

Developing Curriculum: Considerations and Applications

A Resource for Missouri Educators and Administrators

July 2016

The curriculum, which includes coursework, co-curricular activities and other school-approved educational experiences, is the school's formal plan to fulfill its mission statement and expectations for student learning. The curriculum links the school's beliefs, its expectations for student learning and its instructional practices. The strength of that link is dependent upon the professional staff's commitment to and involvement in a comprehensive, ongoing review of the curriculum.

Commission on Public Secondary Schools, 2005, p.4

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What this document provides:

- *assistance to districts in planning, writing, revising and implementing curriculum*
- *the components of a sound curricular document*

SUMMARY: No one document can serve as a panacea for all. That is true of this document. Some districts, starting at ground zero, need more direction. Yet, other districts have well-developed curricula and need only to monitor, evaluate and update their implementation. While nearly every district will find something useful, every district will not need all of this document. Although State Statute 160.514.1 RSMO requires “. . . each school district in the state shall adopt or develop a written curriculum designed to ensure that students attain the knowledge, skills and competencies established pursuant to subsection 1 of this section,” this document is not a prescription; it simply offers guidance.

A district’s curriculum will not contain everything a teacher will say and do in a classroom. The district curriculum should include those items all teachers are expected to implement, administrators will monitor and district curriculum writers will evaluate. A district may opt to include additional information in its curriculum; however, these items should be clearly identified as optional or suggested. A district curriculum delineates those required elements of instruction purposefully tracked throughout the school year. All the other elements of instruction are left to the professionalism of the individual teacher.

This document was developed to assist districts as they create a written curriculum. Curriculum writers should cautiously build a viable document based on the needs, challenges and abilities of their students, staff and communities. A district curriculum is a living document that one must continually implement, monitor, evaluate and update. It is incumbent upon districts to create a manageable curriculum which is both reflective of their community’s needs and aligned to state learning expectations.

Introduction

To accomplish great things, we must not only act, but also dream; not only plan, but also believe.

Anatole France, 1896

What is curriculum?

Curriculum is a design plan for learning that requires the purposeful and proactive organization, sequencing and management of the interactions among the teacher, the students and the standards we want students to acquire (Mishra, 2011).

It is the curriculum that provides both the plans for learning and the actual delivery of those plans. To ensure the written curriculum matches what teachers teach and students learn, we must consider three categories of curriculum (Marzano, 2003) including:

Intended or Written Curriculum is the curriculum produced by a school district and includes state standards, district scope and sequence charts, teacher planning documents and curricular units of instruction. This curriculum may be called an “official curriculum” because it is an effort to guide the instructional program of the school district to help assure that district policy is implemented in the classroom.

Implemented or Taught Curriculum is the curriculum teachers establish through lesson plans. Ideally, the implemented curriculum and written curriculum have a high correlation. While daily lesson plans are generally not part of the school’s written curriculum, alignment of lessons to the standards ensures the implemented curriculum and intended or written curriculum align. The curriculum should have a strong influence over the resources selected and developed for both the instructional programs and assessments.

Attained or Learned Curriculum is what might be considered the “bottom-line” because it is the curriculum students actually learn at school as measured by formative and summative assessments. Student proficiency on assessments aligned to the standards indicates successful implementation of both written and taught curricula.

... reinventing the embodiment of schooling—the curriculum—in a way that meets school goals and undercuts our habit of thinking of “teaching” as “covering content.”

Wiggins and McTighe, 2007

Auto mechanics perform alignments by lining up the direction of the wheels so the vehicle is pointed in a straight line. Curriculum alignment follows the same principle, with the "wheels" being curriculum, instruction, standards and assessment. Research indicates this kind of alignment can point a school or district toward improved student achievement.

District Administration, July 2004

Why create a curriculum?

While creating a guaranteed, rigorous and viable curriculum is best practice and pedagogically sound, external motivators must be taken under consideration:

- MSIP requirements
- graduation requirements as dictated by College and Career Readiness
- teacher evaluation
- state statute
- consistency and coherence both vertically and horizontally, allowing for better data analysis
- equity for all groups
- common assessments which lead to more effective data gathering

Why should curriculum align to Missouri Learning Standards?

There are sound educational reasons why districts should align their written curricula to the Missouri Learning Standards. Alignment provides consistency across buildings, districts, and the state. The standards build upon one another, creating rigor and cohesion across grade levels as well as scaffolding students' learning to ensure they are college and career ready. Additionally, the state assessments are written to the current learning standards.

RESOURCES/SAMPLES

Larry Ainsworth. 2011. *Rigorous Curriculum Design: How to Create Curricular Units of Study that Align Standards, Instruction, and Assessment*. Englewood, CO: Leadership and Learning Center.

