Design Principles for Learner-Centered Schools:

Improving Student Learning Through Differentiated Instruction

Hanne B. Mawhinney

Leslie Kee, Joe Manko, Shannon Bramblett Burke, Daria Buese, Alice Faber, Kmt Shockley, Anita Voelker

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SECTION I: Introduction

In this fifth volume of **Design Principles for Learner-Centered Schools,** we focus on research-based principles for differentiating instruction to support student learning for meaning. Our work in this volume continues to be guided by the Design Principles for Learner-Centered Schools and the Learner-Centered School Model that we developed in our previous volumes of Design Principles. We also draw a series of books on differentiated instruction by Carol Ann Tomlinson and her colleagues, and from the work of David H. Rose and Anne Meyer in **Universal Design for Learning: Teaching Every Student in the Digital Ag**e. As in previous volumes we present a set of principles and the strategies that teachers and principals can use to guide their efforts to differentiate instruction to improve student learning. Our descriptions of research-based evidence of practices are supported by examples from a series of articles in ASCD's **Educational Leadership** on differentiated instruction and on teaching for meaning and on doctoral dissertation research conducted by graduates of the University of Maryland. We illustrate these practices in Maryland schools.

> **What Does A Focus on Learning Require?**
> A school that focuses on learning constantly articulates its broad beliefs that all children can learn and that all children will learn. Its mission statement refers to the school community's specific position regarding how students learn and how teachers should teach. Resources, both material and human, are channeled into policies and practices that facilitate **student learning**.

Learner-Centered Principles for Differentiating Instruction

In this volume, as in previous volumes, we provide research-based guidance for schools designing strategies that deepen the focus on student learning based on the learner-centered approach to instruction identified by Karen Murphy and Patricia Alexander.

> **Learner Centered Principles of Instruction**
>
> **Karen Murphy and Patricia Alexander** identified five principles that should guide the design of instructional strategies to support student learning:
> - learning involves increasing students' knowledge base
> - motivation is a key factor in student learning
> - students learn by strategically processing new information
> - there are commonalities and differences in the way people learn an in the rate at which they learn
> - social contexts affect learning
>
> **The Learner-Centered Principles: Their Value for Teachers and Teaching.**

Creating a Systemic Context for Differentiating Instruction

We believe that the learner-centered principles outlined by Murphy and Alexander are best implemented in a systemic framework that is an essential building block in creating a learner-centered school. In outlining strategies to support differentiated instruction we recognize the importance of creating a learner-centered school. In our previous editions **we** showed

that learner-centered schools have particular organizational structures and cultures that promote student learning. We identified five principles to guide the design of learner-centered schools based on the findings that researchers at the Center for the Study of Teaching and Policy at the University of Washington used in developing their Leading for Learning Model.

In this edition we focus specifically on developing effective instructional strategies that build on student strengths that address the first two principles of the learner-centered school:

> **Schools should focus on learning and to do so they should build professional learning opportunities for teachers to develop professional qualities required to differentiate instruction.**

<table>
<tr><td>
What is a Learner-Centered School?
The work of administrators, faculty, and staff of the Learner-Centered School are guided by the following principles:

schools should focus on learning
schools should build professional learning opportunities
schools should engage the external environment to promote learning
school leadership should be distributed
there should be coherence in the school program.

<i>Leading for Learning Sourcebook:</i>
http://depts.washington.edu/ctpmail/PDFs/LforLSourcebook-02-03.pdf
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Differentiating Instruction to Build on Student Strengths

The theme of the September 2006 edition of **Educational Leadership** was differentiated instruction. The experts who contributed to the edition agreed that the most effective instructional strategies help students cultivate their strengths rather than "fix" their weaknesses. Although individual weaknesses are a fact of life, productive adults are those who have learned to develop their strengths in a way that compensates for weaknesses, these experts argued. They offer ways that teachers and principals can build student strengths by:

Learning how the mind works. . Pediatrician Dr. Mel Levine, cofounder of All Kinds of Minds, stresses that by learning about the particular brain functions that undergird student strengths and weaknesses, teachers develop effective instructional strategies.

Appreciating variations: Teaching to student strengths helps students see themselves and others positively and may even help them see that a topic that was previously boring to them can be interesting, authors Carol Ann Tomlinson and Jane Jarvis write (2006, p. 16).

Making relationships matter. According to a Public Agenda poll, 64 percent of high school students say that they would learn more if their teachers "personally cared about their students as people." (Scherer, 2006, p.7)

Defeating deficit thinking. Too often the impersonal, bureaucratic nature of school culture undercuts the teaching attitudes and behaviors that draw on student strengths. Lois Weiner writes about how teachers can reframe negative situations— whether it's a child's hyperactivity or a class's incivility—in ways that help students improve without being humiliated. (2006, p. 42).

Orchestrating multiple intelligences. Howard Gardner and colleagues suggest (2006, p. 22) the challenge for teachers is to design rich learning experiences so that students can perceive themselves as potentially smart in a number of ways.

Leading positively. Daniel Goleman counsels that if a principal wants to create an emotional climate that 'lifts all boats,' he or she must lead the group toward positive, empathetic social interactions (2006, p.76).

We agree with these experts, schools can make a difference in the learning opportunities of all students by differentiating instruction. We have previously shown some of these ways in other volumes of Design Principles for Learner Centered Schools available from the Digital Repository of the University of Maryland (DRUM). In this 2006 Learner Centered Schools Volume, we will refer to these authors and from our previous volumes as we outline the **Design Principles for Differentiating Instruction** that current research suggests improves student learning.

What is Differentiated Instruction?

We agree with researchers who describe differentiated instruction as occurring when teachers help students maximize their capacity as learners.

What do we know about student learning that supports differentiated instruction?

In their recent examination of design for learning to differentiate instruction, Tomlinson & McTighe (2006) make three assertions about student learning that we have also presented in previous reports:

We know that the meaning-making process is influenced by the student's prior understandings, interests, beliefs, how the student learns best, and the student's attitudes about self and school (National Research Council, 1990).

We also know that learning takes place most effectively in classrooms where knowledge is clearly and powerfully organized, students are highly active in the learning process, assessments are rich and varied, and students feel a sense of safety and connection (National Research Council, 1990; Wiggins & McTighe, 1998).

In addition, we know that motivation to learn increases when we feel a kinship with, interest in, or passion for what we are attempting to learn (Piaget, 1978). Further, we go about learning in a wide variety of ways, influenced by how our individual brains are wired, our culture, and our gender (Delpit, 1995; Gardner, 1983; Heath, 1983; Sternberg, 1985; Sullivan, 1993).

> For the latest research on learning, please see the on-line text *How People Learn: Brain, Mind, Experience, and School* at http://www.nap.edu/html/howpeople1/.

What a differentiated classroom looks like

Tomlinson and McTighe (2006) tell us that in a differentiated classroom, a number of things are going on in any given class period. Over time, all students' complete assignments individually and in small groups, and whole-group instruction occurs as well. Sometimes students select their group size and tasks, sometimes they are assigned. Sometimes the teacher establishes criteria for success, sometimes students do. Setting standards for success is often a collaborative process, because there are many different things happening, so that no one assignment defines "normal," and no one "sticks out." The teacher thinks and plans in terms of "multiple avenues to learning" for varied needs, rather than in terms of "normal" and "different." The goal for each student is maximum growth from his current "learning position." The goal of the teacher is coming to understand more and more about that learning position so that learning matches learner need. (Tomlinson & McTighe, 2006).

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Design for Learning Framework

In this report we use a Design for Learning Framework that integrates differentiated instruction with an orientation to alignment of standards, instruction and assessment. In this approach, teachers design their curriculum around the essential knowledge, understanding, and skill reflected in both the subjects they teach and the state and district content standards for that subject.

Why Focus on Differentiated Instruction in an Instructional Design Framework?

Standards establish the legitimate goals that we have for ensuring that each student has opportunities to learn content that will provide the backbone for present and future growth and development. State Superintendent Dr. Nancy S. Grasmick explains:

> "Maryland schools take very seriously the job of preparing students, offering more AP courses in high school and strengthened academic rigor at all levels," said **State Superintendent of Schools Nancy S. Grasmick.** "High standards and accountability pave the way for success for all of our students in whatever they plan to do after high school." (Measuring-Up-2004, Annapolis, MD, September 15, 2004)

At the same time we recognize that educators typically think of content standards and associated assessments of those standards as structuring their instruction to focus learning in specific areas. Viewed in this way they narrow and reduce the degrees of freedom that learners have to explore from diverse perspectives. At the extreme when used as narrowing instruction without accounting for learner diversity, content standards are viewed as highly suspect by many researchers.

These two "truths" about standards based instruction pose a challenge for educators who seek to differentiate instruction that we believe can be addressed by using instructional approaches such as the Understanding by Design approach described by Tomlinson and McTighe (2006).

> Beset by lists of content standards and accompanying "high-stakes" accountability tests, many educators sense that both teaching and learning have been redirected in ways that are potentially impoverishing for those who teach and those who learn. Educators need a model that acknowledges the centrality of standards but that also demonstrates how meaning and understanding can both emanate from and frame content standards so that young people develop powers of mind as well as accumulate an information base. For many educators, Understanding by Design addresses that need.
>
> **Tomlinson & McTighe (2006)**

Organization of This Report

Dr. Hanne B. Mawhinney, who is pleased to continue to show how the research-based principles developed in the previous volumes have been turned into effective practices, again edits this fifth volume of Design Principles for Learner-Centered Schools. As in past reports, we are proud to feature the research of a contributors who are recent graduates of the College of Education at the University of Maryland, College Park, **Dr. Shannon Bramblett- Burke, Dr. Daria Buese, Dr. Alice Faber, Dr. Kmt Shockley, and Dr. Anita Voelker.** A special thanks to current doctoral students, **Lesley Kee** for her excellent co-editorial work and contribution on using the Maryland Professional Development Planning Guide to develop professional development in differentiated instruction, and **Joe Manko** for his outline of differentiating instruction in social studies at Rosemont Elementary and Middle School, and for his outline of differentiating instruction with technology. We highlight the backgrounds of all of these contributors and provide contact information at the end of this volume.

We would like to thank the **Superintendent Harford County Public Schools** Dr*. Jackie Haas* for again providing support in preparing the CD ROM versions of this report*.* This report is intended to be a resource for schools seeking to develop high quality professional development for teachers to gain an understanding of research based strategies for scaffolding instruction to improve student learning.

Report Summary and Supporting CD ROM

Our report is presented in both hard copy and CD ROM versions. The CD ROM of this fifth volume of *Design Principles for Learner-Centered Schools* includes a) case studies of featured schools, b) expanded description of the professional development plan, c) extensions of strategies to differentiate instruction through technology, d) summaries of web based resources to support differentiated instruction, e) biographies of contributors

We have organized the report into the following sections:

Section I. Introduction

Section II. Why Differentiate Instruction

In this section we outline why teaching for meaning requires differentiation of instruction, and why principals must practice instructional leadership to support teachers.

Section III. Design Principles for Differentiating Instruction

In this section we outline design principles and associated strategies that researchers have found to best enhance the learning of diverse students. Complementing each principle are descriptions of

- Teacher strategies for differentiating instruction that address the principle;

- Principal actions to support the strategies and how they demonstrate Maryland Instructional Leadership Framework Outcomes.

- A section called "From Principle to Practice" which outlines examples of strategies for differentiating instruction used by Maryland educators in the two elementary and two middle schools featured in this report.

SECTION IV: Case Studies of Feature Schools:

Case studies of the following schools are provided in the CD ROM version of the report

Green Holly Elementary School, St. Mary's County Public Schools

  Mrs. Sherry L. Pinto, Principal

Havre de Grace Elementary School in Harford County Public Schools

  Mrs. Joyce Stevenson, Principal

Magnolia Middle School in Harford County Public Schools

  Mr. Joseph Mascari Principal, and **Mrs. June Clark**, Instructional Facilitator

Rosemont Elementary and Middle School, Baltimore City Public Schools

  Ms. Sandra Ashe, Principal and *Joe Manko*, Teacher.

SECTION V. Research Based Lessons in Differentiating Instruction

This section presents lessons in differentiating instruction drawn from recent research by graduates of the College of Education, University of Maryland that we have organized to respond to three questions:

1. *What can we learn about differentiating instruction from teachers?*

   Dr. Daria Buese: Lessons from Teachers

2. *What can we learn about differentiating instruction from students?*

   Dr. Shannon Bramblett- Burke: Lessons from Limited English Proficiency Students

   Dr. Alice Faber: Lessons from Maryland Youth Who Received Special Education Services

3. *What can we learn about organizational and cultural practices that support differentiated instruction?*

   Dr. Anita Voelker: Lessons in Differentiating Instruction in the School Library

   Dr. Kmt Shockley: Lessons from Africentric Education

   Joe Manko: Lessons in Differentiating Instruction in the Social Studies Classroom

SECTION VI: Technology Support in Differentiating Instruction

This section describes teacher strategies for integrating technology into practices of differentiating instruction, and the supporting actions that principals can take.

SECTION VII: Planning Professional Development in Differentiating Instruction

In showing educators how to turn principles to practices we are pleased to support the efforts of the Maryland State Department of Education by showing how the resources available from the Maryland School Improvement website can be used to design strategies in differentiating instruction, and how Maryland's Standards for Professional Development can help guide the design work of professional learning communities that are engaged in developing systemic approaches to differentiating instruction to improve student learning opportunities and outcomes across classes and grades. In this edition we suggest how the Maryland Instructional Leadership Planning Guide can be used to plan professional

development in differentiated instruction. In the CD ROM version we provide an extended example of the use of the Planning Guide for Differentiated Instruction

SECTION IX: References and Resources

These are provided in the CD ROM version of the report

SECTION X: Biographies of Contributors
These are provided in the CD ROM version of the report

SECTION II. Why Differentiate Instruction

Carol Ann Tomlinson (2005) who has studied and written extensively about differentiated instruction describes the following reasons that schools must differentiate instruction:

- The United States is becoming a nation of racial and ethnic minorities, rather than a nation with a majority race and multiple minorities. Classrooms mirror that ethnic, cultural, and linguistic diversity To be effective, teachers must take into account the student's language, economic status, background experience, and views of the world, all of which affect the child's learning.

- Most districts now include students with identified special education needs in general education classrooms. About 96% of teachers have students in their classroom who have been identified with a learning disability, according to the U.S. Department of Education (2001), and on average, have three to four students with Individualized Education Plans. In addition, most students identified as gifted spend the majority of their academic time in general education settings. Students in each of these populations (as well as students with multiple exceptionalities whose needs encompass both populations) require responsive instruction to develop to their full potential.

> *To learn more about reasons for differentiating instruction read*
>
> Carol Ann Tomlinson *Traveling the road to differentiation in staff development.* http://www.nsdc.org/library/publications/jsd/tomlinson264.cfm

- Tracking students by ability levels to address learner needs has not helped students achieve and has, in fact, resulted in lowered expectations for many students who could perform at a higher level if given appropriate opportunities to do so. An exception is advanced learners, who likely would suffer from being placed in more heterogeneous classrooms unless advanced learning opportunities were consistently available.

- The achievement gap between Caucasian students and many minority groups - including African-American, Hispanic, and Native American learners - is likely aggravated by tracking, which separates students perceived as lower performing from those perceived as higher performing

- Some experts also question the efficacy of special programs - such as those for students with learning disabilities and students with reading problems - in raising the achievement levels of students assigned to those programs

New Imperatives for Differentiating Instruction from Multiple Intelligences Research

New evidence from multiple intelligences research provides an additional dimension to the context that Tomlinson describes as providing compelling reasons for differentiating instruction. Howard Gardner and his colleagues continue to develop and interpret his theory of multiple intelligences. In the September 2006 edition of Education Leadership they discussed new evidence on the interactive and additive effects of multiple intelligences and the implications these have for how and what teachers do to support student learning. In this section of the report we outline key points that are elaborated in their article *Recognizing Neglected Strengths*. In Section VIII: Lessons from Research of this volume Joe Manko's provides an excellent description of how he has used Gardner's theory of multiple intelligences in his social studies classroom at Rosemont Elementary and Middle School in Baltimore City Public Schools (see p.). Here we outline some of new lessons that Gardner and his colleagues offer in differentiating instruction to address multiple intelligences.

What do we Know About Multiple Intelligences Today? Focus on Profiles

The greatest potential of a multiple intelligences approach to education grows from the concept of a **profile of intelligences**.

Each learner's intelligence profile consists of a combination of relative strengths and weaknesses among the different intelligences: linguistic, logical-mathematical, musical, spatial. bodily-kinesthetic, naturalistic, interpersonal, intrapersonal, and (at least provisionally") existential (Gardner, 2006)

Lessons in Profiling Students

- Most people have jagged profiles; they process some types of information better than other types.

Interaction:

- Intelligences are not isolated: they can interact with one another in an individual to yield a variety of outcomes.

Interference

- Intelligences may not always work in harmony; sometimes they create discord

Compensation.

- Sometimes one intelligence compensates for another

Enhancement.

- One intelligence may jump-start another.

Gardner's Multiple Intelligences

Linguistic. Ability to understand and use spoken and written communication. Ideal vocation: poet*

Logical-mathematical. Ability to understand and use logic and numerical symbols and operations. Ideal vocation: computer programmer.

Musical, Ability to understand and use such concepts as rhythm, pitch, melody, and harmony. Ideal vocation: composer.

Spatial. Ability to orient and manipulate three-dimensional space. Ideal vocation: architect.

Bodily-kinesthetic. Ability to coordinate physical movement. Ideal vocation: athlete.

Naturalistic. Ability to distinguish and categorize objects or phenomena in nature. Ideal vocation: zoologist.

Interpersonal. Ability to understand and interact well with other people. Ideal vocation: politician; salesperson.

Intrapersonal. Ability to understand and use one's thoughts, feelings, preferences, and interests. Ideal vocation: autobiographer; entrepreneur. (Although high intrapersonal intelligence should help in almost any job because of its role in self regulation, few paid positions reward a person solely for knowing himself or herself well.)

Existential. Ability to contemplate phenomena or questions beyond sensory data, such as the infinite and infinitesimal. Ideal vocation: cosmologist; philosopher.

*Most vocations involve several intelligences.

General Profile Types

Laser Profiles

- exhibit vast variation among their intelligences—with one or two intelligences very strong and the others relatively weak
- often have a strong area of interest and can follow a clear path to success by developing their peak intelligences

Challenges Posed by Laser Profiles for Teachers

- Deciding whether to accentuate the students' strengths through advanced opportunities to develop their gifts or to bolster their weak areas through remediation so that they can pass high stakes accountability tests

Searchlight Profiles

- show less pronounced differences among intelligences

Challenges Posed by Searchlight Profiles for Teachers

- Time and resource limitations often preclude developing all intelligences equally, so we need to consider which intelligences are most likely to pay off for a particular student
- Challenge of searchlight students is to help them choose a career and life path

Advantages of a Profile Approach

- Teachers must differentiate instruction to match student profiles
- profile approach to multiple intelligences instruction provides teachers with better diagnostic information to help a particular student who is struggling

Teacher Imperatives for Profile Multiple Intelligences

Following are three imperatives that we believe should guide teachers in differentiating instruction.

1. **Consider Why a Student is Struggling**

   - Gardner warns that student's potential is not the sum of his or her intelligence "scores," as some multiple intelligence inventory measures on the market imply
   - If intelligence interferes with others, then the student's overall potential may be lower than the straight sum.

   > **Intelligences have multiplicative as well as additive**

   - If intelligences are compensating for or enhancing one another, the student's overall potential may be higher than the straight sum.

2. **Consider Ensemble Learning Potentials**

   - Multiple intelligences theory encourages collaboration among students in communities of engagement that are better able to tackle large and complex problems from different perspectives

- Teachers can design collaborative arrangements by varying configurations of students with different or compatible profiles
  Example Groupings
  - Students with compatible (with similar patterns of strengths and weaknesses profiles can be grouped to work together to solidify and build on strengths.
  - Students with complementary profiles (in which one students weak areas are another student's strengths can work together to compensate for one another.

3. Provide Students With Rich Experiences

- Rich experiences enable students to learn along several dimensions at once—socially spatially, kinesthetically
- to promote learning across student intelligence profiles, teachers need to offer students activities in which they can engage with the material personally rather than just absorb it in an abstract, de-contextualized way.

School Conditions That Support Making Meaning

The last imperative from multiple intelligences research highlights the importance of contexts that enhance student meaning making. This is a critical feature of our approach to designing school environments that support differentiation of instruction. To emphasize that we view differentiating instruction within an understanding for design framework as fundamentally about **teaching for meaning**, in this volume we will show that teaching for meaning requires teachers to develop designs for their instruction recognizing that different types of knowledge involve different types of learning, and therefore different types of teaching. Marzano, Pickering and Pollock (2004) remind us that Ralph Tyler first introduced this notion in the 1950s. It remains such an important notion that in this volume we call attention to the need for teachers to develop their practices of differentiation based on a theory of comprehensive instructional practice. At the heart of this theory of practice is a focus on teaching for meaning that requires the teacher to become a mediator of thinking (Brooks, 2004). Students must learn to practice the **knowledge arts** (Perkins, 2004).

In schools where teachers mediate students' practice of the knowledge arts, instruction is thoughtfully designed to teach students to take charge of their own learning. In doing so these schools launch self-directed learners, who when confronted with complex and sometimes ambiguous and intellectually demanding tasks that characterize life in the knowledge society that the U.S. has become, have developed the dispositions and habits of mind to become self-managing, self-monitoring, and self-modifying (Costa & Kallick, 2004, Perkins, 2004). They become practitioners of the knowledge arts, adept at communicating strategically, insightfully, and effectively, thinking critically and creatively, and putting school knowledge to work.

> The knowledge arts bundle together deep reading, compelling writing, strong problem solving and decision making, and the strategic and spirited self-management of learning itself, within and across the disciplines (Perkins, 2004).

This requires that teachers scaffold their instruction to a theory of meaning making that improves student learning. Our focus in this volume is on teaching for meaning by scaffolding instruction to increase student learning.

Jacqueline Ancess (2004) reports that there are specific conditions in schools that support teaching and learning for making meaning:

Teacher ethos and belief in the importance of making meaning in the education process is enhanced when school cultures support their efforts, providing students "opportunities to practice, internalize, and deepen the requisite habits of mind that develop meaning making as a norm not only in school but also in their lives" (p. 39).

Trust in teacher judgment is common in schools supporting teaching for meaning. "Teachers are expected to make important decisions about how they design and organize the curriculum and what instructional materials they use" (p. 39).

Organization of curriculum into focused units. Schools supporting teaching for meaning organize curriculum into meaningful units, or by creating thematic clusters of courses taught by interdisciplinary teams that create scaffolds for deepening student understanding.

Infrastructure to support meaning making. In meaning making school teachers' efforts to overcome student resistance are supported by a school-wide organizational and instructional infrastructure that anticipates student needs.

> **Colleen Seremet, Maryland's Assistant Superintendent for Instruction,** reminds us: "Curriculum doesn't teach kids; assessment only measures how our students are doing. The real important element in quality instruction is always the teacher in every classroom."

Differentiating Instruction to Teach for Meaning

Why is teaching for meaning so important today? This question is the focus of discussion by researchers in the September 2004 edition of *Educational Leadership*, published by the Association for Supervision and Curriculum Development. One contributor observed "Are there any serious educators who, in principle, don't want teachers to teach for meaning or don't want students to construct deep understandings of content with enough breadth and depth to demonstrate competence in a number of disciplines? (Brooks, 2004, p. 9). The answer is no!

Maryland educators are well aware that teaching for meaning is as crucial for fostering students' deep understandings of content areas as it is for leading students to achieve and to develop the dispositions they want to achieve. Both are required if all of Maryland's students are to have opportunities to achieve proficiency in state assessments and if teachers are to meet the high standards set by the state.

> "Maryland schools take very seriously the job of preparing students, offering more AP courses in high school and strengthened academic rigor at all levels," said **State Superintendent of Schools Nancy S. Grasmick.** "High standards and accountability pave the way for success for all of our students in whatever they plan to do after high school." (Measuring-Up-2004, Annapolis, MD, September 15, 2004)

The state of Maryland has led the country in supporting instructional improvement through an accountability system intended to ensure that each student has opportunities to achieve.

