



**Curriculum Management Systems Consortium
A Partnership to
Improve Student Outcomes**

**Curriculum Management Systems, exciting new tools or more expensive stuff?
Text version**

Slide 1:

**Linda Sweeting, Grant Coordinator
Information Technology Specialist, Department of Instructional Technology, Prince
George's County Public Schools**

The PowerPoint version is available at: http://www.pgcps.org/~support/necc_cmhc.mht

It is best viewed with Internet Explorer 6.0+

The text only version is available at: http://www.pgcps.org/~support/necc_cmhc_text.pdf

Goal

Establish a multidimensional curriculum management implementation model. It is our premise that a robust, well implemented curriculum management system will improve student achievement through the transparent integration of technology tools and digital content that are aligned to state standards.

Mission

The Curriculum Management Systems Consortium (CMSC) worked together to actualize the grant goal and accomplish all grant activities. The driving action was to improve the learning of our students in core content areas through all facets of the educational system with a focus on Mathematics and Reading/English Language Arts and the Voluntary State Curriculum (VSC).

This grant offered the consortium partners a strategic opportunity and essential funding to maintain collaborative activities, analyze student achievement with a focus on data-driven decision making, evaluate the use of curriculum management tools and provide professional development opportunities for selected teachers and administrators.

All CMSC activities were designed to develop tools or gather information that would be of use to any Maryland LEA who has interest in a curriculum management system (CMS) or tool.

Further, all activities align with the Maryland Teacher Technology Standards and the draft Maryland Teacher Professional Development Standards. During the life of this project, this powerful collaboration will impact over 600,000 public and nonpublic school students in the state of Maryland.

Funding for this activity was provided through an Ed Tech grant awarded by the Maryland State Department of Education.

Slide 2:

How do you *manage* curriculum?

Can your teachers:

- 🖨️ Utilize diagnostic and prescriptive assessments ... both paper/pencil and online?
- 🖨️ Develop appropriate teaching materials and find required resources ... at school and home?
- 🖨️ Quickly and easily maintain records and share student progress?

Why would your district need a systemic change agent like a curriculum management system?

The **Curriculum Management Systems Consortium (CMSC)** has determined that in addition to operating within the educational design and technology infrastructure, an effective CMS must have three inter-woven components:

1. **Assessment, Formative and Summative:** Prescriptive assessments to determine appropriate student placement and summative assessments to determine content mastery should be available in both online and paper/pencil format. Ideally the assessment component identifies instructional need and achievement and is linked to curriculum resources and data reporting requirements.
2. **Curriculum Warehouse/Curriculum Development:** Curriculum content should be available in digital format and searchable by Maryland Content Standards, subject and/or by grade level. A CMS should provide teachers tools to develop lesson plans and other instructional resources using the approved design model of the specific LEA. Ideally the curriculum warehouse and development component supports instruction and is linked to assessments and data reporting requirements.
3. **Record Keeping/Reporting:** Student assessment data must be quickly and easily available to appropriate teachers, administrators and parents at school and at home. This information should be organization in such a way to facilitate aggregating and desegregating data. Ideally the data reporting component provide data-driven decision opportunities for instruction, the curriculum warehouse and development component and the assessments component.

These components may be found in a single package or separate software solutions working in tandem.

What is the difference between a curriculum management system (CMS) and a learning management system (LMS)?

When the consortium first began there was a very distinct difference between the curriculum management tool (CMS) we describe and the eLearning portal (LMS) that was then in existence.

Today the lines between these two powerful change agents has blurred due to advances in technology and strategizing to better meet learning needs. At this time, both a CMS and LMS foster a collaborative learning community and provide many analogous functions.

Slide 3:

The Driving Action

Ten Maryland Local Education Agencies (LEAs) joined together, forming the Curriculum Management Systems Consortium (CMSC), with the goal of improving student achievement.

The CMSC has established these objectives:

- To improve student academic achievement through the use of technology in elementary and secondary schools.
- To assist every student – regardless of race, ethnicity, income, geographical location or disability – in becoming technology literate by the end of eighth grade
- To encourage the effective integration of technology resources and systems with professional development and curriculum development
- To promote research-based instructional methods that can be widely replicated.