Center for Applied Special Technology. 2014. "About UDL." <http://www.cast.org/udl/>

Allan Glatthorn. 1994. *Developing a Quality Curriculum*. Alexandria, VA: ASCD.

Heidi Hayes-Jacobs. 2009. *The Curriculum Mapping Planner Templates, Tools, and Resources for Effective Professional Development*. Alexandria, VA: ASCD.

Robert J. Marzano, Phil Warrick and Julia A. Simms. 2014. *A Handbook for High Reliability Schools: The Next Step in School Reform*. Bloomington, IN: Marzano Research Laboratory.

Jay McTighe and Grant Wiggins. 2013. *Essential Questions: Opening Doors to Student Understanding*. Alexandria, VA: ASCD.

Nancy Mooney and Ann Mausbach. 2008. *Align the Design*. Alexandria, VA: ASCD.

Planning

A prerequisite to designing curriculum in any content area, course or grade level is a thoughtfully established district vision. The vision establishes the end goal. Once the vision is in place, a solid plan determining participants, the time line, the shape and the scope of the written curricula can be determined.

Vertical Planning For a Content Area

Who should be involved in the process?

To begin, involve those who are responsible for implementing the curriculum. This will likely be educators who possess a personal knowledge of the district's students and the focus content, have a feel for scope and sequence and have likely developed curricula in the past.

- teachers
 - both content and cross-content
 - all grade-levels (Pre-K-12)
- district instructional staff—coaches, curriculum coordinators
- special education, ELL, migrant, gifted, Mo-Options staff
- administrators

As the curriculum evolves, others will need to both consult and review the content of the curriculum. Although these individuals may not have the educational attributes of the above group, their ongoing input and final review can generate a smooth transition and improve the likelihood of a successful implementation.

- community members
- industry leaders/experts
- parents
- board of education members

What should a district content-area curriculum include?

Once the vision has been written, committees established and time-frame fixed, the district should begin with a thorough review of documents and professional learning.

- Current K-12 Missouri Learning Standards note: Districts may adopt a set of standards other than the Missouri Learning Standards for a variety of reasons. While this may be a legitimate

A vision is your school's goal—where you hope to see it in the future. The mission provides an overview of the steps planned to achieve that future. A vision is concise and easy to recall.

Gabriel and Farmer, 2009

choice, districts must consider future state assessments in weighing that option and then be sure to align their curriculum with MSIP requirements in their district implementation plan.

- Graduation Plan/Handbook—In 2006, the State Board of Education increased minimum graduation requirements. Those requirements, found on the DESE website,

As the plan further develops, consider the following:

- What are underlying beliefs about learning that will be encompassed in the curriculum?
- What is the end goal of our curriculum? (expected performance)
- How will students perform to demonstrate mastery of content?
- What will classroom instruction need to look like in order to reach the end goal?
- What are big ideas that anchor curriculum and help frame the content?
- What are the accompanying tasks that support the core understandings?

(<http://dese.mo.gov/quality-schools/graduation-requirements>) outline which units of credit students must have successfully completed prior to graduation.

- Professional Learning—Teachers, administrators and other district staff will require professional learning that may include multiple elements. This may take as little as one day but may require more time depending upon the staff’s prior experiences and knowledge. Those familiar with Understanding by Design framework know it offers a planning process as well as a framework with which to build curriculum. A few resources may be helpful to curriculum developers:

RESOURCES/SAMPLES

Educational Broadcasting Corporation. 2004.

“Workshop: Assessment, Evaluation, Curriculum Redesign.”

<http://www.thirteen.org/edonline/concept2class/assessment/index.html>

Jay McTighe and Grant Wiggins. 2007. *Essential Questions: Opening Doors to Student Understanding*. Alexandria, VA: ASCD.

Jay McTighe and Grant Wiggins. 2005. *Understanding by Design*. Alexandria, VA: ASCD.

Jay McTighe and Grant Wiggins. 2011. “Understanding by Design Framework.” ASCD.

http://www.ascd.org/ASCD/pdf/siteASCD/publications/UbD_WhitePaper0312.pdf

- Standards Examination—This stage begins by identifying the big ideas of each standard related to learning, followed by developing unit goals to be covered over the course of the year and determining the content’s concepts and skills to be developed. These will become especially important in the Unit Planning stage of writing curriculum.
- K-12 Scope and Sequence or Vertical Alignment—During this part of the process, the team develops the scope (breadth and depth of content covered) *and* the sequence (order in which

content is presented) of a content area. In order to best precipitate this process, include in team discussions a K-12 list of courses that include course descriptions and a list of objectives that specify *when* objectives are introduced, focused, targeted for instruction, reinforced and assessed.