Maryland's Visionary Panel, called for "alignment of every aspect of education—educators' preparation and professional development, policymaking, testing, curriculum, leadership, and funding—to support the classroom teacher and student."

And, Maryland's *Bridge to Excellence Act* calls on districts to use their master plans to align resource allocation and reform goals. In response to these recommendations, Maryland has developed a Voluntary State Curriculum (VSC) that aligns the Maryland Content Standards and the Maryland Assessment Program. Teachers across Maryland are now able to look at a Voluntary State Curriculum to guide their instructional designs.

> However, as **Colleen Seremet, Maryland's Assistant Superintendent for Instruction,** explains: "We all know that a perfect Voluntary State Curriculum, if there is such a thing, and a perfect Maryland assessment system, by themselves are not going to bring the kind of student achievement for every student across the state of Maryland that we are looking for. So in the next steps in the curriculum develop process we are looking to our colleagues in the local school districts to share exemplary formative assessments, unit plans, and particular resource materials they are finding to be effective with certain sets of content standards or indicators. So that we can really take the skeletal framework of Voluntary State Curriculum and begin building muscle on to that framework, so that there are more and more tools for teachers to be able to share across the state and use with each other." (School Improvement Maryland, Instruction, Voluntary State Curriculum. Hear her at (http://mdk12.org/instruction/curriculum/index.html).

The Second Curriculum: Developing Strategic Practice of Knowledge Arts

Maryland's educators are well aware that much work is needed to build instructional capacity and use the Voluntary State Curriculum in ways that ensure that all students have opportunities to practice knowledge arts. They know that teaching for meaning is essential if students are to have learning opportunities that foster creating, communicating, organizing and acting on knowledge of facts, ideas and skills gained through the Voluntary State Curriculum. This is a significant task, but one that is really only a matter of developing good methods of teaching content in ways that enhance student engagement and make knowledge more meaningful.

Yet, David Perkins (2004) of Harvard University's Project Zero, tells us that schooling as it has been practiced has not done well in developing the knowledge arts of students. In typical schools, investigative, inquiry-oriented activities in which learners create knowledge are not common; nor are students given opportunities to do much with their learning outside school. Similarly, schools do not address well the problem of transfer of knowledge; students are not typically encouraged to carry their knowledge from one classroom to another. Although educators do communicate knowledge to students, and students are given many opportunities to receive this knowledge, they are typically not taught to do so strategically.

> **Harvard Project Zero** has found that teachers promote the knowledge arts when they:
> - Make thinking visible
> - Teach for understanding
> - Create a culture of learning
> (www.pz.harvard.edu)

Teaching strategic knowledge arts under the requirements of *No Child Left Behind* requires that educators infuse a second curriculum into their instructional practices. The good news is that this is not another add-on to the Voluntary State Curriculum. Educating students in the second curriculum means equipping them with knowledge handling skills so that they can deepen and broaden their mastery of the Voluntary State Curriculum. Teaching the knowledge arts involves bringing the knowledge required to gain proficiency in the content of the Voluntary State Curriculum to life and keeping it alive for each student.

What do we mean by strategic practice of knowledge arts? David Perkins tells us that the "knowledge arts are more than just tools for teachers to teach with; they encompass ideas, skills, and attitudes for learners to learn- a second curriculum. Thinking of the knowledge arts in this way creates new responsibilities for educators. As teachers teach science, history, or literature, they should be able to specify what skills of inquiry, strategies of communication, methods of organization, and ranges of application they are striving to develop in students; how they are spending time on it; and how they are exciting students' interest and providing serious guidance. (Perkins, 2004, p. 18).

Researchers who study approaches to teaching that foster students' deeper understanding have found that certain instructional techniques are very effective in supporting students as they learn to recognize patterns; other techniques are better suited to supporting students as they learn strategic skills, or as they build engagement with learning.

Brain research confirms that teachers must develop instructional strategies to support student learning through recognition, strategic, or affective networks. We now know that teachers can accommodate diverse learners by using a repertoire of teaching strategies suited to each of the brain networks. Principals can provide the best support for teachers by helping them design learning opportunities for students that address individual differences in students' networks.

Designs for Learning From Brain Research

Evidence from theory driven cognitive science research is now being translated into designs for instructional strategies. Newly emerging neuropsychological brain mapping studies are adding compelling biological evidence to behavioral observations that align with constructivist learning theory

For the latest research on learning, see the on-line text *How People Learn: Brain, Mind, Experience, and School* at http://www.nap.edu/html/howpeople1/.

What do we Know About Learning from Brain Research?

In recent years, scientists have made progress toward unlocking the secrets of how our brains learn. Researchers have found that there are multifaceted networks of connections that help individual parts of the brain communicate flexibly and along multiple pathways. Many smaller networks are specialized for performing particular kinds of processing and managing particular learning tasks. Three primary networks, structurally and functionally distinguishable but closely connected and functioning together, are equally essential to learning.

Recognition networks are specialized to sense and assign meaning to patterns we see; they enable us to identify and understand information, ideas, and concepts.

Strategic networks are specialized to generate and oversee mental and motor patterns. They enable us to plan, execute, and monitor actions and skills.

Affective networks are specialized to evaluate patterns and assign them emotional significance; they enable us to engage with tasks and learning and with the world around us.

The implications of brain research in education are significant, and already well recognized. We now know that students do not have one kind of intelligence or one way of learning—they have many. To accommodate these many ways of learning, teachers can use what we know about how each brain network operates to make their teaching methods and curriculum materials flexible in specific ways and to differentiate instruction for enhanced meaning to diverse groups of students.

The **Class Learning Profile Template** helps you evaluate learner needs and strengths in light of the three brain networks at http://www.cast.org/TeachingEveryStudent/learnerneeds

Revisiting Design Principles for Scaffolding Instruction

In our 2004 volume Design Principles for Learner Centered Schools: Scaffolding Instruction to Improve Student Learning we described strategies associated with three principles for addressing students' diverse learning networks. In addition, we identified a fourth principle that recognized students' diverse cultural pathways. (For information on accessing the 2004 Design Principles volume, and all other volumes see the back of this report). Following are the strategies for scaffolding instruction that we presented:

Teaching strategies to enhance student recognition skills:
- Providing multiple examples.
- Highlighting critical features.
- Providing multiple media and formats.
- Supporting background knowledge

Teaching strategies to enhance student strategic skills:
- Provide flexible models of skilled performance
- Provide opportunities to practice with supports
- Provide ongoing, relevant feedback
- Offer flexible opportunities for demonstrating skill

Teaching strategies to enhance student diverse affective needs:
- Offer choices of content and tools
- Offer adjustable levels of challenge
- Offer choices of rewards
- Offer choices of learning contexts.

Universal Design for Learning Framework

Rose and Meyer (2002) remind us that because all three brain networks are involved in learning, teachers cannot literally "teach to" students' recognition, strategic, and affective networks as separate entities. However, thinking about these networks individually helps us

remember that learning is multifaceted and that barriers in the curriculum can arise in a number of places.

Broadly speaking, we must teach our students to

- Recognize essential cues and patterns.
- Master skillful strategies for action.

Rose and Meyer explain "As teachers, whether we are addressing individual differences in our students' recognition, strategic, or affective networks, we can provide the best support by individualizing pathways to learning. Flexible methods and materials—the heart of the UDL framework and its implementation—make this feasible in the real world. While pursuing a common goal, each student in the classroom can follow his or her own path and obtain a level of performance that represents personal progress." Drawing from brain research and using new media, the UDL framework proposes that educators strive for three kinds of flexibility:

The UDL framework shifts educators' understanding of learner differences. It challenges us to rethink the nature of curriculum materials and endow them with the inherent flexibility necessary to serve diverse learning needs. UDL also opens the door for rethinking how we teach. With the option to individualize learning supports and focus the challenge differently and appropriately for each learner, teachers must be very clear about the learning goals they set for any given assignment or unit. Only when goals are clear can we select and apply flexible materials to support and challenge each learner. Similarly, clear goals help us focus our assessment of student progress in an accurate and useful way. The UDL framework can guide these three pedagogical steps, helping teachers to *set clear goals, individualize instruction*, and *assess progress*.

For addition material about Universal Design for Learning, see http://www.cast.org/TeachingEveryStudent/UDL

- To represent information in multiple formats and media.
- To provide multiple pathways for students' action and expression.
- To provide multiple ways to engage students' interest and motivation.

UDL is a framework that can help you turn the challenges posed by high standards and increasing learner diversity into opportunities to maximize learning for every student. Drawing upon new knowledge of how the brain works and new technologies and media now available for teaching and learning, UDL frames a systematic approach to setting goals, choosing or creating flexible materials and media, and assessing students accurately. You can learn more about CAST and Universal Design for Learning by visiting **Teaching Every Student**, an online resource with tools, lesson plans, and tutorials. See:: http://www.cast.org/teachingeverystudent/

Ohio schools shed "cookie cutter" approach to learning

Nine districts in Northeast Ohio have embraced "universal design for learning", an educational model that uses teacher collaboration and technology to tailor instruction to individual student needs. Proponents say UDL has reduced the achievement gap and boosted student engagement

Students at Fitch Intermediate School in Olmsted Falls have lots of choices. While researching famous Ohioans recently, they went on the Internet, read library books or used computer software that read text to them. Then they were allowed to present their information in different ways: written reports, detailed pictures, posters, oral reports or power-point demonstrations.

This nontraditional approach was inspired by a nationwide movement called universal design for learning, or UDL, aimed at removing barriers to learning. Nine districts in Northeast Ohio - Olmsted Falls, North Ridgeville, Avon, Lakewood, Keystone, Elyria, Lorain, Sheffield Lake and Vermilion - have opened their classrooms to UDL over the last four years. "Kids love when they have options, and we're not getting cookie-cutter reports," said Fitch teacher Peggy Morris. "I see higher levels of thinking emerging, not just rote facts."

North Ridgeville Superintendent Larry Bowersox said UDL is an essential tool to help districts meet the demands of the federal No Child Left Behind law, which emphasizes individual student progress. *ASCD Special Report*, 09.16.06

Address Gender Based Brain Differences: A Key Consideration in Differentiating Instruction

Researchers report that all over the world boys are struggling in school, with lower grades, more discipline problems, more learning disabilities, and more behavioral disorders than girls (Gurian & Stevens, 2005). They report that these problems appear to reflect the failure of many educators to differentiate instruction to accommodate gender based differences in brain structure and hormonal and chemical functioning that are evident even in elementary schools.

Kelley King and Michael Gurian (2006b, p. 59) summarize recent research on gender based brain differences by pointing out:

> *Boys who don't read or write as well as we'd like come in all kinds.*
> "There's Garrett, who's perpetually in motion, his fingers drumming the desk. He's not focusing on his reading and pokes the student in front of him. He's becoming a discipline problem. There's Jared, who stares into space, failing to fill more than a few short lines with words. There's Dan, who turns in rushed and sloppy work and receives failing grades. When it comes to fulfilling the kinds of assignments that we cal! "literacy," boys are often out of their chairs rather than in them" (King & Gurian, 2006a, p. 56)

- Boys' brains generally have more areas dedicated to spatial-mechanical functioning than girls' brains do, Girls use more words on average than boys do, and they tend to think more verbally.

- Boys tend to rely more on pictures and moving objects when they write, whereas girls tend to excel in using words that reference color and other fine sensory information.

- Girls are usually better able to sit still and read, able to read and write earlier, and better at literacy in general.

- Girls tend to pay attention to more information on more subjects at any given time, whereas boys tend to heap a lot of information into a single-task focus.

- Boys concentrate best, in general, when they follow steps A to Z without distraction.

- Boys also take more time than girls to transition between tasks. They tend to become more irritable and to under perform in learning and classroom behavior when teachers move them continually between tasks.

- Boys are more naturally aggressive and competitive than girls are.

- Girls generally gravitate less toward competitive learning and relationships

- Boys continually engage in *aggression nurturance* (the hitting and playful "dissing") to support one another.

> **Boys have less desire than girls to comply to please others, including teachers.**

Strategies to Address Gender Based Brain Differences

Kelley King and Michael Gurian (2006a) warn:

When teachers are unaware of gender based brain differences, they may misdiagnose normal boys as having learning disabilities and conduct disorders. (p.59)

This does not have to be so, King and Gurian (2006a) show that when a school introduces more boy-friendly teaching strategies in the elementary school classroom, gender gaps can be reduced, while also improving girls' reading and writing performance. To create the conditions that bring about these improvements, **teachers can begin by assessing** whether classroom activities:

- are a better fit for the verbal-emotive, sit still, take-notes, listen-carefully, multitasking girl,

- address the natural assets that boys bring to learning—impulsivity, single-task focus, spatial-kinesthetic learning,

- Accommodate potential physical aggression—as problems.

> **Why are they so Restless?**
> "Boys' brains go into what neurologists call a rest state many times each day. You'll notice this when you look at who's drifting off, zoning out, or sleeping through class. You'll also notice that some boys will try to avoid these rest states by engaging in such activities as tapping their pencils or hitting a classmate with a spitball. For some boys— especially those with behavioral issues—these self-stimulating and disruptive behaviors are symptomatic of emotional or psychological problems. But for many boys these disruptions simply reflect male brains trying to stay awake in a classroom that IS not well suited for their kind of learning. When the male's brain gets bored, some of his brain functioning shuts down. There is a drift into a brain state that negates learning and performance. When the female brain gets bored, however, more of her brain functioning stays active. Even when she's bored, a girl is more likely to retain the ability to take notes, write words down, and listen carefully" (King & Gurian, 2006b, p. 59)

Teacher Strategies for Differentiating Instruction to Close Gender Gaps

King and Gurian (2006a) identify 8 strategies that teachers can use to differentiate instruction to address gender-based assets:

Strategy 1: Increase Experiential and Kinesthetic Learning Opportunities by

- Creating task oriented opportunities for debate, discussion, and interaction and competition that involve physical movement, increased learning orientation in space and that keep boys (and girls) energized and attentive

Strategy 2: Support Literacy Through Spatial-Visual Representations by

- Addressing the need for nonverbal planning tools, especially in males, to help bridge the gap between what students are thinking and what they're able to put down on paper, by assigning tasks that require other forms of spatial and visual representation like storyboards

> **By incorporating new theories from gender science into classroom practice, teachers *can* close gender gaps and significantly improve learning.**
> King and Gurian (2006a)

Strategy 3: Let Boys and Girls Choose Topics That Appeal to Them by

- Giving students greater choice in what they read and write

- Recognizing that action, competition, and heroism is of interest to males, while using this interest as an opportunity to teach lessons on character, nonviolence, and civility

Strategy 4: **Help Boys with Homework by**

- Requesting that parents sign homework assignments, and follow up with parents when they don't

> **Boys are better served by balancing multitasking with project-driven and depth-driven learning.**

Strategy 6: **Offer Single-Gender Learning Environments by**

- using single-gender groupings for different purposes in coeducational classes.

Strategy 7: **Make Reading and Writing Purposeful by**

- designing activities that focus on areas of authentic interest to boys and girls.

- providing opportunities for all students to share their writing in front of large audiences—at monthly school assemblies,

> **Competition and the opportunity to earn public respect have helped motivate many under motivated students—especially boys.** (King & Gurian, 2006a)

Strategy 8: **Seek Out Male Role Models for Literacy by**

- partnering with parents by actively encourage men to visit classrooms to share their own writing and speak about their work.

Principal's Support for Differentiating Instruction to Address Gender Differences

Principals can support school improvement planning that uses following steps to create gender friendly classrooms:

1. *Support teacher learning about the natural assets that brain research* suggests both girls and boys bring to learning (see King & Gurian, 2006b)

2. ***Assess school by asking***

- Do the educators in my school realize many behaviors typical of either boys or girls are neurologically based?

- Do they realize that there is a scientific basis for innovating on behalf of girls and boys as disaggregated groups?

> **Principals can Support Teachers by:**
> Getting parents involved and by encouraging them to supervise homework and cut out distractions that their children may be experiencing until the homework is completed. (King & Gurian, 2006a)

- Does my school incorporate boy friendly and girl-friendly learning innovations in full knowledge of how essential they are in accommodating the structural and chemical gender differences built into the human brain?

3. *Provide teachers' opportunities for job embedded professional development* that enables them to incorporate new theories from gender science into classroom practice.

Instructional Leadership to Support Differentiated Instruction

In our previous volumes we explained how cultural, educational, and legal changes have significantly altered the mix of students in regular education classrooms. The challenge posed by greater diversity and greater accountability is to enable students with widely

divergent needs, skills, and interests to attain the same high standards. This requires teachers who have a deep knowledge of how to teach for diversity. It also requires principals to engage in instructional leadership practices identified as effective in Maryland's Instructional Leadership Framework.

We recognize that principals must develop a full range of instructional leadership practices to increase teacher capacity and to differentiate instruction, however, in this report we feature specific examples of evidence in principals' practices of instructional leadership that demonstrate the outcomes identified in Maryland's Instructional Leadership Framework that are associated with each of the eight design principles for differentiating instruction that we highlight next. In doing so we identify Maryland Instructional Leadership Framework Outcomes and indicators of evidence supporting those outcomes. The eight key outcomes that we refer to throughout this volume are noted below:

Maryland Instructional Leadership Framework Outcomes

1. Facilitate the Development of a School Vision
2. Align All Aspects of School Culture to Student and Adult Learning
3. Monitor the Alignment of Curriculum, Instruction, and Assessment
4. Improve Instructional Practices Through the Purposeful Observation and Evaluation of Teachers
5. Ensure the Regular Integration of Appropriate Assessments Into Daily Classroom Instruction
6. Use Multiple Sources of Data to Improve Classroom Instruction
7. Provide Staff with Focused, Sustained, Research-Based Professional Development
8. Engage All Community Stakeholders in a Shared Responsibility for Student and School Success

Instructional Leadership Imperatives

To put the Maryland Instructional Leadership Framework Outcomes to practice in supporting differentiated instruction we believe that principals must act on four imperatives:

Instructional Leadership Imperative 1: **Understand the Conditions Supporting Differentiation**

Leaders who want to rate their school on conditions for effective differentiation can consider the following criteria.

The research suggests that effective differentiation:

- Is proactive. When lessons are not working, teachers reflect and design multiple routes for students to succeed.

- Utilizes small, flexible learning groups based on student needs.

- Uses a variety of materials to address specific learner needs.

- Accounts for learner variance and uses flexible pacing.

> **In schools where effective differentiated instruction is occurring:** *"Teachers systematically study learner traits to understand what each student brings to the task, what each student needs to succeed with the task, and what the student needs to support his or her success."*

- Is knowledge-centered and teachers have a clear understanding of what is essential in the study unit.

To Use These Criteria to Determine Whether Differentiated Instruction is Occurring In Their Schools, Leaders Can Ask Themselves**:**

- What is happening at my school?
- What is not happening?
- Will these criteria help my staff meet student needs?
- Where would I like to start?

Instructional Leadership Imperative 2: **Know What to Look For**

Research suggests that differentiation is evident when there is evidence of:

- flexible classrooms
- ongoing assessment
- flexible grouping
- respectful activities
- students and teachers as collaborators in learning

We believe that to be put into practice these approaches to differentiating instruction require invested teachers.

> *Invested teachers give what it takes to make tomorrow's class work for everyone. Students understand that the teacher has time for them and wants to provide both sanctuary and scaffolding for them. Invested teachers share their thoughts about the classroom with their students."*
>
> **Carol Ann Tomlinson,** *Fulfilling the Promise of the Differentiated Classroom: Strategies and Tools for Responsive Teaching*

Instructional Leadership Imperative 3: **Understand Challenges**

Differentiating instruction is challenging. In order to provide appropriate and effective support and professional development for teachers, we believe instructional leaders must consider the following challenges of differentiating instruction

1. Teachers seldom differentiate instruction - whether for students who are English language learners, students with learning problems, or students identified as gifted.

2. Few teachers instruct in ways that are culturally and racially sensitive.

3. When teachers do differentiate instruction, they often do so in ways that are more tangential than substantive, and in ways that are more reactive than proactive or planned.

4. Even teachers in special class settings who differentiate for students with an exceptionality that "matches" their specialty seldom differentiate for students with exceptionalities in other areas or with multiple exceptionalities.

5. Few preservice teacher programs seem to prepare beginning teachers to plan for effective instruction of academically diverse learners (http://www.nsdc.org/library/publications/jsd/tomlinson264.cfm)

Instructional Leadership Imperative 4: **Understand Change**

High quality professional development can be a catalyst for change in any school or school district. However, there are careful considerations leaders must dwell on before approaching the implementation of successful professional development. Change can be a difficult process to undergo, however, understanding the concept of "change" may be instrumental in planning for and supporting the implementation of realistic and effective professional development for teachers to learn about differentiating instruction. A reading of Michel Fullan's writings about resistance to

> *"Without understanding the complex nature of the changes required, and without creating professional development opportunities for teachers and others, school communities can end up adopting innovation after innovation without seeing any permanent improvement in the achievement of school goals. Michael Fullan (1996)*
>
> *http://www.ncrel.org/sdrs/areas/issues/educatrs/profdevl/pd200.htm*

change suggests these lessons for instructional leaders as they plan for and implement professional development in differentiated instruction:

Lesson 1: Understand Active Initiation and Participation

Wide scale participation may not be effective. Small groups of people began effective change and if they are successful they build momentum throughout the school. Make change manageable by starting small.

> *"Participation, initiative-taking, and empowerment are key factors from the beginning, but sometimes do not get activated until a change process has begun."*

Lesson 2: Understand Pressure and Support

Pressure and support are essential for success. Pressure can serve a positive role in change. Principals should integrate both pressure and support during the change process

> *"Pressure without support leads to resistance and alienation; support without pressure leads to drift or waste of resources."*

Lesson 4: Understand Changes in Behavior and Beliefs

There needs to be careful consideration of behavior changes and changes in beliefs or understanding. Often when people try new things, things get worst before they get better.

> *"We see then that the relationship between behavioral and belief change is reciprocal and ongoing, with change in doing or behavior a necessary experience on the way to breakthroughs in meaning and understanding."*

Lesson 5: Understand Ownership

Ownership of something new for a large group of people is not easily acquired. As individuals take ownership of something new the sense of clarity, skill, and commitment becomes a progressive process.

> *"True ownership is not something that occurs magically at the beginning, but rather is something that comes out the other end of a successful change process."*

SECTION III: Design Principles for Differentiated Instruction

In this report we outline six design principles for differentiated instruction using the Design for Learning Framework. We outline each next.

Design Principle 1: Design Differentiated Instruction for Deep Knowledge

The approach to designing learning environments that we take is premised on a logic of action that places instructional design into the systemic context in which content instruction and assessment are aligned to maximize opportunities for students to gain deep knowledge. This requires designing curriculum and instruction around the essential knowledge, understanding, and skill reflected in both the subject domains and the state content standards to foster deep understanding by students of varying ability, experience, opportunity, language, and interest.

> *Professionals in any field are distinguished by two characteristics: (1) They act on the most current knowledge that defines the field, and (2) they are client centered and adapt to meet the needs of individuals.*
> Tomlinson & McTighe (2006).

Teacher Strategies to Differentiate Instruction for Deep Knowledge

Deep Knowledge Instructional Strategy 1

Design tasks and assessments related to content standards with the intent of having all students understand the essential principles and relate the principles to their own lives and experiences.

Deep Knowledge Instructional Strategy 2

Develop instructional plans that use different materials, time frames, student groupings, and modes of student expression to ensure that each student will have fully supported opportunities to develop and extend the targeted understandings and skills.

Principal Instructional Leadership Supporting Instruction for Deep Knowledge

- Foster and develop varied systems of support to meet varied student needs.

Maryland Instructional Leadership Framework Outcome Met

3. Monitor the Alignment of Curriculum, Instruction, and Assessment

Principals who effectively support instruction for deep knowledge demonstrate:

3.1 abilities to participate in ongoing conversations with teachers as to how state content standards, voluntary state curriculum, and research-based instructional strategies are integrated into daily classroom instruction.