We believe that these goals will best be accomplished via the transparent integration of technology tools and digital content aligned to Maryland state standards and the Voluntary State Curriculum (VSC).

These goals align with the 2005 targets detailed in *The Maryland Plan for Technology in Education 2002-2005*.

The partners are:

Allegany County Public Schools* <http://acps.allconet.org/>

Anne Arundel County Public Schools* <http://www.aacps.org/>

Baltimore City Public Schools* <http://www.bcps.k12.md.us/>

Dorchester County Public Schools <http://www.dcps.k12.md.us/>

Frederick County Public Schools** <http://www.fcps.org/>

Howard County Public Schools* <http://www.howard.k12.md.us/>

Montgomery County Public Schools* <http://mcps.k12.md.us/>

Prince George's County Public Schools, lead partner** <http://www.pgcps.org>

Washington County Public Schools** <http://www.wcboe.k12.md.us/>

Wicomico County Public Schools* <http://www.wcboe.org/>

*Returning Partner, Year Two; **returning Partner Year One and Two.

Slide 4:

Conceptualizing a Vision

We believe that increased student achievement can be accomplished through the transparent integration of technology tools and digital content aligned to Maryland state content standards and the Voluntary State Curriculum.

To assist our partners in achieving our goals, the CMSC established a multidimensional curriculum management implementation model (<http://www.pgcps.org/~cmsc>) and conceptualized a process to improve student achievement. We believe that the transparent integration of technology tools and digital content that is aligned to Maryland state content standards and the VSC will improve student achievement. It was determined that the use of curriculum management systems or tools could be effect achievement in classrooms statewide.

The driving action is to improve the learning of our students in core content areas with a focus on Mathematics and Reading/English Language Arts. During the life of this project, this powerful collaboration impacted over 600,000 public and nonpublic school students in the state of Maryland.

History:

Year One – Innovation, Investigation, and On-going Evaluation: Prince George's County Public Schools partnering with Baltimore County Public Schools, Frederick County Public Schools, and Washington County Public Schools, focused on establishing a multidimensional model to enhance instruction via technology tools that may be used in classrooms statewide to improve student learning in core content areas. This goal was addressed by employing three different objectives: (1) Identify the selection criteria or key elements in curriculum management systems. (2) Determine current practices as curriculum/content management tools are implemented in the four LEAs and provide a meaningful comparison between these products. (3) Develop and implement a multi-tiered evaluation plan to collect, analyze, and interpret data. These four partners were ideally suited to work together because each partner was at a different curriculum management system or tool implementation stage; consequently, each partner brought to the table a unique but complementary set of experiences that enriched the process and outcomes. Year One deliverables include the *Curriculum Management System Evaluation Rubric and Scoring Tool*.

Year Two – Implementation, Expansion, and On-going Evaluation: The CMSC continued to develop a conceptual framework, based on best practices and lessons learned, which facilitate implementing a CMS or curriculum management tool. The Consortium changed with six LEAs joining and one Year One partner retiring creating a total of nine partners. Prince George's County Public Schools partnered with Allegany County Public Schools, Anne Arundel County Public Schools, Baltimore City Public Schools, Frederick County Public Schools, Howard County Public School System, Montgomery County Public Schools, Washington County Public Schools, and Wicomico County Public Schools. Through monthly face-to-face meetings collegial interactions and sharing of ideas were quickly established. Year Two deliverables include the conceptualization on initial development of the *Implementation Process Timeline* and related tools such as the *Planning Committee Key Stakeholders Check-off* worksheet.

Year Three – Refinement and Institutionalization: CMSC added an additional partner, Dorchester County Public Schools, and all Year Two partners are returned bringing our numbers to ten. CMSC continued developing the vision and worked to actualize our goal and objectives. MSDE and Local Education Agencies (LEAs) statewide are at a critical juncture in considering curriculum management systems and tools; consequently, the work of the CMSC is most timely and takes on special import.

All documents and the deliverable can be found at <http://www.pgcps.org/~cmsc>

Slide 5:

What we learned ...

Those districts with a “culture of technology leadership” have better student academic performance.