- District Assessment Plan—Although assessment plans are often stand-alone documents, understanding how curriculum and assessment tie together is vital if assessment is to be meaningful as a guide to instruction and a lynchpin of students’ academic progress. Take into consideration these facets of assessment:
 - common benchmark assessments
 - classroom diagnostic assessments
 - screening instruments
 - MAP testing
 - district writing plan

Course/Grade-level Planning

Using the information from the Vertical Planning phase, begin writing a course or grade-level plan. This plan should include course rationale (at all grade levels) and a course description; make sure standards taught at each grade level are on hand.

COURSE RATIONALE	COURSE DESCRIPTION	COURSE STANDARDS
<ul style="list-style-type: none"> ● Describes where the course fits into the student’s overall education 	<ul style="list-style-type: none"> ● Describes the general scope or overall concepts to be learned in the course 	<ul style="list-style-type: none"> ● Concisely describe educational objectives in written descriptions
<ul style="list-style-type: none"> ● Identifies why the course is important for students 	<ul style="list-style-type: none"> ● Identifies major areas of focus for the course (overview) 	<ul style="list-style-type: none"> ● Identify what students are expected to know and be able to do
<ul style="list-style-type: none"> ● Includes a statement of unified purpose across district for all teachers 	<ul style="list-style-type: none"> ● Summarizes yearly expectations 	<ul style="list-style-type: none"> ● Organized by content and sub-content and often sequenced by a progression followed throughout the academic year

Note: Course standards may reflect state, national or self-developed standards. For a multi-content or interdisciplinary course, standards may reflect multiple content areas.

Unit Development

Unit Planning

While Unit Planning sounds as if curriculum development is dropping to the lesson plan level, it is actually still taking an overview of a school year. Units are a larger component of the curriculum than the lesson. Lesson plans guide day-to-day instruction, whereas units often designate weeks or months of instruction. A unit plan begins with clustering standards arranged by a given combination of topics, skills or themes. The unit plan includes a high-level examination of content, instructional activities and the assessments taught in two- to six-week intervals. Unit plans typically include the following:

- subject/grade
- title of the unit of study
- unit type: topical, skill-based, thematic
- pacing
- standards covered

“Just as composers and conductors benefit from a shared understanding of different yet overlapping areas of expertise, teachers and curriculum developers can enhance each other’s areas of expertise.”

--Martin-Kniep and Uhrmacher, 1992

This is NOT a standards checklist; it is a purposeful, clustered integration of concepts, skills and/or ideas within a unit.

When creating a curriculum unit document, the standards for content and for practices may be listed for alignment purposes. The standards for content can be found in the 2016 Missouri Learning Standards (MLS) or other standards the district may review. This includes standards from outside educational organizations such as the NCTM, NCSS, NCTE, NSF, NSTA or other sources.

No matter the source of the standards, the content and practices must be clustered, integrated, spiraled and correlated when developing a unit and designing the formative and summative assessments and the instructional lessons. At this point in the development of a unit, a checklist indicating a standard has been “covered” or “instructed” does not satisfy accountability. College and Career Readiness and 21st Century Skills demand application of integrated concepts and skills. Ultimately, students must be taught to demonstrate reasoning, problem solving and communication. Only when students are assessed on their ability to independently transfer knowledge and skills into new and novel situations can we indicate whether or not a standard has been achieved. This is accomplished when the standards and skills within a curriculum unit are thoughtfully clustered and integrated for instruction and assessment.

A Quick Overview:

STEP 1: Essential Questions or Unit Goals

STEP 2: Assessments

- Summative (formal)
 - Unit Assessments
 - Pre-/Post-assessments
 - Scoring Guides/Answer Keys
 - Performance-Based Assessments
- Formative (informal)
 - Progress-Monitoring Checks

STEP 3: Activities and Tasks - Instructional Materials

- Research-Based Instructional Strategies
- Differentiation Strategies
 - Additional Support and Enrichment
 - Strategies for English Language Learners (ELL)
- Student Work Exemplars
- Scoring Guides

Step 1: Write Unit Essential Questions or Unit Goals

Why do we need essential questions?

Essential questions or unit goals may be thought of as fundamental or central ideas to be considered in a unit. They unify the elements of learning taking place over a block of time, and they focus instruction. Further, they help educators select which specific content to include and that which is unnecessary. These overarching goals keep us focused on inquiry as opposed to just “correct answers” on summative assessments. Essential questions or unit goals connect students’ experiences and interests to the intended learning of the content so they connect their new understandings to previous learning and then apply that new learning to new or novel contexts.

There are two types of essential questions: overarching and topical. Overarching questions are more general and promote transfer of understanding. Topical questions are unit specific and promote inquiry. Good teaching uses both types of questions.

Wiggins and McTighe, 2007

How do we develop essential questions or unit goals?