3.2 capacity to make teacher assignments that are purposeful and engaging

3.3 capacity to ensure that student work is rigorous and demonstrates new learning

3.4 capacity to ensure that assessments regularly measure student mastery of the content standards

From Principles to Practices of Differentiate Instruction for Deep Knowledge

Green Holly Elementary School

"We use differentiation every day in the teacher's lessons and their lesson planners have a component for differentiation. Guided reading is a non-negotiable in the K-5 classroom. In their lesson plans they have to write down and show what the differentiation is in their subject area." –**Mrs. Sherry Pinto, Principal**

Magnolia Middle School

"Instead of having our typical class size of 25 students we reduced our numbers to half. The regular language arts teacher has 12 students while the special educator has 12 students. We find reading [passages] on their ability level and have them work through the program to move to the next level. Students are assessed and work with teachers one on one as they progress through the Fast Track levels. Students are also taught to self-monitor their level without assistance from the teacher." –
Mr. Joseph Mascari, Principal and Mrs. June Clark, Instructional Facilitator

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Design Principle 2: Design for Evidence of Authentic Understanding

Use assessments that require students to transfer knowledge to authentic contexts to gather evidence of variance in student proficiency and to guide design of curriculum and instruction strategies that provide opportunities and support to ensure that each student continues to develop and deepen knowledge, understanding, and skill from his or her current point of proficiency, interests, and learning preferences

Teacher Strategies to Differentiate Instruction for Authentic Understanding

Authentic Understanding Instructional Strategy 1

Address student variance in interest by creating opportunities for students to work alone or to participate in interest based learning groups

Authentic Understanding Instructional Strategy 2

Address student variance in reading sophistication by working with the media specialist to create learning resource packs with materials of varying reading levels, including book marked Web sites, at a broad range of reading levels.

Authentic Understanding Instructional Strategy 3

Provide opportunities for students who seek extra support and guidance with targeted learning sessions on content

Principal Instructional Leadership Supporting Authentic Understanding Instruction

Create teacher opportunities for job-embedded professional development in the design and use of authentic student assessments that are aligned to Maryland School Assessments and High School Assessments

Maryland Instructional Leadership Framework Outcome Met

5. Ensure the Regular Integration of Appropriate Assessments into Daily Classroom Instruction

Principals who effectively support instruction for Authentic Understanding demonstrate:

5.1   capacity to lead schools where multiple and varied assessments are developed collaboratively

5.2   capacity to lead schools where formative assessments are a regular part of the ongoing evaluation of student performance and which serve as the basis for adjustments to instruction

5.3   capacity to lead schools where summative assessments are aligned in format and content with state assessments.

5.4   capacity to lead schools where appropriate interventions for individual students are based on results of assessments.

From Principles to Practices of Authentic Understanding Instruction

Havre de Grace Elementary

"When you are planning for differentiated instruction, the planning depends upon the learning you see as the result of that instruction. It is constantly reflected upon and adapted accordingly and as that instruction is implemented, learning is assessed and that is the key to how you use it to enhance instruction.   It is the implementation of instruction, reflection on the learning based on data, and the ongoing assessment of and for learning. That is what really leads to the need for differentiation."-
Mrs. Joyce Stevenson

Rosemont Elementary/Middle School #63

"Learning is differentiated at Rosemont in a variety of ways. At the beginning of the year, we analyze all the MSA testing data and use the results to group students into performance level groups. Our partnership with Coppin University allows for a number of student teachers, tutors, and mentors who can work in the classroom with small, leveled groups of students while the classroom teacher works concurrently with his or her own group. Formative assessments are conducted throughout the process in order to see what specific skills students are strong or weak in and groupings are very malleable as students move in and out of groups depending upon their strength in a particular skill."-**Ms. Sandra Ashe, Principal**

Rosemont Elementary/Middle School #63

"We have also employed technology at Rosemont to differentiate instruction. The Class Works program, made by Curriculum Advantage is installed on all school computers and develops a skills related sequence for each student based on their particular learning need. Students use Class Works as a learning center in the classroom, or come to the computer lab in either a whole class or small group to work on skills identified in the benchmark tests as needing extra attention. In addition to Class Works, we have developed a new instructional technology initiative at Rosemont to integrate more audio, video, and multimedia learning into the classroom to meet the needs of multi-modal learners."-**Ms. Sandra Ashe, Principal**

Design Principle 3: Map Essential Content Knowledge, Understanding and Skills Into Curricular Pathways that Deepen Student Knowledge

Instruction should reflect clarity about the purposes and priorities of content standards. Design activities, discussions, and assessments to ensure that all students' focus on the enduring knowledge, understanding, and skills targeted in the standards.

Teacher Strategies to Differentiate Instruction by Mapping Curricular Pathways

Mapping Curricular Pathways Strategy 1

Use the essential knowledge, understanding, and skill as a focal point for differentiating instruction for students who struggle to learn and for students who are advanced as learners.

Mapping Curricular Pathways Strategy 2

Make time and create opportunities to work with students on skills they are lacking and ask them to apply those skills to their assessment tasks.

> For struggling learners *teachers practicing differentiated instruction* emphasize important skills and knowledge from past years rather than "nice but not imperative to know" knowledge and skill from the current unit.
> Tomlinson & McTighe (2006).

Mapping Curricular Pathways Strategy 3

Use continuous authentic assessment to engage student acquisition of proficient understanding of content, and on that basis revise homework, activities and key assessments to provide challenges and opportunities for students to deepen understanding by pursuing interests in content.

Principal Instructional Leadership Supporting Mapping Curricular Pathways

- Provide opportunities for teachers to develop and share differentiated learning resources to deepen extend and elaborate core content.

Maryland Instructional Leadership Framework Outcome Met

3. Monitor the Alignment of Curriculum, Instruction, and Assessment

Principals who effectively support instruction for Mapping Curricular Pathways demonstrate:

3.1   abilities to participate in ongoing conversations with teachers as to how state content standards, voluntary state curriculum, and research-based instructional strategies are integrated into daily classroom instruction.

3.2   capacity to make teacher assignments that are purposeful and engaging

3.3   capacity to ensure that student work is rigorous and demonstrates new learning

3.4   capacity to ensure that assessments regularly measure student mastery of the content standards

From Principles to Practices of Mapping Curricular Pathways

Green Holly Elementary School

"The Instructional Resource Teachers (IRT) are assigned to each grade level. Their job is to support the teachers in the class. They obtain resources, run intervention groups and or help teachers' with specific needs." -
Mrs. Sherry Pinto, Principal

Magnolia Middle School

"It is important to have all staff members understand the goal, we need to improve student learning and we will do whatever it takes. The school needs to look at implementing a schedule created based on student need and not school convenience. Students and teachers are moved around in order to obtain a best fit for learners" –
Mr. Joseph Mascari, Principal and Mrs. June Clark, Instructional Facilitator

Rosemont Elementary/Middle School #63

"Our supplemental teachers who lead the differentiation effort gather the student MSA data, compile and analyze the information, and work with the classroom teacher in order to compose the groups. These supplemental teachers are veteran teachers who have proven results and therefore have a lot of instructional credibility throughout the building. The staffing structure at Rosemont has effectively mitigated many of the managerial challenges often encountered by schools that try to differentiate instruction. Overall, it is a total team effort from the classroom teachers who develop the instructional plan, to the supplemental teachers who pull groups and develop skills oriented instruction, to the special educators who work individually with special needs students, to the instructional support teachers who introduce various differentiation strategies, to the technology teacher who compiles testing data and finds materials to be used in the classroom online, everyone works together to differentiate learning for our students." **Ms. Sandra Ashe, Principal**

Design Principle 4: Conduct Evidence Based Quality Audits of Curriculum and Instruction Designs

Learner-centered schools create processes to regularly review evidence of student performance outcomes from curriculum designs, and to adjust curriculum and instruction to ensure that all students have opportunities to maximize their learning.

Teacher Strategies to Differentiate Instruction by Conducting Audits of Curricular Designs

Conducting Audits of Curricular Designs Strategy 1

Create pre assessments and use their results to determine individual students' prior knowledge and understanding of content units.

Conducting Audits of Curricular Designs Strategy 2

Create alternative learning routes for students with advanced understanding of content.

Conducting Audits of Curricular Designs Strategy 3

Provide small-group instructional sessions and some alternate homework assignments to address gaps in precursor skills and understandings identified in pre-assessments of some students.

Conducting Audits of Curricular Designs Strategy 4

Use formative or ongoing assessments to chart the progress of students, and continuing to develop small-group and individual learning plans for students who need additional instruction and exploration in a given area and for students ready to move ahead.

> Teachers *practicing differentiated instruction* use direct instruction to present ideas and information to the whole class, illustrate use of key skills, and engage students in small- and whole-group consideration of one of the unit's key questions.
> Tomlinson & McTighe (2006).

Conducting Audits of Curricular Designs Strategy 5

Vary class time spent in whole group, and individual and small group "sense making" activities to maximize each students learning opportunities.

Conducting Audits of Curricular Designs Strategy 6

Use student sense making times to meet with students in small groups for specific needs,

Conducting Audits of Curricular Designs Strategy 7

Move among students to view and take notes on their work, and to coach students as they work.

Principal Instructional Leadership Conducting Audits of Curricular Designs:

- Create teams to conduct regular audits of curriculum designs using outcome evidence including assessment results.

- Create data analysis learning circles to guide curriculum redesign.

- Create teacher opportunities to for job-embedded professional development focused on organizing classrooms for differentiated instruction.

Maryland Instructional Leadership Framework Outcome Met

5. Ensure the Regular Integration of Appropriate Assessments into Daily Classroom Instruction

Principals who effectively support instruction for Authentic Understanding demonstrate:

5.1   capacity to lead schools where multiple and varied assessments are developed collaboratively

5.2   capacity to lead schools where formative assessments are a regular part of the ongoing evaluation of student performance and which serve as the basis for adjustments to instruction

5.3   capacity to lead schools where summative assessments are aligned in format and content with state assessments.

5.4   capacity to lead schools where appropriate interventions for individual students are based on results of assessments.

From Principles to Practices of Conducting Audits of Curricular Designs

Rosemont Elementary/Middle School #63

"Differentiating instruction effectively requires a substantial investment of time and therefore experienced teachers generally have greater success. At Rosemont, our supplemental teachers and special educators help to guide and mentor our newer staff members on methods and strategies for differentiating instruction. These teachers meet almost daily to discuss strategies, regroup students, analyze the work of classroom individuals, etc. It is through this close collaboration that educators develop and hone their strategies for differentiating instruction for their students."
   -Ms. Sandra Ashe, Principal

Magnolia Middle School

"We have created a master schedule that includes intervention or remediation. The time is used to extend classroom time, provide enrichment, and give extra help and support to students. A program called Knowing Math (Houghton Mifflin) is used as a math intervention. Students are assessed and the students with lower math scores are assigned to participate in Knowing Math during their Viking Period." It is a twelve-week program that looks at math in a different way. Knowing Math has a large verbal component. The teacher provides verbal directions and the students are asked to explain the process for solving math problems. The Knowing Math program is the best for individual remediation."
   -Mr. Joseph Mascari, Principal and Mrs. June Clark, Instructional Facilitator

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Design Principle 5: Guide and Support all Students in Deepening and Extending Thinking About Challenging Content

All students should be guided and supported in thinking in complex ways by providing opportunities and supports for them to explore, interpret, apply, shift perspectives, empathize, and self-assess.

Teacher Strategies to Differentiate Instruction by Guiding and Supporting Student Thinking

Guiding and Supporting Student Thinking Strategy 1

Provide appropriate scaffolds to support student thinking about complex ideas by providing:

- key questions to guide thinking
- key vocabulary list of essential words and clear explanations of the words
- graphic organizers designed to help students categorize ideas;
- resource materials at various levels of difficulty,

> It is *not* the case that struggling learners must master the basics before they can engage in thinking. Rather, evidence clearly suggests that for most students, mastery and understanding come through, not after, meaningful interaction with ideas. Tomlinson & McTighe (2006).

- opportunities for students to extend their thinking about complex ideas through end of unit mixed perspective discussion groupings.
- opportunities for individual students to reflect on complex ideas in reflective journals and learning logs.
- opportunities to use learning logs, discussions groups and other scaffolded activities as formative assessments to guide instructional planning.

Principal Instructional Leadership in Guiding and Supporting Student Thinking

- Articulate a vision for learning that values differentiation of instruction by teachers to continually develop all students understandings and capacities as thinkers

Maryland Instructional Leadership Framework Outcome Met

4. Improve Instructional Practices Through the Purposeful Observation and Evaluation of Teachers

Principals who effectively support instruction for Authentic Understanding demonstrate:

4.1   capacity to conduct school processes to determine what students are reading, writing, producing, and learning.

4.2   capacity to use student data and data collected during the observation process to make recommendations for improvement in classroom instruction

4.3   capacity to use formal feedback during observation conferences as well as informal visits, meetings, and conversations with teachers regarding classroom instruction.

4.4   capacity to conduct regular and effective evaluation of teacher performance based on student learning.

From Principles to Practices in Guiding and Supporting Student Thinking

Magnolia Middle School

"It is also important to conferences with student individually and share their data explain it and set goals for their learning to get them to understand what they need to do to progress. Students need to set individual goals. It is also important to conference with teachers to identify individual students who may challenge whole class learning, so that teachers will be supported in student individual progress as well." -

Mr. Joseph Mascari, Principal and Mrs. June Clark, Instructional Facilitator

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Design Principle 6: Developing a Differentiated Instructional Systems Depends on the Collective Learning Capacity of a School's Professional Learning Community

The collective resources of a school's professional learning community with district support are needed to develop and sustain a system of differentiated instruction designed to enhance the transitional potential of student learning across the grades.

Teacher Strategies to Increase Capacity for Differentiated Instruction

Increase Capacity Strategy 1

Participate in school and district based collective learning opportunities to share understandings about students' learning needs, classroom routines, and instructional approaches to ensure that each student develops knowledge, understanding, and skills as fully as possible.

> Teachers find that their varied perspectives and experiences are complementary and nearly always result in worthwhile suggestions for both curriculum and instruction. Tomlinson & McTighe (2006).

Increase Capacity Strategy 2

Work with other teachers to develop curriculum together and meeting periodically to evaluate its effectiveness, suggest modifications for future consideration, share resources.

Increase Capacity Strategy 3

Share with other teachers issues related to working in responsive classrooms.

Increase Capacity Strategy 4

Work with specialists who can make suggestions for differentiating unit plans for various needs—such as students who need to move around to learn, students who need reading support, students who need to work at advanced levels of challenge, and other accommodations.

Increase Capacity Strategy 5

Use the suggestions of resource teachers to develop a repertoire of strategies such as think-alouds, paired reading, learning contracts, compacting, expert groups, and varied modalities of exploring and expressing ideas.

Increase Capacity Strategy 6

Use technology to address varied learner needs and to assist in keeping track of student growth toward important curricular goals

Principal Instructional Leadership Supporting Increased Capacity

- Develop and sustain a school based professional learning communities with the central mission of creating a system of differentiated instruction to enhance student learning across classes and grades.

- Support individual teacher development of dispositions and habits of instructional responsiveness

- Support individual teacher professional growth

Maryland Instructional Leadership Framework Outcome Met

7. Provide Staff with Focused, Sustained, Research-based Professional Development

Principals who effectively support instruction for Authentic Understanding demonstrate:

   7.1 knowledge and skills to ensure that professional development is connected to school improvement goals and is results oriented.

   7.2 capacity to give teachers opportunities to engage in collaborative planning and critical reflection during the regular school day (job-embedded).

7.3 capacity to ensure differentiated professional development according to career stages, needs of staff, and student performance

7.4 capacity to plan their own personal involvement in professional development activities

7.5 capacity to align professional development activities with the Maryland Teacher Professional Development Standards

From Principles to Practices in Increasing Capacity for Differentiated Instruction

Havre de Grace Elementary

"Teachers are always being supported in being effectively prepared for differentiated instruction but this is something that is a struggle educationally with the ongoing professional development. You cannot to do it once or give them a book on Differentiated Instruction by Tomlinson to read. Each time a teacher gets a new group, curriculum, or reading series the process remains the same but how the process defines itself needs a certain period of acclamation. You can know what differentiated instruction is, you can even know how to do it. However, it defines itself differently with each group and each year and you have to differentiate PD based on where your teachers are. Therefore, the manner in which we provide PD needs to be differentiated. That is why we use surveys and menus. You have to differentiation based on the population and we are conscious of the need for ongoing preparation."

Mrs. Joyce Stevenson, Principal

Rosemont Elementary/Middle School #63

"To effectively differentiate instruction, it really takes a team effort on behalf of the entire school and particularly amongst all the educators who are working with a particular group of students. There needs to be constant communication between classroom educators, special educators, social workers, and any other staff member working with a particular group of students. It really must be a school wide charge with the correct personnel in the appropriate roles to be conducted effectively. –

Ms. Sandra Ashe, Principal

Magnolia Middle School

"The instructional leadership team (principal, assistant principal, instructional leader, and mentor) helps to develop a professional development schedule. Once a week someone from the instructional leadership team meets with teachers during collaborative planning time. During this time, there is targeted planning on best practices, reflection and examination of student work, and discussions of instructional implications from looking at the work. Every staff member participates by bringing written samples to the group, which allows everyone to take ownership in instructional improvement."

Mr. Joseph Mascari, Principal and Mrs. June Clark, Instructional Facilitator

Green Holly Elementary School

"Assess your staffs' needs. Figure out where they are. Bring in an outside consultant. It is hard to be a prophet in your own land. You need to have an external consultant, an expert in the field. Make sure the school leader is in the professional development to validate the professional development." –

Mrs. Sherry Pinto, Principal

Magnolia Middle School

"A big component is not to throw a program at teachers. It is important to investigate, build consensus, and provide many opportunities for training. Your staff must buy into the remediation model. It is a teacher-centered program and not a top down initiative". –

Mr. Joseph Mascari, Principal and Mrs. June Clark, Instructional Facilitator

Havre de Grace Elementary

"Build capacity among your staff and give them the supports they need to embrace the need for differentiated instruction. You have to have a group of professionals that are willing challenge the learning curve, see the need for differentiated instruction, understand what it looks like and appropriately prepare and implement and assess the effectiveness of it [differentiated instruction]. You cannot expect differentiated instruction to happen if you are not building capacity. That is a process. It dose not happen overnight, it does not even happen in a year. Identify your key players to help administration build capacity among the staff. Seek out two or three teachers at different grade levels Get them into conferences, provide opportunities for professional growth outside of the building. As you get the core group going in your building they become advocates for the success for what is happening in their room. That is the catalyst for it [differentiated instruction] to gain the momentum. You do this slowly and intentionally and you engage the staff in the process. Ask them where they are. Identify their level of comfort and their needs. Validate the fact that you value their input by providing them with the stuff they have asked for. Whether it is peer visits, professional learning community resources, reading material. That is how you start. You start with a small group that has the interest and capabilities. Let them work as a professional learning community. Let them do the reading and have them talk about it, implement it and bring what they are doing back to the staff and they will bring other teachers into the fold. I do not think you can do this alone." **Mrs. Joyce Stevenson, Principal**

SECTION IV Case Studies of Maryland Schools
Differentiating Instruction

In the previous section of this volume we outlined six design principles that we believe schools can use to guide their efforts to differentiate instruction.. For each design principle we identified practices that our feature schools have developed that highlight local and state contexts. In this section we present case studies of each of the four schools to offer a more holistic picture of the work underway in each school.

Differentiating Instruction in Elementary grades

In their book, Differentiation in Practice: A Resource Guide for Differentiating Curriculum, Grades K-5, Carol Ann Tomlinson and Caroline Cunningham Eidson point out:

> *In elementary schools, the danger of "losing" students along the way is ever-present, and the same people who can attest to the wide range of differences among elementary students can also attest to the fact that students seem to be "checking out" of school and academics at earlier and earlier ages. For this reason, it becomes increasingly critical that elementary teachers find ways to encourage students to remain engaged in the learning process; this is a challenge that is difficult if not impossible to meet if students' differences are ignored.*

Tomlinson and Cunningham Eidson suggest that differentiation is also very critical in the elementary years because

> young students' early experiences have a profound impact on their views of school, their conceptions of the learning process, and their perceptions of themselves as learners. by igniting students' love of learning early in their schooling and by helping them to respect not only their own but also others' strengths, weaknesses, and interests, elementary school teachers establish the groundwork upon which students build their future learning.

Featured Maryland Elementary Schools

We have grouped the elementary schools together under an overview discussion of some of the practices that researchers like Tomlinson and Cunningham Eidson have identified as uniquely relevant to the elementary context.. We wish to thank principals, Mrs. Sherry Pinto and Mrs. Joyce Stevenson for sharing their insights into differentiating instruction in elementary schools

Green Holly Elementary School, St. Mary's County Public Schools
   Mrs. Sherry L. Pinto, Principal
Havre de Grace Elementary School in Harford County Public Schools
   Mrs. Joyce Stevenson, Principal

Differentiating Instruction in Middle Schools

The middle school years present the greatest learner variability. indeed researchers agree that variable rates of growth are a defining feature of these years. students of the same age vary tremendously in intellectual development, as they do in physical, emotional, and moral development. the national middle school association points out:

> Given the developmental diversity in any middle-level classroom, gearing curriculum to students' levels of understanding is a daunting task. In addition to different rates of development and learning styles, varying cultural backgrounds and prior experience must be taken into account. Efforts to reduce tracking and to include students with special needs in regular classes increase the diversity even further.... Both content and methods must be individualized. (National Middle School Association, 1995, pp. 21–22)

Turning Points, 2000 (Jackson & Davis, 2000), a 10-year update on the original Turning Points document that defined the key principles and practices of effective middle level schools, suggests "classes should include students of diverse needs, achievement levels, interests, and learning styles, and instruction should be differentiated to take advantage of the diversity, not ignore it" (Jackson & Davis, 2000, p. 23).

Featured Maryland Middle Schools

We have also grouped the middle schools together under an overview discussion of some of the practices that researchers have identified as uniquely relevant to the middle school context.. We wish to thank principals Mr. Joseph Mascari and *Ms. Sandra Ashe* and Mrs. June Clark, Instructional Facilitator, and teacher Joe Manko for sharing their insights into differentiating instruction in middle schools

Magnolia Middle School in Harford County Public Schools

Mr. Joseph Mascari Principal, and **Mrs. June Clark**, Instructional Facilitator

Rosemont Elementary and Middle School, Baltimore City Public Schools

Ms. Sandra Ashe, Principal and *Joe Manko*, Teacher.

Differentiating Instruction Across the Elementary and Middle School Grades

While the unique challenges of differentiating instruction in elementary and middle school grades are important to consider, we agree with Carol Ann Tomlinson, who, in her book, The *Differentiated Classroom: Responding to the Needs of All Learners* suggests that when thinking about differentiated curriculum and instruction, three questions are useful for analysis: What is the teacher differentiating? How is she differentiating? Why is she differentiating? **Tomlinson** explains that

Differentiate What

Refers to the curricular element the teacher has modified in response to learner needs. That is, it illustrates the teacher modifying
- content (what students will learn and the materials that represent that),
- process (activities through which students make sense of key ideas using essential skills),
- product (how students demonstrate and extend what they understand and can do as a result of a span of learning), or

- learning environment (the classroom conditions that set the tone and expectations of learning).

One or more of these elements can be modified for any given learning experience.

Differentiate How

Refers to the student trait to which the differentiation responds. It shows how the teacher differentiates in response to student readiness, interest, or learning profile. Again, any learning experience can be modified to respond to one or more of these traits.

Differentiate Why

Addresses the teacher's reason for modifying the learning experience. Teachers believe modification is important for many reasons. Three key reasons include access to learning, motivation to learn, and efficiency of learning. Any or all of these three reasons for differentiating instruction can be tied to student readiness, interest, and learning profile

Differentiating What, How and Why in Featured Schools

While each of our feature schools presents unique responses to the questions of what, how and why differentiate instruction, there are some aspects of elementary and middle school contexts that pose opportunities that we believe can provide useful pathways for other Maryland schools.

Differentiating Instruction in Elementary Schools

Differentiated Instruction at Green Holly Elementary School

St. Mary's County Public Schools

Mrs. Sherry Pinto, Principal

> **GREEN HOLLY ELEMENTARY**
> 46060 Millstone Landing Rd
> Lexington Park, Maryland 20653
> **Enrollment:** 753
> **Classroom teachers:** 56.6
> **Saint Mary's County Public Schools:** http://www.smcps.k12.md.us/
> **School Profile:**
> http://schools.publicschoolsreport.com/Maryland/LexingtonPark/GreenHollyElementarySchool.html

Describe the context and conditions in your school that led you to begin to differentiate instruction.

