

MEMORANDUM

November 20, 2014

TO: Education Committee

FROM: Essie McGuire, Senior Legislative Analyst 

SUBJECT: **Briefing – College and Career Readiness in MCPS**

Today the Education Committee will receive a briefing on College and Career Readiness efforts in Montgomery County Public Schools (MCPS). The following individuals will be present to discuss this issue with the Committee:

- Joshua Starr, MCPS Superintendent
- Erick Lang, Associate Superintendent, Office of Curriculum and Instructional Programs, MCPS
- Chris Garran, Associate Superintendent of High Schools, MCPS

The Board of Education received a briefing on this issue on October 14. The information memorandum presented to the Board is attached on circles 1-8. The memorandum discusses the vision that MCPS has for college and career readiness and the primary strategies it is developing to support students in their efforts. Circles 7-8 provide additional detail about the steps for each strategy area, as well as possible timeframes for implementing the steps.

Dr. Starr will present an overview of these strategies and the next steps the system is taking to implement them. Council staff highlights some of the following aspects of the approaches:

- **Developing Career Readiness Skills – Core Literacy Practices:** Circle 2 describes the curricular elements that MCPS is implementing in all classrooms to develop students' ability to apply their knowledge to real life situations.
- **Expanding Project-based and Problem-based Learning:** The Committee heard earlier this year about the Project-based Learning program at Wheaton High School. On circle 3, MCPS describes its plans to expand this approach to other high schools, and also references a problem-based learning curriculum for Biology that is in the pilot phase this school year.

- **Career Pathways:** MCPS states on circle 3 that nearly 19,000 high school students participate in one of the career pathway programs. In addition to its current career pathway programs, MCPS is planning a new Homeland Security Program for the Thomas Edison High School of Technology. The Committee may want to ask MCPS to discuss further how the new Thomas Edison High School facility will be integrated into both the existing Career Pathways and the other college and career readiness strategies.
- **Business, Industry, and Higher Education Partnerships:** On circles 4-5, MCPS details its efforts to leverage business, industry, and higher education partnerships in three ways, including additional curricular input, internships and research projects, and externships for MCPS teachers, counselors, and staff.

Office of the Superintendent of Schools
MONTGOMERY COUNTY PUBLIC SCHOOLS
Rockville, Maryland

October 14, 2014

MEMORANDUM

To: Members of the Board of Education
From: Joshua P. Starr, Superintendent of Schools
Subject: Career Readiness

In fewer than 100 years, the nation has shifted from an agricultural, to industrial, to an informational economy. A number of factors—automation, globalization, and corporate changes—are reshaping current and future skill demands. Critical competencies for workers now include skills and knowledge acquired beyond a high school education, including content knowledge, literacy, and mathematic reasoning; and the ability to apply learning, think critically about information, solve novel problems, collaborate, create new products and processes, and adapt to change (Craig D. Jerald for the Center for Public Education, 2009). In *The Global Achievement Gap*, author Tony Wagner issues a strong call to action for educators to develop in their students the skills that matter most for work and learning, and to examine how this effort may be supported by a culture of innovation.

A Vision for 21st Century Readiness

Montgomery County Public Schools' (MCPS) vision for 21st century college and career readiness¹ is to increase the number of options a student may have upon graduation. We will realize our vision by offering equitable access to multiple pathways for success and by supporting students in their chosen pathways. Success upon high school graduation will be defined as—

- enrolling in credit-bearing college courses with no need for remediation,
- earning a living wage,
- entering the military,
- completing technical school,
- receiving industry training and certification,
- earning an associate's or bachelor's degree after graduation, and
- earning college credits or an associate's degree before graduation.

¹ From April 30, 2012, Montgomery County Board of Education Presentation

MCPS will increase these opportunities for all students through four key initiatives—the implementation of Career Readiness Skills in all curricular areas, the expansion of project-based and problem-based learning, renewed support for diverse career pathways, and expansion of externships for high school staff members. By continuing to support a strong academic foundation for all students and expanding experiences in the 21st century work environment, many more students will graduate with multiple opportunities for college and careers.