First, consider the focus of the unit. Essential questions may stem from students’ particular interests in a topic (What makes a video game “good?”), community resources (How does pollution impact the Missouri River?) or a topic suggested by the standards themselves (e.g. Where do waves come from?).

Essential questions or unit goals should be few in number; Wiggins and McTighe recommend no more than two to five per unit (121).

Then, examine the theme or concept in the curriculum to be addressed in broad terms. If a question is too specific or could be answered in a few words or a sentence, it is probably not an essential question.

Essential questions or goals

- *have no single obvious right answer*
- *raise other important questions, often across subject areas*
- *address the philosophical or conceptual foundations of a discipline*
- *are framed to provoke and sustain student interest*
- *point across units to larger, transferable ideas*
- *link a topic to other related topics and subjects*

An important point to remember is that the essential questions or unit goals included in a curricular unit must be implemented by all teachers of that course or content. These questions may be monitored and evaluated through professional learning communities and/or administration.

RESOURCES/SAMPLES:

Larry Ainsworth. 2011. *Rigorous Curriculum Design: How to Create Curricular Units of Study that Align Standards, Instruction, and Assessment*. Englewood, CO: Leadership and Learning Center.

Jay McTighe and Grant Wiggins. 2007. *Essential Questions: Opening Doors to Student Understanding*. Alexandria, VA: ASCD.

Step 2: Assessments

The most important thing about assessment is that it promotes dialogue among faculty.

Mary Senter, 2011

Well-designed curriculum includes both summative and formative assessments deliberately aligned to standards. Formative assessments collect information about student learning during instruction to inform a teacher's decisions while teaching a curricular unit. Summative assessments summarize what students have learned at the end of a unit of instruction. How an educator uses the results of an assessment determines whether a particular assessment is designated as *formative* (in process), *summative* (ended), or *both* (summative results are used formatively to diagnose student learning needs to address subsequently in other units of study).

Once unit standards are established and the essential questions written, the summative end-of-unit assessment can be developed. The unit's summative assessment items are deliberately aligned to the level of rigor, intent of the standard and unit goals.

Ask these questions of the unit's summative assessment:

- Does the end-of-unit assessment align to the previously identified unit standards?
- Is the assessment designed to elicit direct, observable evidence of a student's ability to independently demonstrate the major targeted grade- or course-level standards?
- Does the assessment include aligned rubrics that provide sufficient guidance for assessing student performance?

When creating the instruments to score student performance on assessments, a scoring guide for all items and a rubric for constructed-response and performance-based formats further flesh out the intended learning of the unit. The scoring guide, when purposefully written and implemented, enables educators and students alike to receive accurate feedback regarding student performance and understanding.

Similar to essential questions or unit goals, if the district has summative (but not necessarily the formative) assessments that are expected to be implemented by all course teachers, they will appear in the district curriculum.

After designing the end-of-unit assessment, one may opt to create a formative pre-assessment matched to the summative post-assessment. The curriculum's writers may opt to create a formative pre-assessment that is either *aligned* (same concepts and skills as post-assessment, but fewer questions) or *mirrored* (exact same number and type of questions as the post-assessment).

RESOURCES/SAMPLES:

Jan Chappuis, Rick Stiggins, Steve Chappuis and Judith Arter. 2011. *Classroom Assessment for Student Learning: Doing it Right-Using it Well* (2nd Edition). New York: Pearson Publishing.

Gage Kingsbury, Dylan Wiliam and Steven Wise. 2011. *Connecting the Dots: Formative, Interim and Summative Assessment*. Presented at the 11th Annual MARCES/MSDE Conference: University of Maryland.

W. James Popham. 2008. *Transformative Assessment*. Alexandria, VA: ASCD.

Step 3: Activities and Tasks

While one would not expect a district-level curriculum to plunge to the lesson plan level, there may be shared activities or tasks every teacher across a grade and/or content would be expected to replicate. The reasons for doing so are varied. An activity or task may be replicated across a school or district for the purpose of data collection, a means by which to compare data for a professional learning activity, or it may revolve around a shared learning event (for example, before visiting a local business, all fifth graders will complete an activity or task across all classrooms). Those activities which are expected to be shared across grades or content areas should appear in the district's written curriculum.

All activities (shared and stand-alone) are designed or implemented by the teacher to bring about or create the conditions for learning. *What do I want to achieve with this activity? How will I achieve my target? Which activity is best suited to achieving my targeted standard?* Some activities or tasks stimulate experiential learning; some promote conceptual thinking; others prompt students to analyze. Direct links between these activities and the intended learning objectives must be clearly articulated to students; furthermore, careful sequencing of activities must be established so that they build on, or contribute to, future learning.