- **Student computer ratio**
- **Percent of teachers at intermediate or higher computer use**
- **Integration of technology into instruction**
- **Internet use**
- **Content aligned to state standards**

Three of the four LEAs who met AYP in all areas are CMSC partners

Rigorous evaluation was conducted annually for the grant. In the spring of 2006, summative data on the activities of the ten partner Maryland Local Education Agencies (LEA) and their curriculum management initiatives was collected.

The evaluation process was challenging because each partner has a different CMS or curriculum tool and each LEA is at a different implementation stage. The evaluation process included interviews, focus groups, online surveys and collection of publicly available information for each partner’s math and reading MSA performance data (<http://www.mdk12.org/data/hsa/index.asp>) and other technology-related variables from the state Technology Inventory(<http://md.ontargetus.com/>), specifically: student to computer ratio, and percent of teachers at intermediate or higher computer use, Internet use, and integration of technology into instruction.

Because each system is different, it not possible to draw direct comparisons on most points. However, two questions did provide comparable responses:

1. Each LEA representative reported that they have aligned the curriculum in their CMS to the Voluntary State Curriculum.
2. Each LEA representative was asked how they believe their curriculum management initiative is affecting (or will affect) student learning. Two responses were common:
 1. Much less time is required for teachers to access and act on curriculum.
 2. Record keeping allows for quick access to student assessment data, and thus timely interventions.

It was learned:

In 2003-04, the following have statistically significant positive correlations with both math and reading:

- CMS Implementation
- Percent of teachers at intermediate or higher technology integration into instruction

In 2004-05, the following have statistically significant positive correlations with both math and reading:

- Student to computer ratio
- Percent of teachers at intermediate or higher technology integration into instruction

Additionally, in 2004-05, CMS implementation was significantly correlated with reading performance only (not math)

While the results are not causal; it can not be quantified that having a well implemented CMS will lead to better performance in reading and math. However, the results do suggest those districts with a “culture of technology leadership” have better student achievement. Better student academic performance is seen in the LEAs that place more emphasis on technology investments and use in schools.

This information was compiled from the final evaluation report provided by the grant evaluator.

Slide 6:

Implementation - everyone has the same issues ... but require different solutions

Curriculum Management System Implementation Planning Resource:

<http://www.pgcps.org/~cmcs>

Implementation is an ongoing process. Implementation makes or breaks the success of the CMS or tool. Partner experience has illustrated that skilled, motivated dedicated staff enables success of even outdated systems. CMSs are powerful systemic change agents.

The CMSC has determined that there are identifiable milestones in the implementation process:

- Needs assessment
- Planning/innovation committee established
- Decision made
- Planning
- Selection process
- Adoption
- Implementation
- Midpoint
- Actualization
- Maintenance
- Summative Evaluation
- Renew and refresh

Ongoing evaluation of the CMS by the key stakeholders is critical in ensuring and maintaining success.

Slide 7:

How can the puzzle fit together?

- **Involve key stakeholders**
- **Identify needs**
- **Establish goals**
- **Determine required outcomes**
- **Dedicate resources**
- **Plan systemically for implementation & maintenance**

One Solution or Many?

Technology is a powerful change agent and CMSs are no exception. Today’s realities were not even a possibility yesterday. Curriculum Management decisions will have systemic impact, consequently everyone the system impacts should be involved in the decision making.

Technology is constantly changing. When CMSC grant activities were first starting there was a significant difference between Learning Management Systems and Curriculum Management Systems. Today they are virtually indistinguishable and the terms are used synonymously.

Partner experience and scholarly input supports that the following points are critical when selecting and implementing a curriculum management system:

- Involve key stakeholders: staff from many different departments or divisions, including accountability, instruction, IT, curriculum, school based administrators, teachers, parents and any other groups that the CMS will touch.
- Identify needs: why do you want a CMS?
- Establish goals: what do you want the CMS to do?
- Determine required outcomes: what will the CMS accomplish if successful?
- Dedicate resources: a CMS will need the support of funding, technology and staff.
- Plan systemically for implementation & maintenance: implementation is a system wide process.

A CMS has multiple components to meet multiple needs. It should be flexible in design so can change when technology or needs change!

Slide 8:

One solution or many?