Developing Career Readiness Skills—Core Literacy Practices

Curriculum 2.0, the powerful MCPS curriculum for all elementary content areas, is organized in three categories—critical thinking, creative thinking, and academic success skills. These Thinking and Academic Success Skills are designed to provide our youngest learners with a strong foundation in all content areas and help prepare them for a life of learning. Likewise, the *Ten Middle School Improvement Framework Characteristics* identify the essential skills all students should develop across content areas to assure their success in high school. At the high school level, MCPS will develop the key 21st century skills of speaking, listening, reading, writing, and thinking as described in the Core Literacy Practices (Attachment A).

The Core Literacy Practices are written as observable behaviors that should be seen in every classroom and curricular experience in high school and are based on the Common Core State Standards and the work of the Organisation for Economic Co-operation and Development (OECD). Students who have mastered the Core Literacy Practices will have the skills and knowledge they need to meet and exceed the demands of the current and future workplace. They also will become lifelong learners and effective citizens, and be able to apply their knowledge to real-life situations. To implement these skills in all classrooms, MCPS will:

- Develop examples of the practices for each content area that include options to utilize technology in teaching and learning.
- Provide professional development for all school instructional leaders on the Core Literacy Practices.
- Provide resources and materials school instructional leaders may use to develop and monitor the practices at their school.
- Utilize the Partnership for Assessment of Readiness for College and Careers assessment and the OECD Test for Schools based on The Programme for International Student Assessment to measure students' ability to apply knowledge and think critically as compared to students in MCPS high schools, districts in Maryland, other states, and around the world.

Expanding Project-based and Problem-based Learning

During the last two years, schools and central services teams have been exploring two innovative instructional approaches—project-based learning and problem-based learning—which provide students with authentic career-based experiences. “Project-based Learning refers to students

designing, planning, and carrying out an extended project that produces a publicly exhibited output such as a product, publication, or presentation.”² Problem-based learning tends to be more teacher directed, but also focuses on students developing their mastery of the subject matter by solving a real-life problem. In both instances, project-based and problem-based, students learn the same material and must reach the same high curriculum standards as in the traditional classroom setting, but they approach topics from a problem solving, inquiry approach. This difference in approach engages students and provides a better approximation of the 21st century work environment.

Wheaton High School has developed a successful approach to Project-based Learning (PBL) during the last two years and best practices are ready to be shared with other schools. The Science, Technology, and Engineering (STE) team in the Department of Curriculum and Instruction has developed and implemented a well-received problem-based approach to all curriculum at the middle school level. The STE team is piloting a problem-based approach in a new unit in Biology this year, the first MCPS course with a high stakes graduation assessment to try this approach. To continue to push innovative curriculum and instruction to more schools, the following steps will be taken to expand PBL:

- Continue the professional development and refinement of PBL at Wheaton High School.
- Identify a recommended pathway and best practices for other high schools to expand project-based learning.
- Document current practices of project-based and problem-based learning across the district.
- Continue the rollout of the problem-based Biology curriculum as a model for expansion of PBL models to other high schools. Pilot this year with the full rollout next year.
- Conduct an Office of Shared Accountability study about the effectiveness of the problem-based learning approach in Biology and make recommendations for successful implementation in all units of Biology in the 2015–2016 school year.
- Pilot problem-based and project-based materials and exemplars in the revision of National, State, and Local Government this school year.

Career Pathways

Career pathways are designed to make learning contextual for students and to provide them with varied opportunities for career exploration and practical experiences. MCPS offers the following career pathway options—Foundations, Career and Technology Education (CTE), Academies, and Signature Programs. Students enrolled in Foundations and CTE complete courses that provide technical training and lead to industry certifications in areas such as health and wellness, automotive, and hospitality. Students who participate in either an academy or signature program explore a specific career focus or theme in a smaller learning community such as information technology, engineering, arts and humanities, or science and media. Nearly 19,000 high school students participate in one of the career pathways. These pathways conclude with a capstone experience that could be an internship, a college-credit bearing course, research project

² The Teacher’s Guide to Project-based Learning, Innovation Unit, 2011

presentations, or another culminating activity. In addition, MCPS is working to enhance pathway program options through the new Middle College programs at Northwest and Northwood high schools and the new Homeland Security Program planned for Thomas Edison High School of Technology.