Learner-centered teaching includes instruction of explicit skills, encourages students to reflect on what they are learning and how they are learning it, motivates learners by giving them control over the learning process and encourages collaboration. For a task to effectively accomplish each of these goals, its content, context and performance expectations should reflect the knowledge, values and experiences that are equally familiar and appropriate to all students; tap knowledge and skills that all students have had adequate time to acquire; and be as free as possible of cultural, ethnic and gender stereotypes.

When activities or tasks warrant district-level curricular attention, there are several components which must be monitored: research-based instructional strategies, differentiation strategies, scoring guides and the student work produced. Each will be discussed in some detail below.

Research-Based Instructional Strategies

Research-based instructional strategies, much like the catch phrase “best practices,” is a rather nebulous axiom that, it seems, depending upon the teacher, the administrator or other stakeholder can have wildly divergent definitions. To paraphrase Steve Zemelman in *Best Practice: Bringing Standards to Life in America’s Classrooms*, the term *best practice* is one we borrow from medicine, law and architecture. Just as we would insist our physician employ the best practices of his/her field based on contemporary research, we, too, must employ the most recent research in our field to best teach students (1).

It goes without saying that educators must have the most up-to-date information at their fingertips. This happens through a myriad of ways: shared book studies, focused professional learning and administration who themselves are current on educational research. The list below may offer a starting point; but much like the “newest” technology is only new until it’s replaced by something else, these best practices are current until newer research updates our thinking.

Resources for Research-Based Instructional Strategies

Larry Ainsworth. 2011. *Rigorous Curriculum Design: How to Create Curricular Units of Study that Align Standards, Instruction, and Assessment*. Englewood, CO: Leadership and Learning Center.

Ceri Dean, Elizabeth Toss Hubbell, Howard Pitler and BJ Stone. 2012. *Classroom Instruction that Works: Researched - Based Strategies for Increasing Student Achievement*. Alexandria, VA: ASCD.

John Hattie. 2009. *Visible Learning: A Synthesis of over 800 Meta-analyses Relating to Achievement*. New York, NY: Routledge.

Harvey F. Silver, Richard W. Strong and Matthew J. Perini. 2007. *The Strategic Teacher: An ASCD Study Guide for Selecting the Right Research-Based Strategy for Every Lesson*. Alexandria, VA: ASCD.

Steven Zemelman, Harvey "Smokey" Daniels and Arthur Hyde. 2012. *Best Practice: Bringing Standards to Life in America's Classrooms*. Portsmouth, NH: Heinemann.

DIFFERENTIATION STRATEGIES

The curriculum that includes differentiation strategies is one in which instruction is tailored to meet individual student needs. When examining how to differentiate instruction, one might consider any of the following: content, process, products and learning environment. There is a misunderstanding that only special-needs populations need differentiation. In truth, teachers should endeavor to meet the needs of all students through differentiation.

- Content – what the student needs to learn or how the student will get access to the information. Examples: using reading materials at varying readability levels; putting text materials on tape; presenting ideas through auditory and visual means; using reading buddies; meeting with small groups to re-teach an idea or skill for struggling learners or to extend the thinking or skills of advanced learners.
- Process – activities in which the student engages in order to make sense of or master the content. Examples: using tiered activities through which all learners work with the same important understandings and skills but proceed with different levels of support, challenge, or complexity; providing interest centers that encourage students to explore subsets of the class topic of particular interest to them; developing personal agendas (task lists written by the teacher and containing both in-common work for the whole class and work that addresses individual needs of learners) to be completed either during specified agenda time or as students complete other work early; offering manipulatives or other hands-on supports for students who need them; varying the length of time a student may take to complete a task in order to provide

additional support for a struggling learner or to encourage an advanced learner to pursue a topic in greater depth.

- Products – culminating projects that ask the student to rehearse, apply, and extend what he or she has learned in a unit. Examples: giving students options of how to express required learning; using rubrics that match and extend students' varied skills levels; allowing students to work alone or in small groups on their products; encouraging students to create their own product assignments as long as the assignments contain required elements.
- Learning environment – the way the classroom works and feels. Examples: making sure there are places in the room to work quietly and without distraction, as well as places that invite student collaboration; providing materials that reflect a variety of cultures and home settings; setting out clear guidelines for independent work that matches individual needs; developing routines that allow students to get help when teachers are busy with other students and cannot help them immediately; helping students understand that some learners need to move around to learn, while others do better sitting quietly (Tomlinson, 2014; Winebrenner, 2014).

When applicable, possibilities for differentiation should be incorporated into units of study in order to illustrate how various aspects of the unit can be adapted to meet a variety of academic needs. However, it should also be mentioned that differentiation is a way of teaching; it's not a program. It requires teachers to know their students well so they can provide each one with experiences and tasks that will improve the learning process (Robb, 2008).

Differentiated classrooms embody common sense . . . nonetheless; it can be difficult to achieve—as common sense often is.

