the level of a college course |
| Students are prepared for college science courses - if they have to take introductory bio they report that it is very easy for them compared to their classmates who did not take AP. They also tell me that my course helps them develop writing skills. |
| Students benefit by being exposed to a rigorous and rich curriculum that helps prepare them for a college level experience. |
| Students benefit from all high-rigor courses in any content. The Grades 11 and 12 curricula in our school are robust and are still taught during the AP year. |
| Students develop skills to problem solve and to look for information outside of the text. They also develop peer interactions. These skills cross curriculum barriers and can be applied elsewhere in their education and in life. I have also heard of students who haven't done so well on their AP Exams re-taking the subject in college and doing very well because "all of a sudden" the information "clicked". |
| Students develop study skill strategies, written and verbal communication skills, and critical thinking skills. |
| Students gain an understanding of the rigor of college classes while in a more comfortable, guided setting. |
| Students gain better reading and writing skills and learn how to effectively communicate. All of my students said this year that AP Language taught them so much about reading, writing, and language. They seemed to really enjoy the class. |
| Students gain knowledge and confidence. They have successfully navigated of course with the best students in their school. Many students tell me in the end of course evaluation that they achieved things they never thought they could achieve. This is the reason why I teach. |
| Students have an opportunity to grapple with text complexity. They also have an opportunity to write far more analytically and think on the higher level of Bloom's taxonomy. Students also participate in classroom discussions daily. Collaborative work, peer editing, small group discussions are a valuable learning experience for students who would score in the 1 or 2 arena. However, we have been teaching in a block schedule and next near we are moving to 43 minute classes which undoubtedly will change the great dynamics of the block scheduled classroom. |
| Students have been exposed to college-level material. AP courses are a great preview of the challenging coursework they will take in college. |
| Students have contacted me after graduation to let me know that because of the AP Biology class they are performing much better in their college biology classes. The AP Biology class prepares students for college and increases their self-confidence to succeed. |
| Students have reported on numerous occasions that they leave the class with a new and more informed world view. Some are not good test takers and others are not as good as others at remembering the more trivial information, as is required on much of the AP exam. However, they do have an improved perspective and the ability to understand complex environmental systems. |
| Students have to rise to the more rigorous (though not as rigorous as it should be) expectations of the course. Also, they work among some of the harder working students of the school. |
| Students learn communication and reasoning skills. Not every student is a good test-taker and many students struggle to make connections and synthesize a variety of pieces of information. However, I encourage students to ask questions, something they will most likely have to do in a college course or tutorial. I also encourage students to talk to one another and work through difficult problems that I believe help them, even if it is not reflected on the test. |
| Students learn how think critically and collaborate with others. Students learn how to design experiments in order to solve a problem. Students learn how to manage time, work hard and persevere through difficult material. |
| Students learn how to cope with rigorous, challenging material at a college level. |
| Students learn how to handle a college level class. They have to learn how to prioritize work and plan their time. |
| Students learn how to manage college level workloads and time management skills. |
| Students learn time management, study and organization skills as a result of taking an AP course. |
| Students learn to manage their time, work at a faster pace to move through the content, learn to read through more detailed science articles and analysis of data to reach a conclusion. Students also learn to collaborate in solving problems and make connections in the real world. |
| Students leave my AP class with an advanced analytical perception when reading literature and studying other mediums. |
| Students leave my course with a wider knowledge base about the world around them. They are better writers and have a keener eye for examining rhetoric in the media. |
| Students leave the class prepared for college, not just a test. Whether they can read, write, and analyze overall is most important. |
| Students often show improvements to their writing, literary analysis, and overall study and work habits. |
| Students were exposed to college level workload |
| Students who complete the work in my AP class ALL improve their reading and writing drastically, and they almost always say that the class was completely worthwhile. They are better prepared for college - not only for acceptance into, but also staying and completing school within four years. I would love to see students scoring 3s or higher on the exam, but I am very proud of all of my students - regardless of the score - because I know they work their hearts out every day, all year long. |
| Students who have not received a qualifying score have come back to see me after their freshman year of college. They almost always indicate that freshman biology was super easy after AP. A student who I had six years ago got a two on the exam. She now has her own lab in China, working for Coca Cola and credits the AP course for getting her interested in biology. |
| Students who have taken my course often come back to visit to let me know that the course helped them get through their college course. They watch students in their college course struggle while they are able to keep up because they were exposed to the material in high school. |
| Students will develop critical thinking, time-management and problem-solving skills that are essential for a successful college life. |
| Student's writing and ability to think and analyze material independently increases tremendously. |
| Students' writing tends to improve in quality and their ability to analyze and synthesize instead of giving canned answers. Students are encouraged how to think, not what to think - therefore making them better prepared for other courses and/or careers outside of high school. |
| Study habits, exposure to college level material. |
| Study skills, critical thinking skills, teamwork, problem solving skills |
| Study skills, time management, background knowledge, exposure to pacing |