> When I arrived at Green Holly Elementary I sent a survey out to the staff.   I inquired about the staff's thoughts on the strengths and weaknesses of the school. I would meet with each team informally to get a feel for who they were and what the school culture is like and so forth. When I asked them about differentiating, they were unacquainted with the practices of differentiated instruction. Prior to coming to Green Holly was conducting staff development and school improvement in Garret County. So, differentiation is something I have been very comfortable with and obviously a huge advocate for. So when I arrived here I tried to get a since for where the staff was in their strides in differentiation to becoming a professional learning community and that is what led me to start the initiative.

How does your school use differentiated instruction to enhance student learning?

> We use it every day in the teacher's lessons and their lesson planners have a component for differentiation. Guided reading is a non-negotiable in the K-5 classroom. In their lesson plans they have to write down and show what the differentiation in their subject area. Every class should have on, above, and below for everything that they are doing.

> I do not require them to submit weekly lesson plans. However, I should be able to see differentiating it in their lesson if I walk in the room. I do not require weekly lessons unless there is a reason.

> I contracted out Gail Gregory author of *One Size Does not Fit All* *(http://www3.sympatico.ca/gayle.gregory)*.

>> She flew down for an entire week and worked with the staff. She worked with every grade level three hours at a time. She did make and take it sessions after school teachers had the option to attend. We would create the things she taught us.   You have to get the training component. Now when I have new teachers come in I send them to Jeff Moore who is from the county.

How have you met the managerial challenges of effectively managing and supporting the ongoing process of differentiation in the classroom?

> I cannot be everywhere at once. I am not a micromanager and I delegate responsibilities. The Instructional Resource Teachers (IRT) are assigned to each grade level. Their job is to support the teachers in the class. They obtain resources, run intervention groups and or help teachers' with specific needs.

Do you feel teachers are effectively prepared to differentiate instruction in their classrooms? If not, what kind of professional learning is required for teachers to become competent?

> Yes, I think they are prepared whether they are utilizing it to the best of their ability is another question. I feel like I have given them the preparation to make it happen.   If a teacher is not using Differentiated Instruction I will have a conversation with the teacher. It may be possible to solve it quickly but, I may have to call central office for additional training. I ask why, and what can I do and I try to make it happen.

Do you have any advice on the kinds of conditions that support differentiated instruction for improving student learning?

Ms. Sherry Pinto has provided the following resources and support for her staff:

- Common Planning Time
- Peer Visitation
- Creative use of Funding
- Para Educators support in the classroom
- Making resources available to students

Would you be willing to share information and resources with educators in Maryland, if so how?

Yes, I would share the following insight: Assess your staffs' needs. Figure out where they are. Bring in an outside consultant. It is hard to be a prophet in your own land. You need to have an external consultant, an expert in the field. Make sure the school leader is in the professional development to validate the professional development.

Differentiated Instruction at Havre de Grace Elementary School

HARFORD COUNTY PUBLIC SCHOOLS

Joyce Stevenson, Principal

HAVRE DE GRACE ELEMENTARY

600 Juniata Street
Havre de Grace, MD 21078-3482
Title I
Enrollment: 417
Classroom teachers: 22
Average class size: 17
Harford County Public Schools http://www.hcps.org/
School Profile:
http://www.hcps.org/schools/profiles/Profile_32.pdf#search=%22Joyce%20Stevenson%20H%20Grace%20Elementary%22

Describe the context and conditions in your school that led you to begin to differentiate instruction.

At Havre de Grace Elementary we have a very diverse population. We have 58% free and reduced lunch. We have children from poverty and we are presented with specific needs as a result. We now have 32 Hispanic children, which presents us with distinct needs as well with a different culture; many students do not speak English or come from homes that are not English speaking. We have a new influx of students

that come from homes priced $500,000 and up. Coupled with that population special education students are mainstreamed. We also have a self-contained special education classroom. We have children from all over the county come to our school if they have been unsuccessful in their home schools. Our goal is to help transition these students to the general education setting. Our population is such that there are very diverse needs in each classroom so there is a demand for differentiation in each classroom on going basis.

How does your school use differentiated instruction to enhance student learning?

"When you are planning for differentiated instruction, the planning depends upon the learning you see as the result of that instruction. It is constantly reflected upon and adapted accordingly and as that instruction is implemented, learning is assessed and that is the key word in how you use it to enhance instruction. It is the implementation of instruction, reflection on the learning based on data and the ongoing assessment of and for learning. That is what really makes leads to the need for differentiation."

How have you met the managerial challenges of effectively managing and supporting the ongoing process of differentiation in the classroom?

Principal Joyce Stevenson observes "All support staff all being available and accessible to classroom teachers is instrumental in getting that in place." She has provided the following resources for her staff:

- Cross Grade Articulation
- Block Scheduling
- Access to Enrichment teacher: Math teacher, Mentor, Gifted and Talented Teacher
- Common planning
- Peer Visitation (pre-conferences and debriefing)

Do you feel teachers are effectively prepared to differentiate instruction in their classrooms? If not, what kind of professional learning is required for teachers to become competent?

"Teachers are always being supported in being effectively prepared for differentiated instruction but this is something that is a struggle educationally with the ongoing professional development. You cannot to do it once or give them a book on Differentiated Instruction by Tomlinson to read."

"Each time a teacher gets a new group, curriculum, or reading series the process remains the same but how the process defines itself needs a certain period of acclamation. You can know what differentiated instruction is, you can even know how to do it. However, it defines itself differently with each group and each year and you have to differentiate PD based on where your teachers are. Therefore, the manner in which we provide PD needs to be differentiated. That is why we use surveys and menus. You have to differentiation based on the population and we are conscious of the need for ongoing preparation.

Do you have any advice on the kinds of conditions that support differentiated instruction for improving student learning?

"Build capacity among your staff and give them the supports they need to embrace the need for differentiated instruction. You have to have a group of professionals that are willing challenge the learning curve, see the need for differentiated instruction, understand what it looks like and appropriately prepare and implement and assess the effectiveness of it [differentiated instruction]. You cannot expect differentiated instruction to happen if you are not building capacity. That is a process. It dose not happen overnight, it does not even happen in a year. Identify your key players to help administration build capacity among the staff. Seek out two or three teachers at different grade levels Get them into conferences, provide opportunities for professional growth outside of the building. As you get the core group going in your building they become advocates for the success for what is happening in their room. That is the catalyst for it [differentiated] to gain the momentum. You do this slowly and intentionally and you engage the staff in the process. Ask them to identify their level of comfort and their needs. Validate the fact that you value their input by providing them with the stuff they have asked for. Whether it is peer visits, professional learning community resources, reading material. That is how you start. You start with a small group who has the interest and capabilities. Let them work as a professional learning community. Let them do the reading and have them talk about it, implement it and bring what they are doing back to the staff and they will bring other teachers into the fold. I do not think you can do this alone."

Would you be willing to share information and resources with educators in Maryland, if so how?

Just as teachers are hungry to talk to other teacher, administrators are the same way. Having the opportunity to say these are our struggles, have we conquered it all? No. However, are we making some gains? Yes. Having the opportunity to share information and resources with other professionals would always be something I could learn and benefit from.

Differentiating Instruction in Featured Maryland Middle Schools

Differentiating Instruction at Magnolia Middle School, Harford County Public Schools

Mr. Joseph Mascari, Principal

Mrs. June Clark, Instructional Facilitator

MAGNOLIA MIDDLE SCHOOL

299 Fort Hoyle Road Joppa, MD
21085-4899

Enrollment: 916
Classroom teachers: 53.5
Average class size: 22.8
Harford County Public Schools: http://www.hcps.org/
School Profile:
http://www.hcps.org/schools/profiles/profile_84.pdf

Could you describe the context and conditions in your school that led you to begin to differentiate instruction?

"We looked at MSA data and SRI reading scores and found that certain students were not meeting the expectations. We wanted to address the needs of students in reading who were low performing. We were able to join the Fast Track reading program, an intervention program designed for students behind two grade levels or more to accelerate their reading skills."

"Many special education students were not successful in reading. Because of the inclusion model at our school, we grouped students based on reading scores and divide classes into two groups. Teachers are required to teach different programs to different students. This allows them to group students by ability to better meet student needs in smaller sized classrooms"

"Our classrooms shrank from 25 students in regular language arts classrooms, to 12 students working with the special educator and 12 students working with a general educator using different Fast Track levels. We find reading on their ability level and have them work through the program to move to the next level."

"Students are assessed and work with teachers one on one as they progress through the Fast Track levels. Students are also taught to self-monitor their level without assistance from the teacher."

How does your school use differentiated instruction to enhance student learning?

"We have created a master schedule that includes intervention or remediation. The time is used to extend classroom time, provide enrichment, and give extra help and support to students. A program called Knowing Math (Houghton Mifflin) is used as a math

intervention. Students are assessed and the students with lower math scores are assigned to participate in Knowing Math during their Viking Period." It is a twelve-week program and looks at math in a different way. Knowing Math has a large verbal component. The teacher provides verbal directions and the students are asked to explain the process for solving math problems. The Knowing Math program is the best for individual remediation."

"The MSA Math Coach program is also used to familiarize students with the test. The Coach books expose students to tested skills above and beyond what was being done in their classroom."

How have you met the managerial challenges of effectively managing and supporting the ongoing process of differentiation in the classroom?

"An instructional leadership team (principal, assistant principal, instructional leader, and mentor) help to develop a professional development schedule. Once a week someone from the instructional leadership team meets with teachers during collaborative planning time. During this time, there is targeted planning on best practices, reflection on student work, and discussions of instructional implications from looking at the work. Everyone participates by bringing written samples to the group, which allows everyone to take ownership in instructional improvement."

Do you feel teachers are effectively prepared to differentiate instruction in their classrooms? If not, what kind of professional learning is required?

"In secondary schools, teachers look at what needs to be delivered and not necessarily how the learner can best learn. Countywide, the curriculum does not give a lot of room for teachers to differentiate and therefore teachers need to take on the initiative on their own."

"A small group of teachers work with Fast Track. These teachers are able to work with an expert provided by the county. The county representatives model lessons and help with instructional strategies. Sometimes teachers are asked to observe each other or observe the specialist. They created a professional learning community and target specific students with targeted strategies as a group."

Do you have any advice on the kinds of conditions that support differentiated instruction for improving student learning?

"It is important to have all staff members understand the goal. The school needs to look at implementing a schedule that is created based on student need and not school convenience. Students and teachers are moved around in order to obtain a best fit for a particular group of learners."

"It is important to investigate, build consensus, provide opportunities for training, and make training a priority. Your staff must buy into the remediation model. It is a teacher centered program and not a top down initiative."

"It is also important to meet with student individually, through conferences, share data and set goals for their learning to get them to understand what they need to do to progress. Students need to set individual goals. It is also important to conference with teachers to identify individual students who may challenge whole class learning."

"There are also individual contracts for students based on their learning. The focus is on instruction and not behavior. The expectations are clearly laid out for students and parents. Consequences are developed if students do not meet goals in their contracts

Would you be willing to share information and resources with educators in Maryland?

"You need to put a program in place that is the right for your students and staff."

"Differentiating for students is more than just a program, it is not just Fast Track or Coach, and it is a collaborative effort with students, teachers, and the community. It needs to be about individual students and focusing on their needs."

Differentiating Instruction at Rosemont Elementary/Middle School #63, Baltimore City Public Schools

Ms. Sandra Ashe, Principal
Joe Manko, Teacher

Rosemont Elementary/Middle School #63
2777 Presstman Street
Baltimore, MD 21216

Enrollment: 377
Classroom teachers:
Average class size:
Baltimore City Public School System: http://www.bcps.k12.md.us/
School Profile:
http://www.bcps.k12.md.us/Student_Performance/PDF/school_profiles/school063.pdf

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Describe the context and conditions in your school that led you to begin to differentiate instruction.

In 2001 when the new administration was brought in to turn around Rosemont, it was amongst the lowest scoring elementary schools in the state of Maryland. The percentage of students scoring in the basic or proficient level on standardized tests was in the single digits. With such dire student performance there obviously needed to be changes made in the instructional program to promote student achievement. Fast forward five years and the achievement story at Rosemont is entirely different. We have met and exceeded the adequately yearly progress measure each year and Rosemont is now one of the highest performing elementary/middle schools in Baltimore City. The success at Rosemont has many contributing factors from increased parental involvement to higher student expectations. One major factor in improving the instructional program at Rosemont has been the focus on differentiating learning.

How does your school use differentiated instruction to enhance student learning?

Learning is differentiated at Rosemont in a variety of ways. At the beginning of the year, we analyze all the MSA testing data and use the results to group students into performance level groups. Our partnership with Coppin University allows for a number of student teachers, tutors, and mentors who can work in the classroom with small, leveled groups of students while the classroom teacher works concurrently with his or her own group. Formative assessments are conducted throughout the process in order to see what specific skills students are strong or weak in and groupings are very malleable as students move in and out of groups depending upon their strength in a particular skill.

At Rosemont we have three supplemental teachers who pull small groups of similarly performing students to work on particular skills. In the small groups, these supplemental teachers will guide their students in activities to improve comprehension, fluency, phonemic awareness, number sense, basic computation, etc. Students are given benchmark tests at five times throughout the year to demonstrate improvement and to identify areas with continued deficiency. The benchmark tests provide valuable feedback to classroom teachers as to what skills need to be explicitly taught during the instructional time.

We have also employed technology at Rosemont to differentiate instruction. The Class Works program, made by Curriculum Advantage is installed on all school computers and develops a skills related sequence for each student based on their particular learning need. Students use Class Works as a learning center in the classroom, or come to the computer lab in either a whole class or small group to work on skills identified in the benchmark tests as needing extra attention. In addition to Class Works, we have developed a new instructional technology initiative at Rosemont to integrate more audio, video, and multimedia learning into the classroom to meet the needs of multi-modal learners."

How have you met the managerial challenges of effectively managing and supporting the ongoing process of differentiation in the classroom?

Each year at Rosemont we have a summer focus group that reflects on the past school year and makes plans for improvement in the upcoming year. Several teachers come to the focus group and therefore there is a great amount of staff support and buy in to any initiative that is addressed by the committee over the summer. This, for example is how our instructional technology initiative was created and implemented by the staff.

Our supplemental teachers who lead the differentiation effort gather the student MSA data, compile and analyze the information, and work with the classroom teacher in order to compose the groups. These supplemental teachers are veteran teachers who have proven results and therefore have a lot of instructional credibility throughout the building. The staffing structure at Rosemont has effectively mitigated many of the managerial challenges often encountered by schools that try to differentiate instruction.

Overall, it is a total team effort from the classroom teachers who develop the instructional plan, to the supplemental teachers who pull groups and develop skills oriented instruction, to the special educators who work individually with special needs students, to the instructional support teachers who introduce various differentiation strategies, to

the technology teacher who compiles testing data and finds materials to be used in the classroom online, everyone works together to differentiate learning for our students. "

Do you feel teachers are effectively prepared to differentiate instructional in their classrooms? If not, what kind of professional learning is required for teachers to become competent?

It really depends on the teacher and the classroom. Differentiating instruction effectively requires a substantial investment of time and therefore experienced teachers generally have greater success. At Rosemont, our supplemental teachers and special educators help to guide and mentor our newer staff members on methods and strategies for differentiating instruction. These teachers meet almost daily to discuss strategies, regroup students, analyze the work of classroom individuals, etc. It is through this close collaboration that educators develop and hone their strategies for differentiating instruction for their students."

Do you have any advice on the kinds of conditions that support differentiated instruction for improving student learning?

To effectively differentiate instruction, it really takes a team effort on behalf of the entire school and particularly amongst all the educators who are working with a particular group of students. There needs to be constant communication between classroom educators, special educators, social workers, and any other staff member working with a particular group of students. It really must be a school wide charge with the correct personnel in the appropriate roles to be conducted effectively.

Often times, conducting the legwork for teachers like compiling data, categorizing testing results, and assembling prospective groups can help inspire more effective differentiation by classroom teachers. Having this information processed and readily available for teachers to use cuts down some of the more time intensive steps of seeking out the data and compiling it and allows the classroom educator to focus on the instructional program to meet the differentiated learning goals."

Would you be willing to share information and resources with educators in Maryland, if so how?

We would be more than happy to share some of the information and resources that have contributed to our successful program of differentiation. This can be obtained through a variety of means including contacting the school, scheduling a visit, or talking to some of our classroom and supplemental teachers.

SECTION V Research Based Lessons in Differentiating Instruction

This section presents lessons in differentiating instruction drawn from recent research by graduates of the College of Education, University of Maryland that we have organized to respond to three questions:

1. What can we learn about differentiating instruction from teachers?

Lessons in Differentiating Instruction from Teachers *Dr. Daria Buese:*

2. What can we learn about differentiating instruction for students?

Lessons in Differentiating Instruction for Limited English Proficiency Students

   Dr. Shannon Bramblett- Burke:

Lessons in Differentiating Instruction from Maryland Youth Who Received Special Education Services *Dr. Alice Faber*

3. What can we learn about organizational and cultural practices that support differentiated instruction?

Lessons in Differentiating Instruction in the School Library. *Dr. Anita Voelker*

Lessons in Differentiating Instruction from Africentric Education

   Dr. Kmt Shockley

Lessons in Differentiating Instruction from a Social Studies Classroom

   Joe Manko

Lessons in Differentiating Instruction From Teachers
Dr. Daria Buese

The lessons presented in this section come from a study of instructional practices of Maryland mathematics teachers conducted by Dr. Buese. In this section, Dr. Buese presents several lessons in differentiating instruction that we can take from the instructional practices used by Ms. Blakeway in her 8th grade general mathematics class, and those used by Mr. Clark in his 5th grade mathematics class.

Lessons in Differentiating Instruction from Annette Blakeway – 8th Grade General Mathematics Class

Ms Blakeway's Lessons in Design Principle 1:

   Use Strategy 1: *Design tasks and assessments related to content standards with the intent of having all students understand the essential principles and relate the principles to their own lives and experiences.*

Use Strategy 2: *Develop instructional plans that use different materials, time frames, student groupings, and modes of student expression to ensure that each student will have fully supported opportunities to develop and extend the targeted understandings and skills*

<div style="border: 1px solid black;">

Design Principle 1: *Design differentiated instruction for deep knowledge*

</div>

In Ms. Blakeway's eighth grade general mathematics classroom there were about 26 students in a heterogeneous grouping. The lesson that I observed illustrates the high level of academic performance Ms. Blakeway expected of and received from her students. I considered this lesson to exemplify high-quality differentiated instruction because of the high level of student engagement throughout the class and the apparent collective understanding of difficult concepts. These practices were common to Ms. Blakeway's instruction.

Ms. Blakeway established high intellectual and behavioral expectations of her students from the first day of school. Routines around the use of instructional materials were instilled early on in the school year and characteristics of high-quality work were regularly reviewed and modeled (by both the teacher and students) and consistently monitored and assessed. Thus, students became experienced in "habits" that promoted the deep learning of mathematical concepts and skills and enabled the regular participation of all students in challenging work.

The following are essential beliefs that Ms. Blakeway practices:

- *Hold high expectations for all students.*
  Ms. Blakeway taught difficult mathematical concepts that one might expect to see in a full-fledged algebra class.
- *Time is essential to master a concept.*
  The students had been working on these algebraic concepts over a period of weeks prior to this class.
- *Routines can create positive structures for learning.*
  The 80-minute class began with a "warm up" in which the students' graphed linear equations on coordinate planes and determined their slopes. While every student is engaged in the warm up, there is virtually no idle chatter among the students.

Lessons in Differentiating Instruction from Stanley Clark's – 5th Grade Mathematics Classroom

The following excerpts are taken from one lesson in Stanley Clark's 5th grade mathematics classroom. In Mr. Clark's school, the 5th grade students were ability grouped for math and Mr. Clark had the second to "lowest" achieving group. Despite the grouping, there was a significant range of skill and knowledge development among his students. This lesson, "The Quiz," was constructed around a formative assessment on fractions that Mr. Clark used with his students. It demonstrates how the teacher used the review for the assessment to scaffold instruction of mathematical content. Mr. Clark used the quiz itself to differentiate instruction for students who were struggling with the content as well as a means to monitor student progress. In the final excerpt called "Mr. Clark and the Paced Curriculum," Mr. Clark explains his thinking about differentiating instruction in the context of curriculum pacing. He also mentioned how the teachers in his fifth grade team used a unit assessment to compare student progress. Mr. Clark's example opens avenues

for reflection on collaborative teacher learning and teacher leadership, which support differentiated instruction.

Mr. Clark's Lessons in Design Principle 3: *Use continuous authentic assessment to engage student acquisition of proficient understanding of content, and on that basis revise homework, activities and key assessments to provide challenges and opportunities for students to deepen understanding by pursuing interests in content*

> **Design Principle 3:**
> *Map Essential Content Knowledge, Understanding and Skills Into Curricular Pathways that Deepen Student Knowledge*

The Quiz. It was the end of January 2003 and Mr. Clark's class was beginning a unit on fractions. In previous weeks, the students investigated prime and composite numbers, prime factorization, and most recently, comparing fractions. The objective of this day's lesson was to change unlike fractions to like fractions. This was not the first day on this topic so the class began with a review of it. Mr. Clark's approach to the review was to encourage the students to think about fractions holistically, as parts of a whole. He began the lesson with a drill. He listed the fractions 1/6, 3/7, 7/10, 5/8, and 7/8 on the board and asked the students to organize them into groups: closer to 0, closer to 1/2, or closer to 1. Although this was a review of fractions, Mr. Clark showed the relationship of the fractions to percents. Under "closer to 0" he wrote 0%, under "closer to 1/2" he wrote 50%, and under "closer to 1," 100%.

Mr. Clark's Teaching Practices

- Mr. Clark presented the problems in the context of a situation they may encounter in their lives.
- He asked his students to think of the fractions as test scores by asking them if they got one out of six problems on a test correct, would their score be closer to 0%, closer to 50%, or closer to 100%. They discussed simple percents before and Mr. Clark referred to them regularly on this day and others.

> Mr. Clark's lessons contained regular references to students' real life experiences as in the example of comparing fractions to experiences they had in school.

- After allowing the students to work independently for about five minutes, Mr. Clark began to discuss the drill with the class. He did not take them through a mathematical process of changing unlike fractions into like fractions to determine their relational values,
- He tried to develop their number sense by asking them how they knew that 7/8 was closer to 1.
- He also showed how 7/10 could be thought of as 0.7 and reminded them that if they were rounding 0.7 to a whole number, they should round it to 1 rather than 1/2, justifying the placement of 7/10 into the group that was closer to 1.
- In this five minute warm up drill he reviewed the relationship of fractions to percents and decimals and used rounding as a means to establish reasonable answers.

Such scaffolding of concepts was common to Mr. Clark's teaching. On any given day that I observed his class, Mr. Clark linked concepts previously explored to new concepts.

Mr. Clark's Lesson in Design Principle 3*: Make time and create opportunities to work with students on skills they are lacking and ask them to apply those skills to their assessment tasks.*

> **Design Principle 3:**
> *Map Essential Content Knowledge, Understanding and Skills Into Curricular Pathways that Deepen Student Knowledge*

Twenty-five minutes into the class, Mr. Clark announced, "We have a quiz we're going to take today. Who are my shakies?" "Shakies" referred to students who were still unsure about the concepts on the quiz.

Nine students raised their hands and Mr. Clark instructed them to go out into the "pod," the common area between the fifth grade classrooms. Sixteen students remained in the room and were told to move to the other side of the room where they were farthest away from the door leading to the pod. There were five problems on the quiz. The first asked students to find the least common multiple of 8 and 12. Question 2 asked students to show or explain which day two workers would have off together if one had every sixth day off and one had every fourth day off. The third question listed the numbers 2, 3, 6, 9, 12, 18 and asked which two numbers had the least common multiple of 18 and the greatest common factor of 3. Question 4 involved explaining how to change two unlike fractions into like fractions, and question 5 asked students to find the least common multiple of three pairs of numbers: 2 and 3, 3 and 4, and 9 and 4.

Mr. Clark went out into the pod to help the shakies. I could hear his coaching, "What does a multiple mean? Let's list the multiples of 8. I'm not going to do all the work." As students supplied the answers, he wrote them on the board in the pod.