Carol Ann Tomlinson, 2014

Resources:

Laura Robb. 2008. *Differentiated Reading Instruction: How to Teach Reading to Meet the Needs of Each Student*. New York, NY: Scholastic.

Carol Ann Tomlinson. 2014. *The Differentiated Classroom: Responding to the Needs of All Learners*. Alexandria, VA: ASCD.

Susan Winebrenner and Lisa M Kiss. 2014. *Teaching Kids with Learning Difficulties in Today's Classroom: How Every Teacher Can Help Struggling Students Succeed*. Minneapolis, MN: Free Spirit Publishing.

Rick Wormeli. 2006. *Fair Isn't Always Equal: Assessing & Grading in the Differentiated Classroom*. Portland, ME: Stenhouse Publishers.

STUDENT WORK EXEMPLARS

Through the use of student work samples, curriculum guides provide additional information to help teachers more effectively implement the curriculum. Work samples provide for anyone examining the district's curriculum an example of what one might realistically expect students of the district to

produce. A wide range of student work exemplars provide a specific context for both educators and students.

Student work samples will:

- provide examples of how to differentiate instruction and modify curriculum materials to meet the needs of high-performing and/or highly interested students as well as low-performing students;
- monitor children's progress;
- inform teaching and improve instruction;
- guide students when they set goals or self-assess.

*If you don't know
where you are
headed, you'll
probably end up
someplace else.*

Douglas J. Eder, 2012

SCORING GUIDES

Naturally, student work samples without the accompanying scoring guides used to measure the student's progress are virtually meaningless. The scoring guide provides the context for student learning and fleshes out what the curriculum purports to measure through a particular unit, assignment or series of assignments. Scoring guides not only aid the educator; they can be used instructionally to communicate to students the requirements of the assignments and the expected performance level, and they help students monitor their own growth and progress toward a learning target. For just such reasons, scoring guides should be shared with students as they are introduced to assignments or assessments.

According to the Carnegie Mellon University Eberly Center for Teaching Excellence and Educational Innovation (<http://www.cmu.edu/teaching/design/teach/rubrics.html>), effective rubrics include the following components:

- specific performance expectation for an assessed concept, skill, task
- explicit, descriptive set of criteria with specific descriptors of performance
- detailed and precise feedback to the student
- detailed and informative evaluation of student work

A Note about Lesson Plans

This resource does not include the development of lesson plans. That is appropriately left to individual districts. It bears mentioning, however, that some thought should be given to the pros and cons of having consistent lesson plans in a district. There are many designs that districts can use as resources.

- Madeline Hunter Elements of Effective Instruction
<http://coe.gcumedia.com/r/lessonPlanning/lesson.html>
- Sheltered Instruction, Observation Protocol
<http://coe.gcumedia.com/r/lessonPlanning/lesson.html>

- Understanding by Design
<http://coe.gcumedia.com/r/lessonPlanning/lesson.html>
- Teach21 Unit and Lesson Plan Templates and Design
<http://wvde.state.wv.us/teach21/>
- Google Docs Blank Lesson Plan Templates
<https://sites.google.com/site/iteachapps/google-docs/lesson-plan-templates>
- Microsoft Office Blank Lesson Plan Templates
<http://www.officetemplates.org/lesson-plan-templates.html>

EXEMPLARS and SAMPLES

There are many exemplars of curricula on the market. The list below is just a short sampling.

<http://www.udlcenter.org/implementation/examples>

<http://www.cast.org/index.html>

<http://www.thirteen.org/edonline/concept2class/assessment/index.html>

Implementation and Evaluation

The curriculum is written and the units planned. Now the hard work actually begins: the implementation, monitoring, evaluation and eventual updating of this freshly minted curriculum. This two-step process begins with implementation and continues with ongoing monitoring, evaluation and updating. The oft-used phrase “curriculum is truly never finished,” while cliché, is true. The curriculum as it is intended goes into practice; and through use, further research and even some trial and error, the final document gets tweaked and revamped and made more complete. Eventually, the whole process repeats.

Step 1: Implementation

The initial implementation of the curriculum can be viewed as a bit of a field test; it can be phased in or implemented all at once, depending upon the needs of the teachers, district and the preparedness of other stakeholders. One way in which a district might begin implementation is to consider this process, adapting as necessary to meet the district’s and community’s needs.

- Dedicate collaborative time for educators to review the newly developed curriculum documents to gain common familiarity of curricular expectations.
- Through the use of data teams, create a sequence of units based on instructional priorities, the resources at hand and a hierarchy of skills in the units.
- Based on the curriculum, develop lesson plans and put the lessons into practice and adjust subsequent instructional decisions and lesson development based on student responses.
- Throughout implementation of the units, use data teams to create common scoring expectations and a common implementation of the curriculum.