While career pathways have been successful, several challenges and areas of growth exist. With multiple career pathway options, MCPS must ensure our programs include the content and skills needed and required for success in the 21st century. Additionally, through our Baldrige approach to continuous improvement, system processes need to be created and revised to foster the development of new programs, measure the outcomes of existing programs, and/or eliminate programs that are not aligned to district priorities or that are not meeting student needs. MCPS will address these concerns through the following outcomes:

- Create processes for evaluating career pathway programs in order to yield data on which programs should be revised, expanded, or eliminated based on student need and performance.
- Develop common definitions of career pathway programs and streamline names where applicable.
- Revise guidelines and processes for the development of new programs.

Business, Industry, and Higher Education Partnerships

Partnerships with business, industry, and higher education are a key strategy to ensure that our students are career and college ready. There are three components to our work with these partners. First, we will leverage industry expertise to provide feedback on our curriculum and instructional program. Currently, we receive input and feedback on our CTE curriculum and instruction through groups such as the Student Foundations Office and the Montgomery County Collaboration Board. In addition, our development of project-based learning was informed by an advisory board at Wheaton High School, which helped to direct and refine our project-based learning initiative. We will expand these types of advisory opportunities to other content areas including mathematics and science. Second, MCPS will work with industry and higher education partners to redefine capstone experiences, including internships and research projects, to ensure these experiences are based on the latest workforce and higher education demands.

Finally, staff will work with industry partners to expand staff externship experiences. Industry externships help educators gain a greater understanding of the business world, offer opportunities to enhance their knowledge and skills regarding the application of academic concepts and their relevancy to the workplace, and provide a better understanding of the careers available to Montgomery County's youth. MCPS will work with our business partners to enhance and expand staff members' knowledge and understanding of various careers they may use in student counseling and in curriculum and instruction through externship experiences.

MCPS, in collaboration with the Montgomery County Workforce Investment Board, has piloted a new program designed to provide school guidance counselors with firsthand observations at companies that are in the allied health sector. The program results in educators enhancing their knowledge of private-sector careers, thereby expanding their ability to offer real-world-based guidance to help students explore and make career decisions. In addition, the program creates ongoing opportunities for business partners to directly connect with students in school and community settings. MCPS will grow this program to include counselors, teachers, and administrators. Business, industry, and higher education partnerships will be enhanced and expanded through the following program outcomes:

- Expand business and industry input and feedback on curriculum and instructional programs.
- Redefine capstone opportunities to ensure these experiences are based on the latest workforce and higher education demands.
- Increase partnerships with companies to offer business-related externships for staff members.
- Enhance participants' knowledge, skills, and understanding of the business environment to improve their ability to support and guide students in career exploration and decision making.
- Identify strategies for participants to increase relevancy and real-world applications in curriculum and instruction through their workplace experience.

Next Steps

To move our district to the next level in our approach to career readiness, MCPS must find new ways to innovate and engage our students, staff members, and community in our work to enhance and improve teaching and learning. This new approach includes the engagement of our business, nonprofit, governmental, and higher education partners to facilitate and leverage external resources to support two-way communication and explicit connections to our improvement efforts. Staff members in the offices of School Support and Improvement, the Chief Academic Officer, and the Office of the Chief Operating Officer will be working collaboratively to finalize the draft action plan (Attachment B). The four primary strategies in our career readiness plan are tightly connected and fulfill the vision of our strategic planning framework that include academic excellence, creative problem solving, social emotional learning, and organizational effectiveness. We believe that a focus on developing career readiness skills, expanding problem-based and project-based learning, career pathways, and staff externships are key leverage points to ensuring that all MCPS graduates have the knowledge and skills they need to be successful in their future careers and to serve as productive members of society.