| The classroom environment is rich in discussion and in the "big picture," citizenry. My students have had great success with the exam but greater success with what they have reasoned in our readings and discussions. |
| The course is rigorous in itself. Students will benefit, but there is still pressure on teachers to have students receive high scores and some students are just not ready to score a 3 or above. Many need a second year. |
| The experience of being in a college level rigorous course. Better critical thinking skills, better study skills |
| The experience of sitting/taking the exam brings a tremendous amount of self-awareness to students with regards to their content knowledge & study skills, and their investment into the AP Course. The feeling that they experience when taking the exam, on any part of the success spectrum, carries with them and influences their college experiences/success. |
| The exposure to higher order thinking skills on a daily basis better prepares them for the challenges they will face in their post-secondary studies. |
| The exposure to the material and rigor enables students to be more confident and successful in their first year biology course in college. |
| The fact that they took the class gets them into college. Our school's average on the exam is 2.77. We hope they are benefiting in other ways. |
| The receive a better idea of the breadth of literature and its relevance to all aspects of life. In addition, they are shown and practice different types of writing, and are able to develop critical thinking skills. |
| The rigor, pace, and consistent high expectations benefit all students. My AP class is far more equivalent to what these students will see next year at the community college or college level than anything they have ever seen here. |
| The students should learn that the pace of the class is faster than what they have been used to, and if they want to succeed they will need to do some research on their own and to advocate for extra assistance. |
| The work in the classroom is rigorous--they develop their writing, research, and speaking skills. |
| Their verbal, written, and critical thinking skills increase. They have a greater understanding of the expectations of college courses |
| Their writing skills have improved. They often don't write well in timed situations or with prompts that are just given to them without significant time to process. Their reading skills often improve as well, but their reading rate inhibits good scores because they read more slowly than other students. |
| Their writing skills improve, they are better readers, and they have been exposed to a rigorous classroom. |
| These students are better prepared for college in all aspects, such as having been introduced to a college syllabus and requirements. |
| These students do develop "college readiness" skills |
| They advance their study skills and learn to think more deeply and critically. |
| They are better prepared for college. They return to tell me how well my course prepared them for college |
| They are better prepared for the rigor of college courses. |
| They are better prepared for the writing and literature analysis requirements in college |
| They are challenged and stretched in their problem solving and logical thinking skills. They are better prepared to take the same course in the future. They also learn what they need to do to be successful in college level courses. |
| They are challenged in a way that requires them to critically think. Statistics requires a lot of analyzing and making inferences, which is different than other mathematics courses. It helps them explain their reasoning behind their answers. I also believe their writing skills improve. |
| They are exposed to the rigor of college classes, and are thus better prepared for them. |
| They are exposed to the rigor of the course and now understand the challenges that will be ahead in college. |
| They are more observant people, better thinkers, better readers, and better writers when they leave me than when they meet me. |
| They are more prepared and more confident as they head into college courses. They have already been exposed to high level discourse and materials, and will have an advantage over college peers who are seeing the material for the first time. They may not "test out" of ENG 102, but they are likely to do well in it. |
| They are witnessing a college-level curriculum and benefitting from high expectations and rigorous content. |
| They become better readers and writers of rhetoric. |
| They become better stewards of our planet. |
| They become more critical readers and writers |
| They become more disciplined and ready for more advanced courses |
| They become stronger readers and writers, preparing students for academia. |
| They benefit by being challenged every day and having higher expectations put on them. They benefit by being in an environment where there is a work ethic. There are no "days off" in AP biology, whereas in other classes I hear of days where students didn't do anything or had the day off. They benefit by learning more about the world, collaborating with peers, expressing their ideas or findings verbally and in writing, and having a teacher that is passionate about learning more about biology himself. |
| They benefit from being exposed to the content and the rigor of a college-level class. They also improve their study skills. |
| They benefit from building their skills and confidence through discussions, reading, and writing that is similar to what they will be asked to complete in college. |
| They benefit from exposure to high level thinking, hardworking students, and being held to high expectations. |
| They benefit from exposure to how a college-level class is run and what will be expected from them, including participation in elevated academic discourse (many times for the first time in their educational experience), increased close reading skills, experience in time management and independent work (including a significant amount of independent reading without explicit teacher guidance). I have heard back from many of my former students that taking my class significantly helped them to feel more comfortable and prepared for college. |
| They benefit from increased content knowledge. The often say that they never felt they were smart before. Anecdotal evidence is strong that our students benefit academically, socially, and psychologically. |
| They develop study habit which are beneficial, they are exposed to problem solving of a nature which they have not experienced, they learn aspects of physical law. |
| They develop their science based language skills and increase their knowledge in the subject before college. Sometimes they decide if biology will play a role in their college education and career plans. |
| They develop their writing and critical thinking skills substantially. Students who struggled to write a mediocre essay over the course of a week in a standard English class in 10th grade can now write a thoughtful, well supported essay in under an hour. They rose to the level of the challenges given. |