Mr. Clark's Design Principle 4 Lesson: *Move among students to view and take notes on their work, and to coach students as they work.*

> **Design Principle 4:**
> *Conduct Evidence Based Quality Audits of Curriculum and Instruction Designs*

After a few minutes Mr. Clark left the students to work on their own and came back into the classroom where the other students had been working silently and independently.

He walked around the room checking the students' work and told some to make corrections when he saw incorrect answers. He stopped to work with students who were clearly having trouble. While Mr. Clark monitored their work, I eavesdropped on two girls who began to help each other. One girl was having trouble finding two numbers with the least common multiple of 18 out of the list of 2, 3, 6, 9, 12, and 18. She was working very hard with the help of the girl beside her to find the answer. Her partner did not reveal the answer but coached her friend in much the same way Mr. Clark coached his students. Mr. Clark did not intervene, he believed quizzes were as much a learning exercise as they were an assessment and he allowed this opportunity for students to teach each other. The students took the quiz seriously and the student 'teacher' was successful at helping her friend figure out the answer without giving it away.

Mr. Clark moved back and forth between the pod and the classroom. The students continued to work diligently on the quiz and one of the "non-shakies" asked if he could just show his work on problem four rather than explain it. Mr. Clark told him he must give an explanation and added, "That's part of the nastiness of the test." It was not unusual for Mr. Clark to admit to students that there were certain expectations on the

way test answers were to be given and, like it or not, the format of an answer mattered as much as a problem's solution.

Mr. Clark's Design Principle 4 Lesson: *Use formative or ongoing assessments to chart the progress of students, and continuing to develop small-group and individual learning plans for students who need additional instruction and exploration in a given area and for students ready to move ahead.*

> **Design Principle 4:**
> *Conduct Evidence Based Quality Audits of Curriculum and Instruction Designs*

I interviewed Mr. Clark the day after the quiz. I was curious about the process he used in administering it. I asked him why he helped students as much as he did and how he used the assessment. He responded:

> *The quizzes I see are more of a teaching tool for me. The quiz is more for me than it is for the kids. I need to see if they're getting the concept. That's why these quizzes do not have a letter grade on them. Because I do not want a child who does not understand to get discouraged on the quiz and then be afraid when the unit assessment is coming up. So the quiz is more for me so that I can see if I'm doing my job and the information is sinking in. The unit test is more for the grade for the math class. (Mr. Clark, Interview 2)*

The excerpt above illustrates design principles working together. Mr. Clark used a formative assessment as an opportunity to work with students who were struggling with the mathematical content. He allowed students to make their own assessments about their understanding by requesting that the "shakies" work with him in a small group. Most of the students who did not self identify as shakies worked independently except in the case of the girl

> *Mr. Clark worked hard to instill a sense of academic integrity and personal responsibility among his students that encouraged self-monitoring in learning and behavior.*

who coached her friend. Mr. Clark was well aware that one girl was getting peer help, but rather than discouraging this practice he observed them working together to assess both students' progress. Students did not take advantage of Mr. Clark's practices described here. He worked hard to instill a sense of academic integrity and personal responsibility among his students that encouraged self-monitoring in learning and behavior.

Pacing:

Mr. Clark's school district implemented a new mathematics curriculum in the 2002-2003 school year that was paced so that all students, regardless of ability level, were studying the same content at the same time. Each teacher had a pacing guide that outlined the curricular outcomes and topics the students were to cover on any given day and suggested activities and resources the teachers could use in their classrooms. Although regimented, Mr. Clark described the curricular pacing as sufficiently flexible to permit him to make his own decisions on how best to teach his students:

> *We're fairly well scripted on the pacing of the units…it's all broken down, three weeks on this unit, two weeks on that unit, an assessment at the end. So it's pretty cut and dry as to when you're going to teach and what you're going to teach. Now how you teach it is up to you for the most part. The fractions unit – we have a prepared unit that's been given to us that we use that will teach towards the outcomes that are measured on the assessment. But – we're not just handed a unit, we're handed the outcomes and then it's up to you to plan to meet those outcomes based on your students' needs. There is some flexibility. (Clark, Interview 1)*

When I interviewed him in March 2003 he had recently given his students the district unit assessment on fractions and told me that he was a little off schedule but within a week of the other classes. He also informed me, "on the last assessment, which was understanding fractions, my 'quote' lower paced group performed better than two of the groups that are above them" (Clark, Interview 3). This comparison notwithstanding, when the time came to move out of the fractions unit and into a geometry unit, Mr. Clark was not personally satisfied with some of his students' performances on the unit test. He planned to move on to the geometry unit as the pacing guide instructed, but had no intention of discontinuing the teaching of fractions with his students who were still struggling. He explained:

> *I think that we do have to follow the pacing schedule because we do have to cover the material by the end of the year. But you can rob Peter to pay Paul….But I can't short change them because these are important concepts that they have to have to move on in a lesson. So really it's a balancing act. (Mr. Clark, Interview 2)*

Mr. Clark stated that after the fractions unit he lagged behind the pacing schedule by about a week, but he was obliged to move to the next unit even though he knew a number of his students had not achieved the understanding he hoped for. For some of those students, Mr. Clark was unable to abandon the need to have mastery so he developed his own strategy to provide opportunities to review concepts and procedures with students who were struggling. In the instance of the fractions unit, he individualized instruction with one eye on the curriculum pacing:

> *The geometry unit right now is a good place where I can separate children; take the ones that need additional help adding and subtracting fractions. All the other kids are working on geometry. The beginning of geometry, they can catch up with the basics and I'll get them all back together again. But I can separate them and make sure that my ones who struggle on the adding and subtracting of fractions have an understanding of that before I send them on. (Mr. Clark, Interview 3)*

Design Principle 4:
Conduct Evidence Based Quality Audits of Curriculum and Instruction Designs

Mr. Clark's Lessons for Design Principle 6: ***Work with other teachers to develop curriculum together and meeting periodically to evaluate is effectiveness, suggest modifications for future consideration, and share resources.***

Design Principle 6:
Developing Differentiated Instructional Systems Depends on the Collective Learning Capacity of a School's Professional Learning Community.

Many school districts in Maryland use a mathematics curriculum in which curricular topics are on a set schedule. Some teachers look at this situation, as working in an instructional straightjacket but Mr. Clark did not approach enacting the curriculum as such.

Mr. Clark explained how he used his professional discretion and knowledge of his students' learning to make decisions on structuring review work for individual students. "When teachers see themselves as leaders, they empower students and create enabling environments for leading and learning in their classrooms" (Gonzales, 2004). Mr. Clark's principal respected his teaching expertise and supported a school culture that promoted collaborative teacher learning and teacher leadership.

Also, although Mr. Clark did not have access to a mathematics specialist in his building, his thinking about the issue of curriculum pacing and its relationship to student learning points to the importance of grade level team planning. Mr. Clark was a newcomer to collaborative planning and as a veteran teacher had misgivings about its benefit despite his principal's efforts to promote team collaboration. However, by working with his team he did receive information that he used to plan instruction for his students. For example, Mr. Clark told me that the members of the fifth grade team discussed where their classes were in relationship to one another on the pacing schedule.

I assert that better collaboration with other teachers and access to a content area specialist may have eased Mr. Clark's burden of planning differentiated instruction by offering alternative instructional strategies and resources for struggling students.

Lessons in Differentiating Instruction to Support Students' Diverse Cultural Networks

Dr. Shannon Bramblett-Burke

Classrooms are places where cultures inevitably and quite literally converge. All students, especially English language learners, make cultural transitions in the classroom. For this reason, it is especially important that educators establish a welcoming environment for students from all cultural backgrounds. The psychological and emotional difficulties newcomers to a culture experience have been well documented by language acquisition researchers.

Researchers tell us that beyond the need for English language instruction, cultural and social differences should be recognized. *Five standards for effectively teaching diverse learners* have been proposed by researchers:

1. Joint productive activity, where teacher (expert) and students (novices) work closely together to accomplish joint projects.
2. Developing language and literacy across the curriculum, where language development is continually emphasized and assisted through modeling, eliciting, probing, restating, clarifying, questioning, and praising.
3. Making meaning, where learning is highly situated within and concerned with the real-world contexts of students' lives.

4. Teaching complex thinking, where students are involved in complex tasks and instruction shifts from basic skills to complex manipulation of problem solving in content domains.
5. Teaching so that students are engaged in learning through the use of language and dialogue, especially in relation to real world tasks.

Effective differentiation of instruction addressing these standards begins by recognizing that helping students maintain their ties to their cultural networks is critically important.

The strategies in this section were identified by Shannon Bramblett (2004) in her doctoral research at the University of Maryland. The strategies focus on utilizing students' cultural networks effectively to improve instruction. They show us how to utilize students' cultural networks as a fund of knowledge. Bramblett identifies four strategies that teachers and principals can use to support students' diverse cultural networks:

> *Cultural networks* refer to students' system of beliefs and ways of being. Students' cultural networks serve as a foundation and a filter through which all future learning flows.

- Build a learning environment that welcomes students from cultural backgrounds reflected in the student body.
- Design instructional activities that invite students to use their cultural networks to build understanding of new ideas and concepts.
- Assist students in making cultural transitions.

Lesson 1: *Build a learning environment that welcomes students from cultural backgrounds reflected in the student body.*

What Teachers Can Do:

- Verbally acknowledge the value of other cultures.
- Symbolically value students' cultures in the classroom by carefully displaying artifacts from students' cultures.
- Value students' cultures by using objects students' create that represent their cultures in the classroom.

Principals' Actions:

- Ensure that the public spaces in the building communicate an appreciation for various cultures in the school.
- Encourage teachers to communicate value of students' cultures.
- Provide sustained high quality professional development to teachers and staff about various student cultures.

Lesson 2: *Design instructional activities that invite students to use their cultural networks to build understanding of new ideas and concepts.*

What Teachers Can Do:

- Begin instruction by activating students' cultural networks.

- Invite students to compare and contrast their cultural background with those of others.
- Build opportunities in assignments for students to communicate with other students about their cultural networks.

Principals' Actions:
- Promote the understanding in the school that all learning is a cultural activity.
- Provide opportunities for teachers to discuss strategies for activating students' cultural networks.
- Plan school-wide learning opportunities for students to share their cultures.

Lesson 3: *Assist students in making cultural transitions.*

What Teachers Can Do:
- Provide reflective opportunities for students to write about cultural transitions they are making.
- Promote awareness of support services that are available to students.
- Help students to build relationships with older students who may be further along in making cultural transitions.

Principals' Actions:
- Ensure that there are adequate supports not only for students, but also for families to receive support they need transitioning to the school community.
- Provide material resources, time and support for teachers and staff to involve all families in the educational process.

> **For Further Study of the Issues Raised in Shannon Bramblett Burke's Contribution See:**
> The Power of Positive Identity. By: Violand-Sánchez, Emma; Hainer-Violand, Julia. **Educational Leadership**, Sep2006, Vol. 64 Issue 1, p36-40, 5p, 3c;

Lessons in Differentiating Instruction for the Highly Capable Student in a School Library

Dr. Anita Voelker

Research about school libraries is a relatively new and expanding field of study. Early findings support the importance of a quality school library program for students' reading achievement. However, little has been written about the literacy experiences and understandings of children who have access to a quality school library program. My dissertation research suggested that a quality school library is an environment where students can have opportunities to gain deep knowledge.
Based on this research for this contribution to the Design Principles Report

- I make transparent the need for differentiating instruction in a school library by presenting an excerpt from the literacy portrait of Caitlin, a highly capable fourth grader reader.
- Second, after establishing the need for differentiated instruction in school libraries, I provide four strategies to assist teachers and librarians in using Design Principle 1: Design Differentiated Instruction for Deep Knowledge.
- Third, I provide three lessons for school administrators to maximize opportunities for students to gain deep knowledge because principals and other administrators are essential in the process of fostering opportunities for teachers and librarians to design learning environments.

The Highly Capable Reader's Need for Differentiated Instruction

Caitlin (all names are pseudonym) was a good choice to represent competent readers who need differentiated instruction. Through one year of observation, interviews, and analyzing Caitlin's reading and writing, I discovered Caitlin's avid interest in reading was limited to books with a narrative rhetorical form. Narrative rhetorical writing includes a story-like format, where setting, character, and plot are integral to the writing. I discovered that Caitlin's affinity for reading narrative reflected in her writing and her reading of research.

For example, Caitlin avoided reading exposition. Exposition is often formatted as "reports and essays found in the world of business, government, and academe" (Chambliss & Calfee 1998, p. 30). It was somewhat surprising to discover that Caitlin's preference and experience with narrative text impeded her ability to gain deep knowledge when she needed to read resources written in the expository rhetorical pattern.

I compared Caitlin's writing to the resource (i.e., book) she used in her research to write a biography of John Harris. In her bibliography, Caitlin included an historical text, *Life by the Moving Road* (Barton, 1983). She did not include any of the historian's evidence that suggested the incident was a myth. Instead, she included the story in the narrative incident into her biography as if it were a fact. The inaccurate information was then disseminated to the other students when Caitlin shared her biography orally with the entire class.

> *Despite being a highly capable reader, Caitlin, a narrative connoisseur, demonstrated no comprehension of the expository text that surrounded the narrative incident.*

Lessons in Differentiating Library Instruction to Develop Deep Knowledge in the Highly Capable Reader

To embrace the first design principle and relate it to the highly capable reader in the scenario described in the previous section, the librarian and teacher would begin by designing or selecting appropriate objective and assessments for developing deep knowledge.

Lesson 1: Assess the Essential Knowledge

Caitlin, the most capable reader in the class, had difficulty reading exposition. She ignored what was written in expository rhetorical writing, and used only a narrative story included in that exposition. In doing so, she added inaccurate information to her report. Importantly, she did not acquire the depth of knowledge possible had she understood how historians write. Based on this finding I suggest:

- The librarian and teacher would benefit by determining the essential content and the essential literacy skills the children need to accomplish the objective.

Lesson 2: Assess the Readers

In order to design learning environments that maximize opportunities for students to gain deep knowledge, there must be assessment of the students' needs. One such assessment would be *The Readers Self-Perceiver Scale* (Henk & Melnick, 1995) that enables the learners to provide information about how they feel about themselves as readers. Teacher and librarians could adapt the scale and add items to understand how students perceive themselves able to do a particular type of research task.

Lesson 3: Assess the Texts

The complexity associated with using text in the library cannot be over estimated. In order to use texts, the children mediated a number of language systems. To use the technological sources, the children mediated the language system of the computer. All of these language systems complicated the children's ability to gain deep knowledge. Consequently,

- when the children experienced difficulty with text, they did not have adequate knowledge and understanding of how to use and participate with any part of the various language systems.
- When students struggled to know how to use these more hidden language systems, they often were unable to make meaning of the text, despite understanding the outer layers of the language system.
- Because they were not apprenticed in how to use many of the inner language systems, they were often unaware of any misunderstandings that related from their inexperience.

Lesson 4: Assess the Importance of Social Interaction

The fourth strategy suggests that educators making social interaction an integral learning tool in the school library environment. As Dyson (2003) noted, social participation, more than any other area, motivates children in their learning experiences. Although I evidence of positive social interactions among students, the teacher and librarian did not use this naturally occurring experience to foster deep understanding of the text. I found the children had no awareness, much less practice, in keeping notes about literary conversations. The children experienced making meaning of what was found in sources naturally, but not through instruction.

- As the children gather socially to share their knowledge, teachers and librarians must recognize that this type of learning is a powerful way to learn *through* language. By using social interaction more deliberately, learners begin to view their conversations as a vital part in deepening their knowledge.

Three recommendations for administrators from a school librarian

Recommendation 1: Make resources available

The school library in my study had the kinds of resources that should be available to all children. Technologically, this library had ample computers: one for every two students. I found that the children were the most engaged and motivated when they worked at the computer in dyads. When the children worked at the computer alone, the other children spent time with the

The resources present in this school library allowed the children to have a number worthwhile learning experiences. But without the librarian and staff, the resources alone would not advance the children's literacy experiences

print resources. This system validated the importance of print and technology.

All computers were well equipped. In addition to an Internet connection, each computer had a wide array of software programs and electronic games. On each computer, the children could access the online catalog and the school library homepage. By accessing the online catalog, the children could easily locate any book in the library. Using the carefully crafted library homepage, the children could link to numerous sites.

Print resources varied. The bookshelves included a range of genres, topics, and levels. Additionally, multiple copies of many books were available to encourage partners or small groups to read the same book. The reference section included items such as almanacs, as well as more unusual references. A well-stocked and up-to-date collection of magazines was also incorporated into the library.

Recommendation 2: Hire a certified librarian and library staff when establishing of a school library

The value of a librarian who has at least one staff person cannot be overstated. Having a library aide enabled the librarian to keep the library opened throughout the school day. The librarian did not close the library when she was teaching, having a meeting, or eating her lunch. The aide provided assistance to the children whenever the librarian was not available.

Because the librarian organized the author visits, Caitlin entered an essay contest and was selected to have lunch with the visiting author. Through this opportunity, Caitlin announced that she was re-committed to becoming a writer herself. The annual author visit was not only an opportunity to promote reading and writing, but it was also an inspiration to the children as they considered career choices.

The children also had positive and differentiated learning experiences linked to a combination of resources and the librarian's decisions. Similarly, another student was also encouraged in his desire to become a marine biologist because he was able to read every issue of *National Geographic for Kids* without having to buy a subscription. The librarian kept the magazines up to date and included a variety of other magazines in the bins.

Therefore, one important instructional recommendation is to suggest that all school libraries have, at minimum, what is currently present in this setting: superb resources that relate to the curriculum and a certified librarian and staff. Without the facilities (i.e., computers, Internet connections, rich print resources, space, and flexible schedules) and a certified librarian and staff, children would not be afforded the kinds of environment where students have ample and unique opportunities for acquiring deep knowledge.

Recommendation 3 Provide time for orchestrating and developing the four strategies for differentiated instruction in a library

Because I viewed the library through the children's experiences and understandings, I know that the children viewed each adult as an individual expert, not a collaborative team. Considering this information and my analysis, I recommend that the teacher and librarian have opportunities to engage in professional conversations about how they will differentiate instruction. The four strategies I recommended (i.e., assessing the essential knowledge, assessing the readers, assessing the texts, assessing social interactions) will take coordination to implement. Without time and opportunities to meet and attempt the strategies, teachers and librarians are less likely to design differentiated instruction for deep knowledge.

Final Thought

The combination of resources, professional staff, and organized time can enhance learning for all children, regardless of race, gender, reading ability, or reading experiences. There are many decisions made by the librarian about the resources that had a positive impact on the literacy practices of the children.

Lessons from Students With Learning Disabilities

Dr. Alice Faber

Our awareness of the importance of the differentiation of instruction can be greatly enhanced by understanding the impact that it can have on the lives of students. Therefore, it is useful to hear what students with disabilities have to say about their own experiences in the educational settings. The following young adults with identified learning disabilities shared some of their experiences in various academic situations with Alice Faber during her study of self determination in youth with learning disabilities. Quinton, an African American community college student, Mindy, a recent community college graduate, and Rana, a single mother in community college talked about the impact that access to accommodations, and their educational experiences had on their academic progress.

Quinton

Quinton was unsuccessful in elementary school, and he expressed a profound bitterness toward his experiences in the public school system. He reported that he rarely completed homework, and he needed something to compel him to change. This had constrained his development until he developed the skills he needed to move on. At the same time his teachers let him pass without ensuring that he had the necessary skills for the next grade. Looking back on this experience, Quinton felt this had been a great disservice to him and to all students who do not succeed. It was not until the end of middle school that Quinton was identified as having a learning disability. As a result of testing, he was placed in a private high school by his school district. He felt that the school district had chosen a path for him to take without having provided him any other options. At that school teachers tried to steer him into more hands-on occupations. Quinton felt that his teachers should have tried to broaden his possibilities, not limit them. At the same time Quinton was given the opportunity to learn about himself and his learning disability in high school. "My teachers at this school taught me that it could be worse, and you can get through it. They mostly taught me how to get over my disability." They introduced him to the use of the computer as an aid for learning, and he still uses the skills associated with its use in college.

Quinton's Strategies

- Quinton used the computer for reading and writing and gained access to voice recognition software.
- His instructors gave out PowerPoint copies of notes
- He used a tape recorder
- Occasionally he asked other students in his classes to allow him to copy their notes.

> *"Basically when I need to read my textbook or my homework, I use the software called Readwell, and I scan in the textbooks or I scan in any text. Also, when I write my papers and my documents I use a program that can read everything I might that I type."* **-Quinton**

Mindy

"Just because a person had some type of disability, they should not be excluded from the regular classroom", said Mindy, as she reflected on her elementary school experience. "I think I could have learned just as well if I had been in the regular classroom." She also worried about the negative effects of being labeled as having a learning disability "At my elementary school, the children with learning disabilities were treated the same as children that were retarded — they were in classes where I don't think they could advance themselves." Mindy commented on her experiences in elementary school. "I knew I was being labeled because I was in the lowest reading and math groups. I knew my peers were labeling me. I mean, I was one of the 'stupid' kids." Mindy said "after a while, you started to believe that you were stupid."

Mindy's Strategies

Despite these experiences Mindy developed the following strategies that enabled her to advance to college study that can provide lessons for differentiating instruction:

- She developed a high degree of self-awareness
- She took college course to learn all the rules of grammar and punctuation for the first time.
- She learned test-taking skills and other strategies in the college.
- She learned to ask for extra time, an accommodation that she carried over to college.
- She learned ways to seek accommodations for learning problems

> *"So now that I am in college, I'm learning stuff that my (younger) brother is learning now in high school"* **Mindy**

Rana

Rana had attended eight schools, including the community college she was attending when she spoke about her previous school experiences. Rana had been removed from these schools but did not fully understand why beyond realizing that she had not been doing well. No one talked to her about her learning disability. She repeated the first grade and then went on to second grade. Rana remembers students laughing at her because of her difficulty in reading. This left a lasting impression on her. "I still can't read out loud because I still remember people laughing at me. However, even though she had begun to have doubts about her ability to learn, she still had a desire to succeed. . "I knew that even though I had these things that held me back, I wanted to be an archaeologist."

Rana's Strategies

Despite the challenging experiences in school, Rana

- learned her own best approaches to studying and learning.
- came up with several reading strategies on her own.
- advocated for herself to receive accommodations in high school

Lessons for Differentiating Instruction

Teachers and principals can draw three lessons in differentiating instruction to meet the needs of students with learning disabilities from Alice Faber's dissertation research:

Lesson 1: Challenge All Students

A key theme running through the experiences of each of these three young adults was a common complaint about their education: They all expressed regret at not being challenged enough.

> *"When it came to big words I guess I had to pace myself. I could read big words, but little tiny words, like "is" and "are" and "the" — I would mess them up! I would see a small word and I would say, "Oh yes, I have to rush to read it, because it's so small, so miniscule, so remedial."* **Rana**

> *"I knew that even though I had these things that held me back, I wanted to be an archaeologist."* -**Rana**

Rana was angry that she had not been challenged in math; Mindy was upset that she had not received good instruction in written-language skills; and Quinton felt that he should have received better instruction in reading and that he never should have simply been passed on from grade to grade. The consequences from this lack of challenge left a scar that will take time and effort to heal.

Lesson 2: Address Student Learning Styles and Needs

Quinton, Mindy and Rana all encountered serious difficulties in the K–12 educational setting, and suffered painful assaults to their self-esteem due to a lack of academic progress as indicated by conventional measures of success. They felt labeled and blamed for a lack of success that was not an intentional result of their actions, but was a failure on the part of the educational system to deal effectively with their particular learning styles.

Lesson 3: Provide Appropriate Accommodations

Quinton, Mindy and Rana learned how to compensate for their disabilities, and the availability of accommodations was a powerful tool that allowed them to succeed academically. The problem was that accommodations were not always available, and sometimes asking for them undermined their need for anonymity.

For Further Study of the Issues Raised in Alice Faber's Contribution See:
Challenging Deficit Thinking. By: Weiner, Lois. **Educational Leadership**, Sep2006, Vol. 64 Issue 1, p42-45, 4p, 2c.