- **Funding**
- **Staff**
- **Infrastructure**
- **Interoperability**
- **Communication**
- **Professional development**

Decisions should be based on needs and goals!

Technology is in constant change. Further, systemic needs and goals change. This is driven both by changes in both the local leadership and the state education agency. However, the driving action of improving student achievement remains constant. When implementing a CMS it is easy to lose the focus on improving student achievement.

Because each partner LEA had unique needs and differing student populations, the CMSC determined it is was not appropriate to recommend one specific CMS. Rather, the CMSC has created an Implementation Planning Resource with multiple tools. One such tool is an evaluative tool, the *Evaluation Rubric for Selecting a Curriculum Management System*. This rubric will assist LEAs in selecting the best product or products to meet specific needs. To maximize the success of a selected CMS or curriculum tool decisions should be needs based.

As defined in Slide 2, there are three inter-woven components of a Curriculum Management System:

1. Assessment, formative and summative
2. Curriculum Warehouse/Curriculum Development
3. Record Keeping/Reporting

The three CMS components are each affected, both independently and collectively, by these four considerations:

1. Academic Considerations: content alignment, content flexibility and pedagogy.
2. Software Effectiveness: software interface and support of the instructional process.
3. Technology Requirements: technical specifications, infrastructure requirements, interoperability ,and compliance issues.
4. Implementation and Other Points: process involved with the realization and maintenance of the CMS, systemic needs and considerations, and vendor assurances.

The components and considerations are examined in the Terms Defined, Key Components documentation: <http://www.pgcps.org/~cmsc/docs/0KeyComponents.doc> this document is also in PDF format; links can be found on the Curriculum Management System Definition page: <http://www.pgcps.org/~cmsc/definition.htm>.

A Rubric that includes evaluative criteria for these components and considerations can be found at: <http://www.pgcps.org/~cmsc/selection.htm>

Slide 9:

Flexibility is key!

An effective CMS should provide choices to meet identified needs and goals:

- **Curriculum**
- **Assessment**
- **Data**
- **Instruction**
- **Diverse learner needs**
- **Technology**

Change happens!

A tangram is a seven piece puzzle that has multiple solutions. As the CMSC partners began working together we discovered that everyone had similar “puzzle pieces”. However one size did not “fit” all; a single curriculum management system would not work for every district. We learned that each partner must solve the puzzle differently to meet the unique needs of the respective district. Unlike the more familiar jigsaw puzzle that has a single solution, the ancient Chinese puzzle, the tangram, is a seven piece puzzle that has multiple solutions. We used the tangram image to remind us that we need to be creative when resolving to improve student achievement.

An effective CMS should provide flexible options to meet curriculum development, content warehousing, assessment management, achievement reporting, instructional delivery and diverse learner needs for the school system and continue to meet those needs in a changing environment.

To be effective the technology supporting the CMS must be user friendly and the staff must be well trained to use it.

Professional development must be ongoing and sustained; supporting the needs throughout all stages the CMS implementation.

Slide 10:

Conclusion

- **Curriculum Management Systems or tools can provide significant advantages**
- **These tools, if well implemented and integrated into instruction, have a positive impact on student achievement.**

All public information is published at: <http://www.pgcps.org/~support/cmssc.html>

Future Directions

Curriculum Management Systems or tools can provide significant advantages in working with:

- the Maryland Content Standards
- Voluntary State Curriculum
- data reporting mandates
- efficiently providing data-driven decision making opportunities for the classroom.

Our evaluation results suggest that these tools, if well implemented and integrated in the instructional process, have a positive impact on student achievement in core content areas specifically mathematics and reading.

The rapidly growing interest in these tools underscores the need to continue to facilitate the effective implementation, ongoing integration and support of these tools for all interested LEAs and non-public schools.

Slide 10:

Questions?

Please contact Linda Sweeting: sweeting@pgcps.org if you have questions about the Curriculum Management Systems Consortium or if you have difficulty accessing any publicly available materials including this PowerPoint.

All public information is published at: <http://www.pgcps.org/~support/cmssc.html>

The grant deliverable, the online interactive Curriculum Management System Implementation Planning Resource, is available at: <http://www.pgcps.org/~cmssc>