Once the curriculum is developed, before or while implementation begins, the administration and professional learning committee must consider the staff’s professional learning needs. Depending upon the staff level of involvement in the development of the curriculum and upon the background knowledge the staff possesses, the administrator may consider delaying implementation until the staff is prepared to begin implementation. A veteran staff may only need a quick refresher of professional learning before putting the new curriculum into place.

When deciding the level of professional learning needed, consider the suggestions from *Align the Design* in ways to best dovetail the administrator’s efforts with the district’s professional learning committee:

- Curriculum planning committee establishes and measures all professional learning efforts for the purpose of improving teaching and learning. The committee also institutes an administrative

structure that directly links curriculum and instruction to professional learning and the teacher's evaluation.

- Curriculum planning committee ensures that all building principals are an integral part of the district's professional learning activities which are designed to improve curricular and instructional implementation. The committee monitors the type and number of district and building professional learning events, sets annual priorities and implements the professional learning plan based on the perspective of the individual teacher.
- Curriculum planning committee makes connections between data and professional learning needs so professional learning expectations match the new curriculum.
- Curriculum planning committee makes sure all administrators and principals understand professional learning standards and are familiar with a wide variety of effective professional learning models. The planning committee negotiates the district's and building's roles in professional learning, and they help both parties divide the available funds accordingly.

Professional learning for administrators and teachers alike might include data team training, walk-through training and the development of "look fors." Professional development opportunities could also include Professional Learning Community training and LASW (Looking at Student Work) training as well as Critical Friends Protocols. Teachers, in particular, will be interested in learning more about the development and use of anchor papers as well as the development of common assessments and rubrics as they seek to improve their evaluation of student work.

Evaluating content rigor is an important element in this phase of the implementation process. Whether a PLC relies on Depth of Knowledge, revised Bloom's hierarchy, the Hess Cognitive Rigor matrix or some other diagnostic tool, the purpose is the same: to produce a valid, reliable analysis of the mental processing required of the student to demonstrate mastery of the standard.

During PLC and professional learning workdays, the following questions may be posed for discussion. Valuable information is derived from district teacher input to improve written curriculum, facilitate communication among staff and promote effective curriculum implementation.

- Did the curriculum facilitate the achievement of the intended student proficiency level?
- Which part of the curriculum worked well?
- Which part of the curriculum did not work well?
- Is there a strategy or lesson that one teacher implemented that increased student performance that could be implemented by all staff?
- Is the written curriculum easy to follow by other instructors, or should more detailed instructions be added for clarification?
- Are the DOK's appropriate for each grade level or course? How might the DOK's of the lessons and/or assessments be increased?
- Are there any new resources or technology that could be incorporated into the current curriculum?
- Is the curriculum vertically aligned to other grade levels and courses?

- Were a variety of strategies used in implementation and instruction?
- Did student data reveal a high rate of success in pre-assessments and/or post-assessments that would show the need for increased rigor in curriculum content?

Step 2: Monitor and Evaluate Curriculum Progress

The curriculum is written, the staff and community stakeholders alike are prepared and implementation is in progress. How does one decide if the curriculum is successful? What should the administrator monitor? How does one decide what about the curriculum needs tweaking and what requires a re-doubling of one's efforts? During the monitoring and evaluation phase, the district gathers information that informs district educators of the success of the curriculum and finally, during evaluation, addresses changes based on information (both quantitative and qualitative) that measures the effect of the curriculum. Technology has positively impacted the ability to update curriculum and maintain its viability. Lesson planning and notes on strategies that are more or less successful are immediately accessible. Technology is an integral part of a district's monitoring and revising of curriculum.

There are literally hundreds of elements that one might monitor at this step. Begin with a short list, and expand and change information gathered as you see needs or gaps. Start by monitoring essential questions. Do the instructional strategies and related activities support the essential questions? Then, monitor the anchor tasks (those lessons taught identically across all classes in a grade or course) created during unit planning. Some evidence (data) of student learning may come from these anchor tasks. Focus on the content priorities assessed by those identified anchor tasks. The anchor tasks should be intentional and reflect already identified content priorities based on the curricular big ideas or essential questions.

It is also important at this step to evaluate the appropriateness of the professional learning in order to support and increase teacher content knowledge. This need may emerge based on student achievement data. Further, monitor to insure that students and teachers have the necessary tools to support curriculum implementation. Additional needs for student or teacher resources may have been realized during implementation of the curriculum. It is important at this stage to monitor the vertical alignment of each content area's curriculum. Does something need to be moved? Does the content need to be developed in a different order (are some foundational skills needed before more abstract expectations, etc.)? Based on data, did the components of curriculum lead to student achievement using multiple measures (not just the state assessment)? If any component did not lead to student achievement, can changes be made to revise it, or should it be replaced by something else?