Lessons in Differentiating Instruction From Africentric Education

Dr. Kmt Shockley

Black children living in the urban cities of America largely depend on public schools for an education. However, public schools face the lingering problem of not addressing the cultural needs of Black children and communities. There is a mismatch between Black cultures and that which public schools offer, expect and are willing to incorporate. Many teachers and administrators have been unable to incorporate successful strategies for addressing the mismatch between the larger culture (which includes public schools) and Black (African/African American) cultures. Furthermore, much of the literature (e.g. multicultural education) fails to provide strategies that consistently produce positive cultural and educational outcomes for Black children. One approach to addressing the educational and cultural mismatch problems for Blacks that is becoming more popular is the institutionalization of African-centered, or Africentric education.

In responding to the question: **What can we learn about organizational and cultural practices that support differentiated instruction?** Kmt Shockley next describes lessons in differentiating instruction taken from his study of the National Africentric Academy.

What is Africentric Education?

Africentric education is the implementation of African ethos into the educational process. Africentric centered schools are cultural centers where members of the Black community feel they can send their children to reconnect with African culture.

> Africentric schools that have culturally specific orientations translate the ancient (but still practiced) African cosmological orientation toward differentiation by helping students to understand that they are part of a great lineage of many who came before them.

Evidence of Positive Effects of Africentric Education

Several authors point to the benefits of Africentric schooling. In recent years researchers found that schools serving the most challenged African American students that adopted Africentric education ideas and methodologies and in that process transformed their cultural contexts to create positive learning environments for their students, came to be viewed as highly successful within their school districts. In Michigan, Wisconsin, and Missouri Africentric education methods have been used by schools to raise students' standardized test scores and overall academic achievement. Many of these schools have successfully moved from the bottom tier in achievement results within their respective states to the top tier.

Lessons in Differentiating Instruction From Africentric Educators

The following lessons for teachers and principals are derived from a study of the National Africentric Academy, a private school located in the Baltimore Washington region

Lesson 1: Draw on African Traditions to Focus the School's Vision

Africentric education recognizes the important place that schools have in their communities, and places the child at the center of the community. Africentric schools seek to enhance the strengths of the communities they serve.

> In African societies children and the elders are the focus of concern

Examples from practices based on African traditions at the National Africentric Academy

- At the National Africentric Academy teachers constantly teach lessons about the importance of family and taking care of the young. Their practice is to demonstrate the notion that the children must be cared for; that they must always be at the center of attention.

Lesson 2: Create a Familial School Environment

Examples from practices based on African traditions at the National Africentric Academy:

- All of the staff members interact with students, and they are tuned in to personal aspects of student's lives, and while the teaching staff may instruct a particular grade level of students most of the time, there is fluidity to the grade levels that these staff members teach.

- Teachers have relatively close contact with parents and are familiar with the aspirations they hold for their children.

- A family atmosphere is created as teachers ask older students to help with pre-K students

- Staff members are friendly but firm with students

> **At the National Africentric Academy**
> There are instructions hanging from the ceiling, most of them instructing students on exactly how they can be responsible. Reminders about respecting your elders, "how we speak to each other, that we do our work, that we follow African principles," are all posted in plain sight. . The chalkboard is midnight black, with very neatly written words and phrases: "We are African people", "Do all of your work", "Respect yourself". The restrooms on this floor also display the gender titles "brothers" and "sisters

> **The Principal of the National Africentric Academy believes that** Africentric education is needed in the U.S. "because people of African descent have not been taught to take [agency] over their own communities**"**

Lesson 3: Foster a Sense of Agency Through Cultural Enrichment

Examples from the African cultural practices at the National Africentric Academy:

- School teachers and leaders transmit a sense of agency to students

Lesson 4: Enrich School Life With African Cultural Practices

Examples from the African cultural practices at the National Africentric Academy:

- The overall look and feeling of the environment at the school encourages African decor, dress, grooming, and speech.

- All of the walls in the school are filled with reminders that what is going on is African

- The aesthetics of the school follow a general Africentric pattern. For example, there are adinkra symbols that represent Ghanaian cultures, Ankh's and Maat, which represent Ta Merian cultures, and mud cloth, which represents Senegalese cultures. Staff members and students dress in clothes from various African cultural traditions. Students are assigned to groups for projects. Group names hang on the walls

including Wolof, Zulu, Xhosa, Dogon, Asante, Ga, Ibo, Yoruba, and Malinke. Kente cloths, huge adinkra symbols, pictures of women and men from African countries are depicted in unity in stairways and on walls.

- Teachers dress in full African attire (African shirt and pants or dress). The Principal dresses in full African outfits.

> *Teachers at the National Africentric Academy believe* there are certain practices that are common to all African people such as the drum and dance rituals, which are general practices, and then there are other practices that are specific to the cultural group, such as the Akan ancestral food plate, and the Ta Merian ancient concentration on kupigana ngumi (what we now know as martial arts).

Lesson 5: Help Students Find Ways to Accomplish Their Goals

Examples from the African cultural practices at the National Africentric Academy:

- An important part of African cultural ethos is helping students find ways to accomplish their goals.
- Built into African ethos is the notion that a child's purpose on earth is to be met, and everyone – teachers included, are charged to differentiate instruction to meet the needs, purposes and life missions of all students.
- In culturally oriented Africentric schools all students are given a special name that means something that is unique to them and their mission (which students discuss with their parents, etc.).
- Teachers, administrators and other school community members remind students of their special name and encourage toward excellence by reminding them of the standards up to which they must live.

> African cultural ethos is primarily spiritual, and part of the spiritual mission of African ethos is the ancestral realm. For example, some African cultural groups such as the Akan groups in Ghana believe that the elderly and children are the closest beings on the planet to "being" in the spiritual realm. That is because children have recently come from a spiritual place, and the elders are about to transition to that same spiritual place. While in the spiritual place, children are given a "mission" that they are to complete while on earth.

> **For Further Study of the Issues Raised in Kmt Shockley's Contribution See:**
> Relationships Matter. By: Stipek, Deborah. ***Educational Leadership***, Sep2006, Vol. 64 Issue 1, p46-49, 4p, 2c

Lessons in Differentiating Instruction by Incorporating Various Learning Modalities Into A Social Studies Classroom

Joe Manko

In his 1983 book *Frames of Mind: The Theory Of Multiple Intelligence*, Howard Gardner proposed the idea that some students process and retain information best when it is presented via a series of eight learning modalities. Gardener's theory, labeled the Theory of Multiple Intelligences has profound consequences for classroom learning since it questions traditional paper and pencil practices by invoking learning targeted towards varied types of learners. Perhaps the theory's most important effect is addressing the idea that no two learners process information the exact same and therefore as educational practitioners we must be varied in our delivery techniques to effectively reach each of the differentiated learning styles in the classroom.

In responding to the question: **What can we learn about organizational and cultural practices that support differentiated instruction?** Joe Manko next presents teacher strategies to differentiate social studies instruction, and then recommends actions that principals' can take in supporting differentiated instruction

Teacher Strategies for Differentiating Social Studies Instruction

In the section below, each of the eight learning modalities have been paired with two or three potential strategies that can be used in the classroom to address that learning style. The strategies have been targeted for use in a social studies class in order to give some level of specificity to the suggestions, however several of the strategies can and have been used in classes across the curricula.

Strategy 1: Address Linguistic Intelligence (Word Smart)

> ***Word Smart Activity 1: Journaling-*** any writing assignment, in particular journaling in the social studies classroom can be a powerful learning tool for your word smart students. You can have student's journal about things they are learning in class or push towards the higher levels of Bloom's Taxonomy and have them evaluate what the experiences of an individual living in a different time period would be like.

> ***Word Smart Activity 2: Reporting-*** any form of report where students can write down information or present their learning in a written form is powerful for your word smart students. Often combining this with other modalities (like writing a report on Native Americans and creating an accompanying map of where they lived) allows students to tackle an area they have generally felt success in, while also presenting information in a format that may feel less comfortable for them. This also allows an opportunity for grouping that will allow different members of a group to contribute via their area of strength.

Strategy 2: Address Logical-mathematical intelligence (Number Smart)

> ***Number Smart Activity 1: Calculations-*** you can incorporate calculations into several social studies based activities, whether it is calculating the distance a Oregon Trail traveler would journey on average each day or adding up the total amount of soldiers

who were involved in the Battle of Gettysburg, anytime numbers are involved, your number smart students will show their intelligence and excel.

Number Smart Activity 2: Mapping Activities- social studies provide a unique opportunity for number smart learners because of the involvement of maps. Generally, number smart students will find success processing information on maps because of the logic involved in determining distances using a scale, finding coordinates of latitude and longitude, etc.

Number Smart Activity 3: Graphing- graphing and data analysis is a critical component of any excellent social studies classroom. When you look at polling data, address population numbers, or analyze graphic trends in governmental spending you are appealing to the natural aptitude of your number smart students.

Strategy 3: Address Spatial intelligence (Art Smart)

Art Smart Activity 1: Art Projects- art smart students are best able to present, process, and retain information when representing classroom material through an artistic medium. Drawing pictures of what colonists would be doing in early Jamestown or making a three dimensional model of one of the missions in California are two examples of how art projects can be used in the classroom to meet the needs of spatially intelligent students.

Art Smart Activity 2: Map Creation- while analysis of maps often appeals to the number smart students, the actual creation of maps, whether a reproduction of a map of Maryland or the imaginative creation of an entirely new continent, is a skill best suited for your art smart students. Map creation allows for an assessment of learning (how to create a legend, including all eight map elements, proportion, etc.) while addressing the various needs of your spatially intelligent learners.

Art Smart Activity 3: Videos/Slide Presentations- videos, if chosen appropriately, give a visual representation of the information being presented in the classroom. For many students seeing pictures or movies associated with what is being addressed in the classroom helps to reinforce the knowledge since the representation in multiple mediums aids memory and understanding. In social studies, visual aids (videos, pictures, slides) are particularly appropriate since there is a wealth of educational materials and documentary footage about historical sites, personalities, etc.

Strategy 4: Address Bodily-Kinesthetic intelligence (Body Smart)

Body Smart Activity 1: Simulated Activities- simulated activities are excellent learning tools for body smart students. In social studies, educators can craft experiences that mimic the choices and lifestyles of historic peoples. Activities can range from the simplistic, like learning an African dance and simulating an ancient festival, to the complex, like creating a simulated journey along the Silk Road that allows students to make decisions faced by typical Silk Road traders.

Body Smart S Activity 2: Dancing- dance activities can serve several educational purposes from a cultural exploration to dissecting the science of motion, joints, etc. Since dance can tell you so much about the cultural norms of a particular group of people, its place in the exploration of social studies is important.

Strategy 5:Address Musical intelligence (Music Smart)

Music Smart Activity 1: Song Creation- having students create music to demonstrate their classroom learning enables educators to address the needs of music smart students while providing an opportunity for students to show their creativity. In social studies, you might want to give students a list of concepts from the thematic unit being covered and ask that students incorporate ten or fifteen of the references into a song they are creating. An associated rubric will ensure that students know the parameters upon which they will be assessed.

Music Smart Activity 2: Listening To Music- similar to dance, music gives unique insights into various cultural groups. In social studies, you can study the music of the people to better understand the cultural norms of the time. Were these people monotheistic or polytheistic? Did a king rule them? Were the times in which the music was composed filled with happiness or sorrow? Often times, these answers can be found, hidden in the music of the time. Listening to music to enhance the classroom experience not only adapts to the needs of music smart students, but also adds critical primary sources to a social studies classroom.

Strategy 6: Interpersonal intelligence (People Smart)

People Smart Activity 1: Debates- allowing your students to engage in a structured debate can fulfill several learning objectives including preparing the associated research, perspective taking, rhetoric, teamwork, and constructive disagreement. As an activity it also allows your people smart students to shine while addressing the informational requirements of the classroom. In social studies you can pick a current events issue like the war in Iraq or a historical dilemma like was the South justified in breaking away from the Union during the Civil War, in conjunction with agreed upon norms in order to create a structured argument between two or more groups in the classroom.

People Smart Activity 2: Mock Trials- similar to debates, mock trial sessions provide an even more structured framework for the presentation of outside research and classroom material. You may select either a historical case like the trial of Socrates, or a fictional case like putting on trial an anonymous corporation for unscrupulous business practices. Whatever the case, the process of argumentation between defense and prosecution serves not only to address classroom learning objectives (learning about ancient Greece, or local economics in the examples above), but also teaches students about typical court proceedings, making strong, reasoned arguments, and researching information pertinent to a particular topic.

People Smart Activity 3: Discussions- any time you can engage your students in a classroom discussion you will likely be addressing many of the higher rungs of Bloom's taxonomy while also meeting the needs of your people smart learners. In social studies, an activity as simple as giving your students a thought provoking literary passage and scaffolding a series of questions that will enable your students to eventually analyze, dissect, and evaluate the argument being made can form the basis for an effective classroom discussion.

Strategy 7: Intrapersonal intelligence (Self Smart)

Self Smart Activity 1: Journaling/Reflecting- self-smart students most effectively express themselves when their innermost thoughts are given the opportunity to be revealed. The most common activities for self-smart students are journaling and reflection writing that are common in many adolescent language arts classrooms. Educators can also choose to incorporate self-smart learning into the curriculum by having students' journal or reflect on what their experiences would have been like if set in a different place or a different time period.

Strategy 8: Naturalist intelligence (Nature Smart)

Nature Smart Activity 1: Exploring/Creating Habitats- in social studies, familiarity with geography is an important skill set that must be mastered by young scholars. Geography deals not simply with maps, but with the physical landforms, climates, habitats, people, and animals that shape the land that surrounds us. The exploration of habitats is therefore both an important social studies skill, but is also important in meeting the needs of nature smart students in your classroom. Having students research the various elements of habitats or taking students on trips outside the school building to interact with the creatures, vegetation, and landforms that make up a particular environment are strategies to fully engage nature smart learners. Educators may also look at replicating habitats in their classrooms by housing class pets, creating terrariums, etc. in an effort to meet the needs of nature smart students.

Nature Smart Activity 2: Nature Videos- one of the major advantages of video is that you can show students environments that otherwise would be out of their educational reach. This statement is particularly potent when you are exploring creatures and habitats through the lens of a nature film that would normally be impossible to observe in ordinary circumstances. Videos produced by National Geographic, NOVA, and a variety of similar organizations give educators the chance to appeal to the naturalistic aptitude of their students, while also presenting material that would otherwise be very difficult to observe.

Recommendations to Principals' in Supporting Differentiated Social Studies Instruction

There are at least three strategies that principals can use to support differentiated social studies instruction, provide professional development, and hire teachers who differentiate instruction and support peer observation and modeling.

Recommendation 1: Provide Professional Development

For the administration to effectively incorporate educational strategies targeted at the various learning modalities, professional development for teachers is critical. Many teachers recognize the importance of addressing various learning modalities in their classroom and acknowledge the success that follows from a successful experiential activity that they have planned.

Challenge: Lack of Professional Development Programs

In some cases the issue is not the reluctance of teachers to use multiple intelligence strategies, but rather the lack of clear and concise examples of how to make it work in the classroom. One of the largest challenges for administrators wanting more multiple

intelligence instruction in their schools is that few packaged programs are available. There is a reason for this, namely that teaching via the multiple intelligences is difficult, time consuming, and requires creativity that rises beyond even the most creative teacher.

Response: Support Teacher Collaborative Strategy Sharing

The answer to effective professional development targeted at the multiple intelligences lies in collaborative strategy sharing. Teachers need to see best practices of their colleagues educating students via the multiple intelligences. Many educators need to see the actual activities being performed or a detailed description of the activity in practice before they can picture it occurring in their own classroom. Like many of the students we teach, modeling in a very concrete and tangible way is the best means for getting teachers to incorporate multiple intelligence learning in the classroom.

Recommendation 2: Hire Teachers Who Differentiate Instruction

Administrators can help the spread of multiple intelligence driven learning in their schools and school districts by selecting a cross section of teachers who are effective practitioners of multiple intelligence learning and having them model their strategies to colleagues. Seeing these strategies in action, explicatively modeled is the most effective way to raise the comfort level of fellow teachers who may want to use similar strategies in their own classrooms.

Recommendation 3: Support Peer Observation and Modeling of Differentiated Instruction

Administrators can encourage classroom observation, both throughout a school building and in other schools within a district. Observation, once again allows teachers to see concrete examples of multiple intelligence targeted activities in practice. The modeling encountered in classroom observations and best practice sharing will translate to concrete strategies for implementing multiple intelligence oriented learning in the classroom.

For Further Study of the Issues Raised in Joe Manko's Contribution See:
Recognizing Neglected Strengths.Moran, Seana; Kornhaber, Mindy; Gardner, Howard. **Educational Leadership**, Sep2006, Vol. 64 Issue 1, p22-27, 6p, 5c

SECTION VI Principle to Practice Differentiating Instruction Using Instructional Technology by Joe Manko

In this section of this volume of Design Principles for Learner Centered Schools we turn our research-based principles for differentiating instruction to practice by highlighting the ways in which several teachers from throughout the country have integrated technology into instruction. Many principles in the technology section of this report have been inspired by the work of Marilyn Roblyer in *Integrating Educational Technology Into Teaching.* In this section we revisit how our design principles for differentiated instruction can be supported by technology enhanced instructional strategies across the curriculum. First we make four recommendations for administrative strategies that can be used to differentiate instruction using technology. Second, we by provide six examples of how teachers have differentiated instruction using technology.

In addition, on our CD ROM we provide extended examples of how several schools have used technology to enhance differentiated learning. These examples span curriculum areas, student demographics, and regions of the country demonstrating the universal need for both technology integration and differentiation instruction.

1. Administrative Strategies For Differentiating Instruction Using Technology

One excellent strategy for differentiating instruction within a school is by increasing focus and proficiency amongst both students and staff in their use of technology. Technology can help differentiation of instruction by widening access to available resources and engaging learners with video, games, audio, multimedia activities, etc. The following administrative strategies have been inspired by from the technology plans instituted at Rosemont Elementary/Middle School in Baltimore, Maryland and other schools across the country. We offer 4 recommendations placing a school on a path to greater incorporation of technology into the school environment:

Recommendation 1: Develop a Vision for Technology Use and Implement it-

Start by creating a mission statement for both students and faculty identifying goals for technology integration and steps for achieving greater proficiency. This work will usually be done initially by a technology committee or focus group and presented to the entire staff for feedback and support. Make sure your vision statement reinforces local and/or national learning outcomes, addresses the professional technology needs of educators within the school, and outlines what students will know and do as it relates to technology.

Recommendation 2: Invest in an Instructional Technology Teacher-

Formulate a solid technology plan that aims to improve proficiency for both staff and students. This will often require investment to resources into a full time instructional technology teacher. Instructional technology teachers can assist students by:
- increasing classroom exposure to technology
- improving teacher confidence in using technology to aid instruction
- enhancing opportunities to receive differentiated instruction
- increasing motivation to use technology mediated instructional materials
- instilling a sense of pride in their capacities to use technology

Through the support of the instructional technology teacher and the work of the technology committee, teachers can become more willing to try new approaches to using technology, thereby increasing their use of technology in the classroom.

Recommendation 3: Assess Staff Knowledge and Comfort in Technology Use

Just as it is important to assess student learning prior to teaching, it is also important to assess staff knowledge (particularly with something like technology use where the skill levels of staff members are varied and diverse) before conducting professional development. Conducting a needs assessment will allow you to determine barriers that may prevent increased use of technology in the classroom. It will also allow the school to develop a strategy for removing these barriers. Perhaps the lack of familiarity with computer hardware or software is preventing its inclusion in the overall instructional scheme. If this is the case, professional development that demonstrates the practical use of these applications in the classroom may be a successful strategy for overcoming staff discomfort with using technology. An example of Rosemont Elementary/Middle School's Technology needs assessment can be viewed in the CD ROM version of this report.

Recommendation 4: Plan Effective and Targeted Professional Development-

At Rosemont Elementary/Middle School, the technology needs assessment showed that many teachers were excited about the idea of using technology in the classroom, but lacked the skills set needed to bring instruction via technology to the students. As part of the professional development plan, Rosemont teachers were grouped based on their computer skills into three separate teams. On school-wide professional development days, three separate sessions for the three differentiated groups are given based on the technology needs of that group. This allows teachers with little computer familiarity to learn basic computing skills, while their more advanced counterparts can look at more involved methods for incorporating technology into instruction. In addition, one hour of computer lab time has been designed each week for teacher professional development, where staff members can identify based on the assessment results areas where they need improvement and can seek guidance during these sessions in order to increase proficiency.

Examples of Differentiating Instruction Using Technology

The focus of this report has been differentiating instruction and learning styles to better address the needs of schools and classrooms. Technology provides a powerful tool for differentiating instruction since it broadens access to resources, allows experiences that move beyond the limitations of basic 'paper and pencil' classrooms, and enables learners to be engaged in environments that address the various senses and learning styles. The section immediately following tracks seven outstanding examples where teachers have effectively incorporated technology usage into their classroom in order to guide and assist instruction. After these examples, a comprehensive list containing a series of strategies that can be used to integrate technology into the classroom has been compiled. These strategies are organized for different technological environments based on the accessibility to computers, internet, projectors, etc. within the school setting. Listed below are several examples of effective technology integration used by educators throughout the country:

Example One- Powerpoint And Vocabulary,

Educator Anne Marie Guerrettaz who teaches at Maryvale Prepatory School in Baltimore, Maryland uses Microsoft Powerpoint as a unique tool to help her student better remember and understanding sight vocabulary words in her high school French

classes. By grouping her students, Ms. Guerrettaz uses constructivist learning principles to have her students display visual depictions, sight vocabulary used in context, and pneumatics in order to create Powerpoint slides based on a group of assigned vocabulary words. After each group has created a Powerpoint presentation that will help the class remember those select words they present their slides to the class using a laptop connected to a multimedia projector. This unique jigsaw activity exemplifies how technology can be effectively used to increase vocabulary usage and exposure in the classroom. While Ms. Guerrettaz uses Microsoft Powerpoint in her classroom, several other slideshow presentation programs (hypercard, keynote, etc.) would also serve a similar purpose.

Example Two- The Non-Traditional Book Report

Educators Marilyn and David Forest who teaches at James Logan High School in Union City, California have moved their students away from creating a traditional handwritten book reports and replaced them with Hyper Card Projects. Through a Hyper Card Project, students are asked to summarize some of the major settings, characters, and themes from either fiction or non-fiction texts that they are reading by placing both written and visual depictions of what they are reading into a multimedia presentation. Using a program like Microsoft Powerpoint, the students at James Logan can create text and upload pictures relevant to their book. Students can also include outside knowledge they have gathered through research and provide links to their sources through the Hyper Card Projects. Finally, these projects can be uploaded to the web and categorized so that other students can review whether it would be a novel or text they would be interested in reading in the future.

- For more information about Marilyn and David Forest's technology integration follow this link. http://www.nhusd.k12.ca.us/cue/cue.html
- To see an example of a Hyper Card Project follow this link. http://www.jlhs.nhusd.k12.ca.us/Classes/Social_Science/Latin_America/Che/Che.frames.html

Example Three- Podcasting Student Created Reports

At Willowdale Elementary School in Omaha, Nebraska, Ms. Sandbourn's class has taken to the air podcasting several aspects of their fifth grade classroom. Ms. Sandbourn has her students' record their voices and give lectures based on information they have gather on topics ranging from the United States Constitution to various books that have been reading in class. Podcasts can be beneficial in providing audio record of material covered during a class period that can continually be referenced via the internet. Other uses of podcasts could be to help improve reading fluency by recording a book or story being read by a fluent reader to model good pronunciation and expression for struggling readers.

- For more information about Podcasting in Ms. Sandbourn's classroom follow this link. http://www.mpsomaha.org/willow/radio/listen.html

Example Four- Blogging To Analyze and Understand

Supervisor of Instructional Technology and Communications Will Richardson from Hunterdon Central Regional High School in Flemington, New Jersey has pushed the incorporation of blogging into several classes and disciplines with astounding results. Weblogs or 'blogs' for short provide an interactive discussion forum where individuals Through blogs students at Hunterdon have the ability to express themselves in written

form, thereby indirectly improving their writing, but more so, it provides a forum for students to have intellectual discourse on a topic related to what is being discussed in the classroom. Hunterdon students have even blogged with authors of the novels they are reading, asking in depth questions and receiving analysis directly from the source.