| They develop Critical reading and writing skills. They learn how to discuss literature in a mature way. They learn how to interact and converse with others about advanced literature. |
| They experience a rigorous course that tries to make them become better critical thinkers and problem solvers as well as giving them hopefully a solid base in physics to prepare them for an actual class in college. Many of my students who have received a score of 2 or even 1 on the exam have come back to me later in life and said that their college physics course was so easy because of the AP course they took in high school. Some have even said that they had become the default tutors of their class. |
| They experience the content, rigorous workloads, and develop better study skills. |
| They freely challenge each other creating a learning discourse which they aren't even aware of |
| They gain experience in a rigorous, college style course before attending college which gives useful insight into the difficulty and level of commitment required to succeed post-high school. |
| They gain understanding of the rigors that a college course would demand. Students are unprepared for the required work ethic that it takes for a course such as this. |
| They gain valuable reading and writing skills that will help them in college even if they do not score a 3. They learn how to read and analyze literature on a deeper level and get more of the college course flavor so that college will not be such a shock. |
| They get to participate in a college level class that holds them to high expectations - this experience benefits all students to prepare them for post-secondary education or careers even if they do not score well on the AP exam. |
| They have a better idea of college expectations and work load |
| They have experienced a college level course including pace and rigor. They are successful in class but may not be as successful on the AP exam. One exam does not detract from the learning. I tutor college students so I have a good sense of where my students should be and, when they attend college, they will be better prepared. |
| They have gained skills in critical reading and thinking. They have also improved their academic writing skills dramatically. They have learned how to write clearly and cohesively under time constraints. |
| They improve their reading, writing, and discussion skills. |
| They increase their comprehension and writing skills, as well as study skills. |
| They know they can complete a difficult course. |
| They learn "bits and pieces" and generally improve their capacity for academic work. |
| They learn calculus at the AP level. |
| They learn close reading techniques and critical thinking skills that will benefit them in college. |
| They learn how to do good science, report their results, analyze data, apply their content knowledge to real world problems, and think about the world in a bigger way. They attend college and report back that BIO 101 was a breeze. |
| They learn how to examine language they encounter every day--in commercials, the newspapers, on TV, via politicians, etc. |
| They learn how to higher order think when reading and analyzing literature. The course also helps them to develop better writing skills. |
| They learn how to study, time management, how to read and understand a college-level textbook... overall, how to become more prepared for the rigors of college. |
| They learn skills and gain knowledge. |
| They learn studying skills that get them ready to attend college classes. They get exposed to rigorous curriculum. |
| They learn to approach academic problems the way colleges will ask them to approach those problems. They learn to succeed at some level, even if not enough to pass the test, at meeting college level expectations. They are better prepared for college. |
| They learn to persevere, seek out help as needed, and develop critical thinking skills. |
| They learn to think critically about statistics. They learn the value of hard work. They learn better study habits. I stretch their comfort zone. We have fun. |
| They leave the class understanding that true academic learning requires the ability to critically think. |
| They participate in the rigors of a college-level curriculum. They are surrounded by other students who are more motivated, intellectually curious, and driven to succeed. |
| They read and write more than they would necessarily, if they do the work. I try to teach them in a way that is more aligned with colleges and less with high school expectations. |
| They report back from college that it was helpful |
| They return from college and tell me how prepared/successful they were even though they struggled in my class. They have also come in and spoken to my Pre- AP classes about how thankful they were to have taken my class. |
| They say that our emphasis on world authors prepares them better for future study and careers; they also say that my inter-disciplinary approach prepares them for relational thinking across subjects and problem-solving with different kinds of perspectives and creative approaches. In addition, they say that they like the college style approach of long-term assignments based on units of mixed genre, theme-based study. Every literary exploration involves a core of critical thematic analysis expanded to including history, social studies, the arts if applicable, the sciences if applicable, current events and issues, biography, in-common or personal experiences, linguistics and semiotics, symbology, technology and the media and anything else that pertains to the relevance of the work. In short, we take a "humanities" approach, with lots of analytical and personal writing, that has an eye toward preparing them for what college expects them to know and be able to do. Reports back from those who go on from here always say that they were prepared for what they are expected to do, even to assisting students from other districts who need help! And that they appreciated the mix of traditional AP Lit. reading with Nobel prize-winning world lit. authors' works, especially the modern ones. |
| They will exit with increased skill in reading, writing and discussing. |
| They work with ideas and methods that they will later see in college. |
| This course helps them understand their world in ways that go beyond what is measurable by the exam. |
| Understanding how to approach problem solving, data analysis, etc. |
| When they take the course again in college they will be more prepared for the second time around in the same course |
| When they take the course in the college, they are seeing the material for a second time and are better prepared than students who didn't take AP. |
| Yes, they benefit by the experience. They will be better prepared to attend college and rigorous courses. Improve their study skills, organization, time management and problem solving skills. It is a win-win. |