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Attachments

**Montgomery County Public Schools
Core Literacy Practices**

The Core Literacy Practices listed here are stated in terms of observable student behaviors that apply to all content areas and have taken the place of observable behaviors on the updated Literacy Observation Tool.

These practices are not intended to replace content standards but rather to help students deepen their understanding of content by developing their skill in using language to communicate their thinking. These practices are based on language and ideas from the Common Core State Standards, especially from the “capacities of literate individuals” described in the English Language Arts Introduction, the Standards for Mathematical Practice, and the College and Career Readiness Anchor Standards for literacy.

Students are engaged in learning that develops literacy when they are—

Making meaning to deepen understanding by—

- Reading and discussing a wide variety of complex texts*
- Citing, analyzing, and evaluating evidence to support claims
- Reading and listening with a clear purpose to comprehend and critique ideas
- Asking relevant questions and using resources to clarify thinking
- Analyzing patterns of evidence to draw conclusions

Using language to communicate their thinking by—

- Constructing arguments and explanations using clear evidence and reasoning
- Discussing evidence and claims to explore multiple perspectives and approaches
- Synthesizing information from multiple sources into new ideas and products
- Presenting interpretations and ideas in a variety of formats
- Developing precision with their use of academic language

*Complex texts include all sources of authentic information used within a content discipline. These sources may include pictures, maps, graphs, music, data charts, mathematical expressions, primary sources, works of art, reports, performances, poems, essays, posters, and many others.

**Montgomery County Public Schools
Implementation Timeline**

| Strategy | Window/ Completion Date |
|---|------------------------------------|
| Developing Career Readiness Skills—Core Literacy Practices | |
| Develop examples of the practices for each content area that include options to utilize technology in teaching and learning. | August 2015 |
| Provide professional development for all school instructional leaders on the Core Literacy Practices. | Summer 2015 |
| Provide resources and materials school instructional leaders may use to develop and monitor the practices at their school. | Summer 2015 |
| Utilize the Partnership for Assessment of Readiness for College and Careers assessment and The Programme for International Student Assessment to measure students' ability to apply knowledge and think critically as compared to students in MCPS high schools, districts in Maryland, other states, and around the world. | Spring 2015 |
| Expanding Project-based and Problem-based Learning | |
| Continue the professional development and refinement of Project-based Learning (PBL) at Wheaton High School. | Ongoing |
| Identify a recommended pathway and best practices for other high schools to expand project-based learning. | 2014–2015 |
| Document current practices of project-based and problem-based learning across the district. | 2014–2015 |
| Continue rollout of the problem-based Biology curriculum as a model for expansion PBL models to other high schools. Pilot this year with the full rollout next year. | 2014–2016 |
| Conduct an Office of Shared Accountability study of the effectiveness of the problem-based learning approach in Biology and make recommendations for successful implementation in all units of Biology in the 2015–2016 school year. | 2014–2016 |
| Pilot problem-based and project-based materials and exemplars in the revision of National, State, and Local Government this school year. | 2014–2015 |
| Career Pathways | |
| Create processes for evaluating career pathway programs in order to yield data on which programs should be revised, expanded, or eliminated based on student need and performance. | January 2015 |
| Develop common definitions of career pathway programs and streamline names where applicable. | June 2015 |
| Revise guidelines and processes for the development of new programs. | January 2015 |

| Strategy | Window/ Completion Date |
|--|----------------------------|
| Business, Industry, and Higher Education Partnerships | |
| Expand business and industry input and feedback on curriculum and instructional programs. | 2014–2015 |
| Redefine capstone opportunities to ensure these experiences are based on the latest workforce and higher education demands. | 2014–2016 |
| Increase partnerships with companies to offer business-related externships for staff members. | 2014–2016 |
| Enhance participants’ knowledge, skills, and understanding of the business environment to improve their ability to support and guide students in career exploration and decision making. | 2015–2016 |
| Identify strategies for participants to increase relevancy and real-world applications in curriculum and instruction through their workplace experience. | 2015–2016 |