- For more information about the impact of blogging at Hunterdon Central Regional High School follow this link.http://curriculum.enoreo.on.ca/ontario_blogs/why_blog.html
- For more information about incorporating weblogs into the classroom follow this link. http://www.glencoe.com/sec/teachingtoday/educationupclose.phtml/47
- For more information about the impact of blogging at a New Jersey High School follow this link. http://weblogs.hcrhs.k12.nj.us/bees/

Example Five- E-mail Pen Pals

Third Grade educator Ben Lewis has found e-mailing to be an exceptional way of improving the writing skills of her students by partnering up with pen pals from a different school. Through his pen pal activity student not only improve their writing skills, but also gain exposure to new students from different regions of the country and globe.

For more information about incorporating e-mail into the classroom follow this link. http://k-6educators.about.com/od/languagearts/l/aa090201.htm

Examples Six- Using A Tablet PC In The Classroom

Educator Joseph Manko who teaches at Rosemont Elementary/Middle School in Baltimore, Maryland uses technology for his students to see good writing modeled, critique the writing of their peers, and evaluate what can be done to improve written responses. Using a tablet PC hooked up to a multimedia projector, Mr. Manko allows students to come to the front of the class and enter examples of their written responses onto the tablet PC for the class to see. Afterwards, students have the opportunity to evaluate the piece of writing and edit or make any changes that would help improve the written piece. The tablet PC will also allow for the saving of each written response, thereby leaving a means to assess progress in writing for each student over time. While, the tablet PC provides a unique educational tool, similar strategies can be effectively implemented with lower technologies like an overhead projector and separate transparencies which the students can compose their written responses or evaluate and edit the work of their peers.

- For more information about Joe Manko's technology integration follow this link. http://www.mrmanko.com

SECTION VII: Maryland Professional Development Standards and Planning Guide by Leslie Kee

In showing educators how to turn principles to practices we are also pleased to support the efforts of the Maryland State Department of Education by showing how the resources available from the Maryland School Improvement website can be used to design strategies in differentiating instruction, and how Maryland's Standards for Professional Development can help guide the design work of professional learning communities that are engaged in developing systemic approaches to differentiating instruction to improve student learning opportunities and outcomes across classes and grades

Colleen Seremet, Maryland's Assistant State Superintendent for Instruction says "the rubber will really hit the road when we are able to ensure that every teacher has the knowledge and skills they need to deliver an exemplary curriculum to meet the various needs of all the students in every school around the state" (School Improvement in Maryland, Teaching and Assessing, (http://mdk12.org/instruction/index.html)

Supporting High Quality Professional Development

We believe that high quality professional development must be a central feature in meaning making schools. We have also shown that learner-centered principles can guide efforts to increase instructional capacity to teach for meaning. In order to put these and other principles into practices that focus on specifically on differentiating instruction, we must ask a critical question: how can we help teachers develop instructional capacities to teach for meaning?

Colleen Seremet, Maryland's Assistant Superintendent for Instruction explains that the important pieces of a quality instructional program are: solid curriculum, a quality assessment program, and high quality teacher professional development.

Context for High-Quality Teacher Professional Development in Maryland

Maryland's standards for professional development are based on assumptions about the required components for professional development. When all of these components are in place then professional development can be highly effective. If they are not properly developed or components are missing professional development will not be effective.

Effective professional Development rests on fundamental assumptions about contextual factors.

- Professional development is most effective when it takes place in vibrant professional learning communities.
- Professional development is most effective when there are strong leaders.
- Professional development is most effective when there are adequate resources.
- Professional development is most effective when there is consensus around clear expectations for what teachers should know and be able to do to help all students learn.

Maryland Professional Development Content Standards

Standard 1: Content knowledge and quality teaching

Effective professional development deepens all teachers' content knowledge and the knowledge and skills necessary to provide effective instruction and assess student progress.

Standard 2: Research-based

Effective professional development ensures that all teachers have the knowledge, skills, and dispositions to apply research to decision making.

Standard 3: Collaboration

Effective professional development ensures that teachers have the knowledge, skills, and dispositions to collaborate with others to improve instruction.

Standard 4: Diverse learning needs

Effective professional development ensures that all teachers have the knowledge, skills, and dispositions to meet the diverse learning needs of all of their students.

Standard 5 Student learning environments

Effective professional development ensures that all teachers are able to create safe, secure, and supportive learning environments for all students.

Maryland Professional Development Process Standards

Standard 7: Data-driven

Effective teacher professional development relies on rigorous analysis of data.

Standard 8: Evaluation

Rigorous evaluations assess the impact of professional development on teaching and student learning.

Standard 9: Design and Teacher Learning

Effective professional development content and process reflect best practices in workplace learning and in-depth understanding of how and why adults learn.

"The Maryland Teacher Professional Development Standards are derived from the National Staff Development Council's (NSDC) Standards for Staff Development.[2] Like the NSDC standards, the Maryland Teacher Professional Development Standards rest on several fundamental assumptions about contextual factors that are critical to ensuring that professional development is effective."

-School Improvement in Maryland (2006)

http://www.mdk12.org/instruction/professional_development/teachers_standards.html
http://www.nsdc.org/standards/

Maryland Professional Development Planning Guide

MSDE provides the Maryland Professional Development Planning Form, which includes the following steps to implement effective professional development. These steps can serve as a guide to implement effective professional development at any give school.

***Step one*:** Identify the need for the professional development and the participants.

Step two: Specify the intended out comes, indicators, and data sources and begin working on the evaluation plan.

Step three: Specify the content, learning activities, and follow up necessary to ensure implementation and use of new knowledge and skills.

Step four: Complete the evaluation plan.

Step five: Identify resource needs and prepare a budget.

NOTE: In this CD ROM version of this report we present all five steps with additional resources to guide the planning of professional development in differentiated instruction.

Accessing the Maryland Professional Development Planning Guide

The steps are taken directly from MSDE Planning Guide for more information the visit http://prodev.marylandpublicschools.org/
- *Create a new account if you do not currently have one.*
- *Once logged in you will be able to access the interactive planning guide*
http://prodev.marylanpublicschools.org/resources/Planning_Guide.pdf

Using the Design Principles in Planning Professional Development

This fifth volume of ***Design Principles for Learner-Centered Schools*** is intended to be used as a resource to support the kind of embedded professional development opportunities for teachers specified in the **Maryland Teacher Professional Development Standards.**

In the report we have

- Outlined research based design principles and teaching strategies that teachers should know in order to differentiate instruction to effectively create student learning environments to meet diverse student needs

As a result, schools that use the Design Principles report as a resource in professional development will meet the following Maryland Professional Development Standards

Standard 1: **Content knowledge and quality teaching**

Standard 2: **Research-based**.

Standard 4: **Diverse learning needs**

Standard 5 **Student learning environments**

Standards' Based Approaches to Professional Development in Differentiated Instruction

The Design Principles report can be used as a resource for teachers to use while engaged in professional development activities that are based on knowledge of teacher learning and adult learning theory, and that ensures that teachers collaborate with colleagues. In doing so schools will meet the following Maryland Professional Development Standards

> *Standard 3:* **Collaboration**
>
> *Standard 7*: **Data-driven**
>
> *Standard 8*: **Evaluation**
>
> *Standard 9:* **Design and Teacher Learning**

Approaches to Professional Development Presented in the CD ROM Design Principles For Learner Centered Schools Report

> In the CD ROM version of this report we have presented summaries of the following approaches to professional development that meet the Maryland Standards for Professional Development

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Resource: Professional Development Activities from Alberta's Teachers Association,
> This website shares over thirty Professional development activities for teachers to use individually and collaboratively. You will find activities described in the CD version of this report.

http://www.teachers.ab.ca/Professional+Development/Teacher+Professional+Growth+Plans/Section+3/Professional+Development+Activities+for+Teachers.htm

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Summaries of Standards Based Professional Development Approaches Presented in the CD ROM version of the Report

- Book Study
- Collaborative Planning
- Collaborative Curriculum Development
- Conferences
- Examining Student Work
- Journaling
- Lesson Study
- Peer Coaching
- Self-Reflection
- Action Research

- Study groups
- Critical Friends (CF)

Using the Maryland Professional Development Planning Guide

Maryland's State Department of Education has produced the Maryland Professional Development Planning Guide. This practical form tackles five major steps for implementing professional development. In this report, you will find current research integrated into the steps.

In the CD ROM version of this report we have provided summaries of approaches to professional development that meet the Maryland Professional Development Standards.

Using the Maryland Professional Development Planning Guide

Maryland's State Department of Education has produced the Maryland Professional Development Planning Guide. This practical form tackles five major steps for implementing professional development. In this report, you will find current research integrated into the steps.
We have provided summaries of approaches to professional development that meet the Maryland Professional Development Standards. At the conclusion of this section, you will find additional resources and references for your professional growth

In preparing this additional resource we sought to meet the following goals:

Effective professional development accomplishes the following goals:

- Professional development enriches teaching and improves learning for all students. It is an essential link to higher student achievement.
- Professional development supports teacher development, both as individuals and as educators.
- Professional development is considered a central part of teaching--as vital as classroom instruction.
- Professional development is considered an ongoing process and is conducted in a long-term, sustained manner.
- Professional development is job-embedded and inquiry-based.
- Professional development supports current beliefs about teaching and learning.
- Professional development is based on a growth model rather than a deficit model.
- Professional development addresses goals for school improvement and is clearly related to reform efforts.
- Professional development is modeled after learning experiences considered valuable for adults.
- Professional development supports systemic change.

GOALS TAKEN FROM: CRITICAL ISSUE: REALIZING NEW LEARNING FOR ALL STUDENTS THROUGH PROFESSIONAL DEVELOPMENT
HTTP://WWW.NCREL.ORG/SDRS/AREAS/ISSUES/EDUCATRS/PROFDEVL/PD200.HTM

Using the Maryland Planning Guide to Plan Professional Development in Differentiated Instruction

The following section provides insight on what to think about when planning for professional development in differentiated instruction, and in some instances how to follow through on the steps outlined in the Maryland Professional Development Planning Form. The MSDE guide is designed for everyone responsible for planning professional development in the state of Maryland. In addition, it is recommended for short-term and long-term professional development goals.

STEP ONE: Identify the need for the professional development and the participants.

1.1 Identify the student learning needs that professional development will address.

- Identify the student learning needs you identify related to differentiated instruction:

- What are the possible causes of the gaps between what students know and are able to do?

- The group you decide to focus on will depend upon the population at your school. Each school community and population is unique, thus, student learning needs will vary as a result. Principals and staff developers should review data, visit classrooms and survey staff to pinpoint school needs.

Study Guide Identifying the need for differentiated instruction
Resource: Carol Ann Tomlinson (2005) *Traveling the road to differentiation in staff development*. http://www.nsdc.org/library/publications/jsd/tomlinson264.cfm

- The United States is becoming a nation of racial and ethnic minorities, rather than a nation with a majority race and multiple minorities. Classrooms mirror that ethnic, cultural, and linguistic diversity To be effective, teachers must take into account the student's language, economic status, background experience, and views of the world, all of which affect the child's learning.
- Most districts now include students with identified special education needs in general education classrooms. About 96% of teachers have students in their classroom who have been identified with a learning disability, according to the U.S. Department of Education (2001), and on average, have three to four students with Individualized Education Plans. In addition, most students identified as gifted spend the majority of their academic time in general education settings. Students in each of these populations (as well as students with multiple exceptionalities whose needs encompass both populations) require responsive instruction to develop to their full potential.
- Tracking students by ability levels to address learner needs has not helped students achieve and has, in fact, resulted in lowered expectations for many students who could perform at a higher level if given appropriate opportunities to do so. An exception is advanced learners, who likely would suffer from being placed in more heterogeneous classrooms unless advanced learning opportunities were consistently available.
- The achievement gap between Caucasian students and many minority groups - including African-American, Hispanic, and Native American learners - is likely aggravated by tracking, which separates students perceived as lower performing from those perceived as higher performing
- Some experts also question the efficacy of special programs - such as those for students with learning disabilities and students with reading problems - in raising the achievement levels of students assigned to those programs

1.2 Identify the best approach to addressing student learning needs:
Once you are clear on gaps in learning, how will you address these gaps?
Will you introduce:

- New curricula?
- New strategies?
- New assessments?

The approaches presented in this outline are derive from a variety of programs and the components shared in this report all focus on differentiating instruction and meeting the needs of all children.

1.3 Identify what teachers need to know and be able to do to implement the approach identified in Step 1.2.

Questions to consider:

- What specific teacher knowledge and skills need to be developed to help them close the gaps between what students know and are able to do and what they are expected to know and be able to do?

- What specific teacher knowledge and skills will be addressed by the activities that you are planning?

- Describe the kinds of help that teachers need to implement the improvement strategies:

Study Guide on Professional Teaching
Resource: National Board for Professional Teaching Standards (NBPTS)
http://www.nbpts.org/
Of the five core propositions produced by NBPTS, four propositions speak directly to differentiated instruction.
1. Teachers are committed to students ant their learning
    - Teachers believe that all students can learn and they treat students equitably. They respect cultural and family differences and teachers are concerned with students' self-concepts and motivations.
2. Teachers are responsible for managing and monitoring Student Learning.
    - Teachers have master over the subject they teach and are very familiar with skill gaps.
    - Teachers use diverse instructional strategies to teach for understanding.
3. Teachers are responsible for managing and monitoring student learning.
    - Teacher uses effective instructional delivery to keep students motivated and engaged.
    - Teachers utilize multiple methods to assess student progress.
4. Teachers think systematically about their practice and learn form experiences
    - Teachers read, question, create, and try new things.
    - They critically examine their practice on a regular basis.

1.4 Identify who will participate in the activities that you are planning.

- Principals and staff developers should think about the grade level, subject area that needs to develop differentiated instruction.

STEP TWO: **Specify the intended outcomes, indicators, and data sources and begin working on the evaluation plan.**

- The Maryland Professional Development Planning Form provides an Outcomes and Data table as a resource to organize, outcomes, indicators, and data sources for teachers and students. *http://prodev.marylanpublicschools.org/resources/Planning_Guide.pdf*
- The Voluntary State Curriculum provides teachers with very lucid information about the precise learning that should occur at each grade level. For specific information click on the link below: http://www.mdk12.org/mspp/vsc/index.html

STEP THREE: **Specify the content, learning activities, and follow up necessary to ensure implementation and use of new knowledge and skills.**

3.1 Specify the content of the professional development that you are planning.

- Briefly describe the content of the activity and how the content is grounded in sold theory, research, and/or experience from best practice and note any limitations that you are aware of.
  - Are you planning to develop new materials to present the content?

National Resources for Professional Development

National Professional Development Program for students with Limited English Proficiency (LEP) http://www.ed.gov/programs/nfdp/index.html

National Association for the Education of Young Children: Promoting excellence in early childhood education http://www.naeyc.org/conferences/institute.asp

National Middle School Association http://www.nmsa.org/ProfessionalDevelopment/tabid/54/Default.aspx

National Council for the Social Studies http://www.socialstudies.org/profdev/

National Center for Improving Learning and Achievement in Mathematics http://www.wcer.wisc.edu/ncisla/research/index.html

A National Convocation On Professional Development For Mathematics And Science Teachers, K-12 http://www.horizon-research.com/pdconvocation/

National Institute in Reading Apprenticeship http://www.wested.org/cs/we/view/serv/10

Beyond Comprehension Strategies: A Multi-Faceted Approach to Teaching Comprehension By Cathy Puett Miller http://www.education-world.com/a_curr/reading/ReadingCoach/ReadingCoach008.shtml

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3.2 Plan the learning activities

- What types of activities will engage your staff?

Professional Development Planning Resources

Below we provide a summary of professional development activities that meet the following Maryland Professional Development Standards:

Standard 3: Collaboration

Effective professional development ensures that teachers have the knowledge, skills, and dispositions to collaborate with others to improve instruction.

Standard 7: Data-driven

Effective teacher professional development relies on rigorous analysis of data.

Standard 8: Evaluation

Rigorous evaluations assess the impact of professional development on teaching and student learning.

Standard 9: Design and Teacher Learning

Effective professional development content and process reflect best practices in workplace learning and in-depth understanding of how and why adults learn.

Resource: *Professional Development Activities from Alberta's Teachers Association,*

This website shares over thirty Professional development activities for teachers to use individually and collaboratively. You will find activities described in the CD version of this report.
http://www.teachers.ab.ca/Professional+Development/Teacher+Professional+Growth+Plans/Section+3/Professional+Development+Activities+for+Teachers.htm

Book Study

"Book study groups are an effective form of professional development that educators at all levels can use to facilitate their professional growth. Book studies work best if the participants have similar skills and interests. However, varying viewpoints are important because they inject diversity of opinion and enliven discussion. One of the first matters on which the group must reach consensus is a schedule for reading and discussion. If the book study is to consist of four to eight meetings in all, then each meeting should last between 60 and 90 minutes. Choose a book on a topic that interests everyone in the group but that is sufficiently open-ended to encourage new learning through reading and discussion. The book should be thought-provoking and have enough depth to stimulate debate"

Collaborative Planning

"Colababorative planning allows teachers to work to gether to make decisons for students. Teachers can plan as a group, team, or partnership of people working and learning together as they do the following:

- Plan curriculum, units, or lessons including classroom-based assessments
- Examine student work

- Examine teacher work
- Plan use and evaluation of instructional practices
- Develop school improvement plans using student data
    - For more information on collaborative planning see: http://webserver3.ascd.org/ossd/collaborativeplanning.html

Collaborative Curriculum Development

"Collaborative curriculum development provides a unique opportunity for teachers to delve deeply into their subject matter. Working together, teachers can design new planning materials, teaching methods, resource materials and assessment tools."

Conferences

"Conferences can provide very effective professional development opportunities, particularly when they are part of a teacher's ongoing professional development plan."

Examining Student Work

"Student work provides teachers with a critical source of information about how a student is learning, developing, acquiring new knowledge and applying new skill sets. Student work includes such items as writing samples, projects, oral reports and pictures. Thinking analytically about the work can give teachers greater insights into teaching and learning. The information can also be used in study groups."

Journaling

"Journaling is a technique for recording observations and reflections. The entries may be related to teaching, student growth, the implementation of a new initiative or any subject for which a teacher may want to develop a record. The journal can provide a rich, qualitative record of events and activities."

Lesson Study

"Lesson study is a professional development process that Japanese teachers engage in to systematically examine and improve their practice. In this process, teachers work collaboratively to plan, teach, observe and critique a small number of study lessons. To provide focus and direction to this work, teachers select an overarching goal and related research question that they want to explore. This research question guides their work on all the study lessons. Teachers then jointly draw up a detailed plan for the lesson, which one of the teachers delivers to students in a real classroom. Other group members observe the lesson. The group then meets to discuss their observations. Often, the group revises the lesson, and another teacher delivers it in a second classroom, while group members again look on. The group then meets again to discuss the observed instruction. Finally, the teachers produce a report of what their study lessons have taught them, particularly with respect to their research question."

Peer Coaching

"Teachers solicit and receive feedback about their teaching practices after being observed by a peer or other observer. Observation and assessment encourage teachers to reflect on their everyday professional lives and can take many forms. Reflective writing

and discussion allow teachers to develop ideas that can be integrated into their evolving personal pedagogy."

Benefits of peer coaching:
- Peer Coaching encourages reflection and analysis of teaching practice.
- Peer Coaching promotes specific feedback.
- Peer Coaching fosters collaboration among all teachers.

Self-Reflection

"Self-reflection is a critical skill for the ongoing development of one's professional practice. Many effective teachers use three levels of reflection: reflection on action, reflection for action and reflection in action. Self-reflection can be broken down into the following four steps: (1) *problem identification*, during which teachers identify a problem or question about their practice that they are motivated to address; (2) *information gathering*, during which teachers collect data to inform the area of practice; (3) *reflection and decision-making*, during which teachers attempt to find meaning in the data through reflection and analysis; and (4) *application and change*, during which teachers plan how to improve their practice. Self-reflection can be combined with other PD strategies such as action research, journaling, and developing a professional portfolio."

Effective educator should be regularly engaged in reflection and practice the following:
- They are thoughtful about what is taking place in a given situation.
- They identify the options available.
- They consider their own values as professionals and their comfort level in acting on those values.
- They make conscious choices about how to make a difference.

Action Research

Action research is a strategy that allows teachers to collaborate on the teaching and learning process. The inquiry-based structure allows teachers to talk about experiences in the classrooms and it provides teachers with valuable information for improving their practice.

"The conditions for school based action research must be established by the leaders of the school and supported by those within the educational community. Administrators who demonstrate a commitment and interest in educational research must expect teachers to be familiar with recent literature. An encouraging and supportive administrator will allow risk taking for staff willing to attempt new methods of instruction."

Michael Prendergast (2002)

http://educ.queensu.ca/~ar/reports/MP2002.htm

Study groups

Study groups allow staff members to explore topics in a series of formal steps. In study groups the staff will engage in:

- analysis of a wide range of data and indicators describing the status of student learning and the condition of the learning environment

- generation of a list of student learning needs

- categorization of student needs and prioritization of the categories

- organization of study groups around the prioritized student needs

- creation of publicly displayed study group action plans that describe the focus of the study groups, the resources they will use, and how group members will share information
    1. implementation of study group action plans
    2. evaluation of the impact of the study groups' effort on student performance.

    Steps are taken from Carlene Murphy's "Study Groups" at
    http://www.nsdc.org/library/jsd/murphy203.html

"The building of a learning community on-site and on-line based on study groups help to ensure the necessary support teachers need to try new ideas for students to use inquiry so they can be successful in any endeavor."

Barbara Bray *Study Groups Strengthen the Learning Community*
http://www.compstrategies.com/pdfs/%20studygroups.pdf

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Critical Friends (CF)

Critical friends observe classroom instruction and provide feedback monthly to other participants. Professional development using a Critical Friends Group approach has four beliefs:
1. School personnel, working together can make real and lasting improvements in their schools
2. Teachers and administrators must help each other to turn theories into practice and standards into learning
3. The key to effort is developing a collaborative learning community that holds regular meetings to examine student and teacher work
4. Teachers and administrators need high quality training and sustained support.

"Teachers who have CFG training have lower turnover than those who don't."
Daniel Baron, Co-Executive Director National School Reform Faculty

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3.3 Plan the follow up necessary to complement and extend the initial learning activities.

- Review your learning activities in step 3.2 and select follow-up strategies if necessary.

3.4 Describe the connections between the professional development you are planning and other professional development.

- If this professional development is aligned with other professional development, provide a brief description of the connection and /or the rationale for it.

3.5 Specify the role of the principals and other school leaders in the activities that you are planning.

- Briefly describe how principals and other school leaders will be involved in the implementation of training, and intended learning outcomes

Step four: Complete the evaluation plan.

Evaluation plans are important in determining if professional development is successful.

Helpful planning tips from MSDE include:
- Use evaluations capture participant's knowledge, skill and performance or impact on student learning.
- Seek help from an evaluator.
- Use products and artifacts from learning activities and follow up as evaluation data.
- Your evaluation plan should focus on the outcomes for teachers and for students and it should reflect your assumptions about pace and sequence of change.

4.1 Describe your plan for collecting data on implementation of the professional development activity you are planning.

Your evaluation plan should answer the following questions:
- Did the activity include the intended participants?
- Did the various learning activities follow-up take place as planned?
- Did all of the participants participate in all of the components of the activity, including follow-up?

4.2 Indicate who will be responsible for collecting outcome data and describe plan.

Revisit the outcome chart table in step 2 and make provisions for individuals to collect data on each indicator as they complete their work.

4.3 Specify your plans for data analysis and reporting on evaluation results.
- How will you know you accomplished the intended results?
- How will the results be presented?
- Will recommendations be added?
- Who is the audience?

Step five: Identify resources needs and prepare a budget.

5.1 Specify the amount of time necessary for full participation in all of the learning activities and follow up that is planned.

5.2 Specify the facilities, equipment, and materials necessary for the professional development that you are planning.

5.3. Prepare a budget.

SECTION IX: References and Resources

We have organized the references and resources into several sections

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Additional Resources for Differentiating Instruction

ASCD Resources for the most up-to-date information about ASCD resources, go to http://www.ascd.org. ASCD stock numbers are noted in parentheses.