You may consider creating a trouble shooting guide to address some common curricular pitfalls (Wiggins and McTighe, *Schooling by Design*, 2007):

- difficult concepts for students to grasp
- predictable student misunderstandings
- common errors on skill performance assessments
- parts of curriculum where students get bored
- running out of instructional time before the unit or course is complete
- poor alignment of resource materials (e.g. textbooks) with goals
- variance in completion time among students (differentiating the curriculum)
- ELL students' and struggling students' ability to read the text

Much like the monitoring phase, the decision to gather data can be tricky. What shall one collect? What does one do with data once it's gathered? For certain, using a single source for data will provide a stilted view. When making that decision, consider the following:

- Multiple sources of data (Wiggins and McTighe, *Schooling by Design*, does a great job of explaining useful sources of data.)
 - External
 - State achievement tests
 - National achievement tests
 - School accreditation
 - Surveys of constituents
 - Internal
 - Local achievement tests
 - Student work
 - Teacher content knowledge
 - Grade distributions
 - Graduation/dropout rates
 - Surveys of students, teachers, administrators
 - Structured observations

Once you have a variety of useful data sources, then you must decide what clues the data provides. In, *Align the Design*, 2008, Mooney and Mausbach say these “look fors” include

- gains and losses across grade-levels and within grade-levels using multiple measures
- achievement levels based on both in-house and other commercial assessments the district might use

Over time (multiple years) the data evaluation will drill deeper, including uncovering multiyear trends from disaggregated data and more specific item analysis of local and standardized assessments.

Sample Schedule:

Year 1-English Language Arts

Year 2-Science and Mathematics

Year 3-Social Studies and Fine Arts

Year 4-Health and PE

Year 5-Practical Arts and Vocational Courses

As data is gathered, the team that originally developed the written curriculum should reconvene to include teachers (both those who sat on the development team and those who have taught the curriculum), district instructional staff, administration, community members and board members to examine the data from implementation and monitoring to assist in making decisions around evaluating and changing the curriculum. Pose these questions to the group:

To what extent does the curriculum

- incorporate established content standards, benchmarks performance indicators?
- frame the big ideas of content in terms of understandings and essential questions?
- include program and course level maps to show conceptual thoroughness?
- monitor anchor tasks or benchmark tasks created during unit planning?
- include common rubrics for benchmark assessments?
- include anchors (examples of student work) for benchmark assessments?
- include diagnostic and formative assessments specific to the targeted area?
- Provide suggested teaching protocols, learner resources and recommended support materials?
- communicate to the community of parents and stakeholders using public relations, newsletters, technology, etc?
- include course-specific or unit-specific troubleshooting guides?

In addition to this ongoing curriculum monitoring, each district should follow a district-wide agreed upon curriculum review and revision cycle. A time sequence should be in place to ensure that all areas of curriculum are scheduled for larger-scale revision.

Resources:

Heidi Hayes Jacobs. 2010. *Curriculum 21: Essential Education for a Changing World*. Alexandria, VA: ASCD.

Nancy Mooney and Ann Mausbach. 2008. *Align the Design: A Blueprint for School Improvement*. Alexandria, VA: ASCD.

Grant Wiggins and Jay McTighe. 2007. *Schooling by Design: Mission, Action, and Achievement*. Alexandria, VA: ASCD.

EXEMPLARS and SAMPLES: Below you will find a list of curriculum format and structure examples which can provide useful information to a curriculum design team as you implement and then monitor, evaluate and update your new curriculum. While this list is far from exhaustive, it provides an entry point for the ongoing work that is curriculum development. The first set includes samples with application in all content areas. The second set is tied to specific content areas.

<http://learningforward.org/docs/pdf/facilitatorguide.pdf>

<http://www.thirteen.org/edonline/concept2class/assessment/index.html>

<http://www.lasw.org/principles.html>

<http://www.ascd.org/publications/books/104011/chapters/Use-of-Curriculum-Mapping-to-Build-a-Learning-Community.aspx>

Social Studies:

<http://www.socialstudies.org/standards/introduction>

<http://www.socialstudies.org/system/files/c3/C3-Framework-for-Social-Studies.pdf>

Science

<http://www.nextgenscience.org/>

<http://www.csun.edu/science/ref/curriculum/reforms/nses/>

ELA

<http://www.ncte.org/library/NCTEFiles/Resources/Books/Sample/StandardsDoc.pdf>

<https://www.literacyworldwide.org/docs/default-source/resource-documents/standards-for-the-assessment-of-reading-and-writing.pdf?sfvrsn=6>

Mathematics

https://www.nctm.org/uploadedFiles/Standards_and_Positions/PSSM_ExecutiveSummary.pdf

<https://www.illustrativemathematics.org/about-us>