AUDIOTAPES

- *Building a Place to Learn: Classroom Environments and Differentiated Instruction* by Carol Ann Tomlinson (#202132)

- *Help for Your Struggling Learners: Strategies and Materials that Support Differentiated Instruction* by Char Forsten, Betty Hollas, and Jim Grant (#202214)

CD-ROM AND MULTIMEDIA

- ASCD Professional Inquiry Kit: *Differentiating Instruction for Mixed-Ability Classrooms* by Carol Ann Tomlinson (#196213)

NETWORKS

Visit the ASCD Web site (http://www.ascd.org) and search for "networks" for information about professional educators who have formed groups around topics like "Differentiated Instruction" and "The Middle Grades." Look in the "Network Directory" for current facilitators' addresses and phone numbers.

ONLINE PROFESSIONAL DEVELOPMENT

Available on the ASCD Web site:

- Online Tutorial: *Differentiating Instruction* (http://www.ascd.org/frametutorials.html)

- PD Online Course: *Differentiating Instruction* (http://pdonline.ascd.org/pd_online/logon.cfm)

PRINT PRODUCTS

- ASCD Topic Pack: *Differentiating Instruction*(#101032) (also available online from the ASCD Web site: http://www.ascd.org)

- *The Differentiated Classroom: Responding to the Needs of All Learners* by Carol Ann Tomlinson (#199040)

- *How to Differentiate Instruction in Mixed-Ability Classrooms* (2nd ed.) by Carol Ann Tomlinson(#101043)

- *Leadership for Differentiating Schools and Classrooms* by Carol Ann Tomlinson and Susan Demirsky Allan (#100216)

VIDEOTAPES

- *At Work in the Differentiated Classroom* (3-tape series, plus Facilitator's Guide) ([#401071](#401071))

- *Differentiating Instruction* (2-tape series, plus Facilitator's Guide) ([#497023](#497023))

- *A Visit to a Differentiated Classroom* (videotape, plus Online Viewer's Guide) ([#401309](#401309))

For more information, visit ASCD on the World Wide Web (http://www.ascd.org),

School Improvement Maryland Website Resources

Content Standards. Retrieved September 2004 from School Improvement Maryland (http://mdk12.org/instruction/curriculum/reading/kv.html.

Instruction, Voluntary State Curriculum. Retrieved September 2004 from School Improvement Maryland, (http://mdk12.org/instruction/curriculum/index.html)

Maryland's Teacher Professional Development Standards. Retrieved September 2004 from School Improvement Maryland (http://mdk12.org/instruction/professional_development/teachers_standards.html)

School Improvement Planning: Leading your school through a school improvement process: Retrieved September 2004 from School Improvement Maryland http://mdk12.org/process/leading/

Teaching and Assessing, Retrieved September 2004 from School Improvement in Maryland, (http://mdk12.org/instruction/index.html

Technology Planning and Use Web Resources

Best Practices - lesson ideas from teachers in New York. Retrieved September 2004 from http://comsewogue.k12.ny.us/curriculum/conceptmaps/

Software and Web Resources

A. Inspiration- The Inspiration Graphical Mapping Software allows students and teachers to create concepts maps. Through Inspiration, students can create concepts maps for characters, themes, settings, and summaries of books and stories they are reading. Inspiration allows for a graphical depiction which shows links and connections between various pieces within the literature being studied. For primary school students the program kidspiration (produced by the same company) provides concept mapping tools that are more visually based for younger learners. http://www.inspiration.com/

B. Bride Media- Bride Media publishes multimedia CD-ROMs on Shakespeare plays including classics like Macbeth, Romeo and Juliet, Julius Caesar, and many others. The CD-ROMs include several interactive activities to reinforce skills and analysis that the students will gain while reading the test.
http://www.bridemedia.com/bmi/products/order/index.html

C. SAS - American Literature InterActivities- SAS - American Literature InterActivities is a unique language arts development program that addresses culture, themes, and stylistic devices associated with various literary periods and ethnic groups. Students will be taken through a series of pre-, during, and after- reading activities in order to better comprehend and analyze themes and devices in a literary selection.
http://www.sasinschool.com/software/americanlit/index.shtml

D. The Princeton Review- Educational Testing Activities- The Princeton Review, one of the industry leaders in educational testing now has online software available for the use of educators. By subscribing to the Princeton Review program, school districts will gain access to CD-ROMS, online tests, and paper assessments that can help in preparation for standardized tests in math and language arts.
http://www.homeroom.com

E. Classworks- Classworks provides a library of over 9000 interactive activities by creating a tailor made educational program for each student. Focusing on math and reading proficiency, Classworks will present students with a pre-assessment and create teaching aids and assessments in order to hone skills in over fifty language arts skill categories. http://www.classworks.com/

F. Renaissance Learning- Reading (reading practice, accelerated vocabulary and literature skills) and Math. It allows you to create a customized, individualized reading/math program for every student. It is web based. http://www.renlearn.com/

G. Orchard Educational Products- Orchard offers educational products for grades K-12. The Orchard program focuses on vocabulary building, phonics, and more. Orchard Learning also produces state specific assessments for over 35 states that can be purchased along with their software. http://www.orchardsoftware.com/

H. Gamecock Educational Software- Gamecock Educational software created by the Simony Learning Group has a series of educational games and activities that will help

improve phonemic awareness, reading fluency, writing, and basic comprehension skills. Products address curriculum standards and skills from grades K-12.
http://www.gamco.com/products.htm

I. Scholastic- Scholastic recognized by many as the nation's leader in educational products and has several software packages available to help students with language, writing, and vocabulary development. Included under Scholastic are software packages designed by Tom Snyder Productions including the Fizz and Martina series, Clifford Reading materials, etc.
http://www.tomsnyder.com/products/products.asp?Subject=LanguageArts

J. Weaver Instructional Systems- Weaver Instructional Systems designs and develops computer software programs for reading, language, and study skills. Weaver also offers a reading intervention program targeted for grades K-3. http://www.wisesoft.com/

K. One More Story- One More Story is an online database of hundreds of children's books that are available in audio and pictorial form. This is a great resource for students who need to increase their fluency and can be used to model excellent reading in a very interactive way. http://www.onemorestory.com/

L. Centaur Systems- Center Systems publishes educational software dealing with vocabulary development. The software focuses on an in depth understanding of Greek, Roman, and Latin roots. http://www.centaursystems.com/

M. Fast ForWord- Fast ForWord software is targeted at developing fundamental language, listening, and reading skills. This software package helps to build fundamental cognitive skills of memory, attention, processing and sequencing. Several interactive activities help in developing listening accuracy, phonological awareness and language structures. http://www.scilearn.com/prod2/

N. United Streaming- United Streaming uses video as instructional media. It is a great site for providing context and background knowledge to many topics being read and discussed in a typical language arts classroom. The site is password protected and costs money to use. However, most local school districts (that I know of) have purchased this service. Unitedstreaming allows you to select videos based on grade level/topic/Voluntary State Curriculum indicator. You can create your own playlist and create and/or print a quiz to accompany the video. The downside is the amount of time it takes to stream video if you are not using a broadband or other high-speed connection.
http://www.unitedstreaming.com

O. Teachers Domain- Teachers Domain has a series of lessons, classroom materials, and video clips that can be incorporated into K-12 classrooms. Materials are broken down by both grade level and topic so materials and information are easy to find.
http://www.teachersdomain.org

P. Brain Pop- Brain Pop provides animated movies for grades K-8 on a variety of academic disciplines. There are lessons with reproducible activities, experiments comic strips and timelines. Students can interact by completing the online quiz and asking

questions. While the service is not free, many school systems have purchased district licenses. You can also register for a two week trial for free. http://www.brainpop.com

Q. Discovery Learning Connection- The Discovery Learning Connection website contains a database of over 30,000 streaming videos to tutor students from ages 3-10. These videos help to provide the context needed to better understand passages being read and therefore form conclusions and make inferences. There are also games and quizzes that go along with the content. You can register for a two-week trial for free. http://www.discoverylearningconnection.com

R. Thinkport- Thinkport is a website that contains lesson plans, classroom materials, and several interactive activities to be used with students. On the website you can take online field trips where students learn through an interactive format about materials that often provide background information about materials being discussed in a language arts classroom. The site contains material for multiple grade levels and disciplines. http://www.thinkport.org

S. Mr. Manko's World- Mr. Manko's World is a website targeted towards middle school social studies and language arts teachers and students. The website has an abundance of downloadable resources including worksheets, assessments, and reading guides for several popular young adult novels. http://www.mrmanko.com

T. Starfall- Starfall is an excellent multimedia site for educators (typically grade K-3) who are looking for resources to better teach skills and content. It uses video to help teach phonemic awareness/phonics. Once students have developed phonics skills they can advance to reading genres, etc. It's very interactive, but not overwhelming or distracting. http://www.starfall.com

U. Audio Books For Free- Audio Books For Free is a website that provides books being transmitted aloud in mp3 format. Students or teachers can download books they are reading in class and listen to them for improved understanding and fluency. This is a great resource for students with reading difficulties. While t books are provided for free, the site does advertise to purchase some different formats of the stories. It also may take a high speed connection and some time to download. http://www.dvdaudiobooks.com/screen_main.asp

V. Scholastic- Scholastic is seen by many as one of the premier companies in children's literacy. Their website provides lesson plan, movies, games, quizzes, and interviews all targeted at improving student reading. The site contains materials perfect for a language arts classroom and covers several grade levels. http://teacher.scholastic.com/scholasticnews/index.asp

W. Storyline- Storyline is a website that helps story books come to life for students. The site allows children to read and follow along with the book. Often times, Storyline will have celebrities who are reading picture books through which students can follow along with their own paper version of the book. The site is targeted towards younger readers and English as a Second Language students who struggle with reading. http://www.storylineonline.net/

X. PBS Kids- PBS Kids contains an entire section dedicated to the Clifford the Dog books. Through the many activities and interactive read-alouds younger students who are just beginning to read can hone their comprehension and fluency skills. This is a great resource for struggling readers or English as a Second Language students. http://pbskids.org/clifford/

Y. Cyber Kids- The Cyber Kids reading activities are based off of the Choose Your Own Adventure books and allow students to navigate through several stories and make decisions on where the characters will go next. The site may be particularly beneficial to boys or weak readers who can become more involved in the stories that they read. http://www.cyberkids.com/cw/mul/

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SECTION X: Biographies of Contributors to Design Principles for Learner Centered Schools: *Differentiating Instruction to Improve Student Learning* (2006)

Hanne B. Mawhinney, Ph.D.

> *Coordinator of Organizational Leadership and Policy Studies,*
> *Department of Education Policy and Leadership,*
> *University of Maryland, College Park*

Dr. Mawhinney is an Associate Professor and Coordinator for the Organizational Leadership and Policy Studies area of the Department of Education Policy and Leadership in the College of Education, University of Maryland, College Park. Dr. Mawhinney teaches courses in organizational leadership and policy in education. Her research focuses on the institutional dynamics of change in educational organizations. Based on her research on educational leadership, Professor Mawhinney is currently Co Chair of the Maryland Professional Development Advisory Council and the President of the Council of Administrative Organizations of Maryland. She has been an expert witness, a member of the Maryland Task Force on the Principalship, and the Advisory Committee to the Maryland Principals Academies. Professor Mawhinney represents the Department of Education Leadership and Policy on the University Council for Educational Administration (UCEA). She was President of the Politics of Education Association. Dr. Mawhinney is currently a member of the editorial boards of *School Leadership and Management*, and for several years was a member of the editorial boards of *Educational Administration Quarterly*, and *The American Educational Research Journal*, acted as contributing editor for *Educational Policy*. Dr. Mawhinney has edited the five volumes of the Design Principles for Leader Centered Schools series. Other recent publications include: Teachers' Collective Efficacy Beliefs in Professional Learning Communities with J. Haas and C. Wood in *Leading & Managing*,(2005); "Diffusion of innovations: A mechanism for understanding change in student affairs" with A. Harvey-Smith (2005); Deliberative democracy in imagined communities: How the *Power Geometry* of globalization shapes local leadership praxis. *Educational Administrative Quarterly* (2004), and: Resolving the dilemma of rigor or relevance in preparing educational leaders: What counts as evidence of their knowledge and ability to act ethically? In *National Council for Professors of Educational Administration 2003 Yearbook.* Virginia: Scarecrow Press.

Contact Dr. Mawhinney at: (301) 405-4536 hmawhinn@wam.umd.edu

Shannon Bramblett Burke, Ph.D.

Title of Dissertation:

Teaching Expertise as a Culturally-Embedded Phenomenon:
A Case Study of One ESOL Department

Degree Conferred: 2004, University of Maryland, College Park

Description of Study:

In this ethnographic case study I explore culture and expertise in one ESOL department in the mid-Atlantic region of the United States. Unlike most studies of teaching expertise, I broadened the scope of the study to include not only teacher interactions with students, but also teacher interactions with other teachers. In the dissertation I describe and analyze the teaching expertise of three ESOL teachers. I collected data primarily through interviews and observations. ESOL teacher expertise and culture were assessed through the lens of ritual. Expertise in the ESOL culture revolved around two cultural goals. The first entailed helping ELLs make a cultural transition to the ESOL classroom. The second involved helping ELLs prepare for life beyond the ESOL classroom. This study suggests that some aspects of teaching expertise are closely linked to the shared cultural values of ESOL teachers. Thus, it is important to consider the complexity of time, place, and culture when attempting to understand teaching expertise as it applies to ELLs.

Biography

Shannon Burke currently works as an educational consultant for federal programs under the *No Child Left Behind Act of 2001* for the Virginia Department of Education. The federal programs she works with include migrant education (Title I, Part C), neglected or delinquent education (Title I, Part D), and comprehensive school reform (Title V, Part A). Shannon was a high school ESL teacher in Tennessee before coming to the University of Maryland to obtain her doctoral degree. She graduated with a Ph.D. from the Department of Education Policy and Leadership in 2004. Her research interests focus on teaching expertise with linguistically and culturally diverse populations.

Contact Information:

Shannon Bramblett Burke
9409 Fairview Avenue
Manassas, VA 20110
(703) 331-2102
shannonbramblett@hotmail.com

Daria Buese, Ph.D.

Title of Dissertation:
Teaching Amidst High-Stakes Accountability: Cases Of Three Exemplary Teachers

Degree Conferred – August, 2005, University of Maryland, College Park

Description of Study: Teachers are regularly acknowledged as the single most important within school factor influencing student achievement. Yet, despite this claim, little is known about how teachers themselves understand high-stakes accountability in relation to their teaching practice. To study that relationship, this study asked how exemplary teachers' constructs of good teaching reside in a high-stakes accountability climate. The study was conducted in Maryland, during the first year of the restructuring of its previously high-stakes accountability system in response to the 2002 ratification of the No Child Left Behind Act. It employed an interpretive/descriptive case study methodology. Cases were developed on three mathematics teachers, two fifth grade teachers and one eighth grade teacher, who were selected by a panel of educational stakeholders within their individual school districts as Maryland Teacher of the Year candidates. Each teacher enacted a new mathematics curriculum, prepared their students for a new state achievement test, and responded to school based accountability driven structures and directives during the 2002-2003 school year. Data sources include classroom observations over an eight-month period, interviews with the teachers and their principals, and artifacts from observations and interviews.

Biography:
Daria Buese is a lecturer in the Department of Curriculum and Instruction at the University of Maryland and teaches in the Teacher Leadership Masters Degree Program. She is also in her fourth year of participation with the High Quality Teaching Study at the university, a longitudinal study of teaching quality that focuses on what teachers do to help struggling 4th and 5th grade students succeed in mathematics and reading, as well as how various educational policies and organizational factors influence the ability of teachers to scale up and sustain effective pedagogy over time. Daria was a middle school mathematics and choral music teacher in Washington state before coming to the University of Maryland to obtain her doctoral degree. She graduated in 2005 with a Ph.D. from the Department of Education Policy and Leadership. Her research interests focus on the relationship between teaching practice and educational policies.

Contact information:
Daria Buese
Lecturer
Department of Curriculum and Instruction
2311 Benjamin Building
University of Maryland
College Park, MD 20742

dbuese@umd.edu
301-405-1168

Alice Faber, Ed.D.

Title of Dissertation

A Narrative Inquiry into Perceptions of the Development of Self-determination by Community College Students with Learning Disabilities

Degree Conferred - May 2006, University of Maryland, College Park

Description of Study

This study describes the factors that effected the development of self-determination by three individuals who formerly received special education services for learning disabilities. The research question was: How do community college students with learning disabilities who received special education services in school describe the influences on their capacity to be self-determining? Narrative methods of inquiry were used to explore the descriptions of three young adults who had been identified as having a learning disability, were currently enrolled in a community college, and had received special education services in school. They described influences they perceived on their capacity to be self-determining. The findings highlighted the importance of the role of families, friends, educational setting, and religion on the development of self-determination. The findings also emphasized the concept of the individual with self-determination as a causal agent of his/her life. Implications for policy and practice included establishing better communication between the home and educational setting and helping parents with questions regarding their child's disability. Additionally, school personnel need to develop effective skills in helping students become self-determining and in working with students with learning disabilities.

Biography

Alice Faber has worked for Baltimore County Public Schools for the past 21 years as a special education teacher and a special education department chairman. Previous to that, she worked for Fairfax Public Schools for 11 years as a resource teacher in a program for students with cognitive disabilities.   She received her B.A. in History from Virginia Tech in Blacksburg, Virginia; her certification in special education from the University of Virginia, Northern Virginia; her M.Ed. in Administration and Supervision from George Mason University in Fairfax, Virginia; and her Ed.D. in Education Policy, Planning and Administration from the University of Maryland, College Park, Maryland. Her research interests are centered on the development of self-determination in students with disabilities.

Contact information:
Dr. Alice Faber
Special Education Department Chair\
Owings Mills High School
124 Tollgate Road
Owings Mills, MD 21117
afaber@bcps.org
(410) 887-1526

Leslie Kee

Doctoral Candidate

Biography

Leslie Kee has served as a teacher in Buffalo , NY , Washington , DC , and Montgomery County , MD.   She has also worked extensively with with alternative programs such as Upward Bound Pre-College Program in SUNY Buffalo and the Maryland Reads Program in Prince George's County. She has taught undergraduate courses at the University of Maryland in educational leadership. Leslie Kee is currently pursuing a Ph.D. in Education Policy and Leadership at the University of Maryland , College Park . Her research interests include character development, parental training and the equalization of urban education.

Contact Information:

Leslie A. Kee, Graduate Assistant
University of Maryland
2115 Benjamin Building
College Park, MD, 20742

lkee@umd.edu
310-405-3567

Joseph Manko

Doctoral Candidate, EDPL

Biography:

Joseph Manko is currently the technology coordinator at Rosemont/Elementary Middle School in Baltimore, Maryland. He obtained his bachelor's degree from the University of California Los Angeles in political science and history and arrived in Maryland in 2002 as part of the Teach For America program. He has taught for the past four years in the Baltimore City Public School system as both a middle school social studies and language arts teacher. In the 2005-2006 school year, his sixth grade language arts class scored third highest amongst all Baltimore City schools on the Maryland State Assessment (MSA) Test. He holds two masters degrees from Johns Hopkins University in Teaching (2004) and Education (2006) as well as Maryland certificates in social studies, leadership and administration, and instructional technology. Joe currently attends the University of Maryland, College Park's educational doctoral program through the Department of Education Policy and Leadership. His research interests focus on comparing high and low performing school in urban educational settings and exploring applications for instructional technology to improve student learning.

Contact information:
Joseph Manko
Technology Coordinator
Rosemont Elementary/Middle School
2777 Presstman Street
Baltimore, Maryland 21216

josephmanko@yahoo.com
(410) 206-3893
www.MrManko.com

Kmt Shockley, Ph.D.

Title of Dissertation

When culture and education meet: An ethnographic investigation of an Africentric private school in Washington, DC

Date Conferred: 2003, University of Maryland, College Park

Biography

Dr. Kmt Shockley is assistant professor of education at George Mason University in Arlington, Virginia. Dr. Shockley has authored two books and several articles, mainly focusing on African American education. Dr. Shockley's scholarship focuses on African education. His articles have appeared in the *Sankofa Journal*, *the Black World Today,* and *the Journal of Negro Education* (upcoming), and he has also appeared in *Black Issues in Higher Education.* Dr. Shockley has authored two books. His most recent one, published in 2005 was forwarded and endorsed by Dr. Asa G. Hilliard, III, the book is entitled *Cultural Truth Telling and the Power of Education.* Dr. Shockley has appeared on MSNBC, CNN, Fox, and NBC where he was interviewed by former NAACP head Kweisi Mfume to discuss his first book *The BarberShop Trick: How Hollywood Controls the Mind of Americans and Blacks.* Dr. Shockley is on the books as an official "Living Legend" in Cincinnati because of his work and impact in that area from the years 1994-1998. He has proven his dedication to the community through his activism. Dr. Shockley has traveled to Senegal, Egypt, Ghana, and Nigeria. He has also traveled throughout North and South America for his African centered, humanistic and commonsensical approach to true education and personal transformation.

Contact

Kmt Shockley
George Mason University
Email: kmtgs@yahoo.com

Anita N. Voelker, Ph.D.

Title of Dissertation:

***How Six Fourth Graders Experienced and Understood Literacy Events
During One Year in a Quality School Library***

Degree Conferred: December, 2006, University of Maryland, College Park

Description of Study:

Using a "childist" lens (Hunt, 1991), I discovered how six fourth graders experienced and understood literacy events in a quality school library program over the course of one academic year. After collecting and analyzing data from observations and interviews, I crystallized the children's experiences and understanding through individual literacy portrait. Using a replica of the school library for the final interviews, I asked the students questions to determine if my findings matched the children's thinking. Through this process, I found a surprising paradox: Although literacy events were ubiquitous in this quality school library, literacy was rare. Drawing on Swales (1990) theory of discourse communities, I argue that the contradiction may stem from differences in the school library and literacy discourse communities, as well as complexity in defining literacy.

Biography

Anita N.Voelker began her career as a fourth grade teacher in the Baltimore County Public Schools. She will received her Ph.D. in Curriculum and Instruction: Reading Education in from the University of Maryland, College Park in 2006. Currently, she is an assistant professor at Messiah College in Grantham, PA where she teaches reading/literacy courses and children's literature. Along with Professor M. Jean Dreher of the University of Maryland, she presented "Enhancing Young Children's Experience with Information Text: Motivation to Read and Reading Habits" at the National Reading Conference in Scottsdale, AZ and contributed a chapter entitled "Science books for primary-grade classrooms: The importance of balance and quality" in W. Saul (Ed.), *Border crossings in literacy and science instruction: Perspectives on theory and practice* (2004) published by the International Reading Association. Pennsylvania Reads, the peer-reviewed journal of the Keystone State Reading Association, will publish her article on critical information literacy in their fall issue. Along with her strong research interest in critical information literacy, Anita is currently conducting research on the development of teacher-leadership within the population of undergraduate education majors.

Contact Information:

Anita N. Voelker
Messiah College
1 College Avenue
Box 3019
Grantham, PAA 17027
1.717.796.1800 extension 2270
avoelker@messiah.edu

Reflections of Design Imperatives for Differentiating Instruction

We end this volume of the Design Principles Report by highlighting some of the current thinking on design imperatives that has guided our preparation of this report.

Daniel Goleman (2006)

If a principal wants to create an emotional climate that "lifts all boats," he or she must lead the group toward positive, empathetic social interactions.

Lois Weiner (2006)

An impersonal, bureaucratic school culture undercuts many of the teaching attitudes and behaviors that draw on student strengths.

Emma Violand-Sanchez and Julia Hainer-Violand (2006)

Acknowledging the strengths that Latinos bring to school and community is crucial for their academic and social success.

Carol Ann Tomlinson and Jane Jarvis (2006)

Teaching to student strengths helps students see themselves positively

Deborah Stipek (2006)

Being a caring and supportive teacher means holding students accountable while providing the support they need to succeed.

Robert J. Sternberg (2006)

From Alaska to Kenya, research shows that students in underrepresented minority groups have culturally relevant knowledge and diverse cognitive abilities that schools can use to promote learning.

Seana Moran, Mindy Kornhaber, Howard Gardner (2006)

Profile Students, Don't Score Them: *Multiple intelligences theory propose that It IS more fruitful to describe an individual's cognitive ability in terms of several relatively independent but interacting cognitive capacities rather than m terms of a single "general" intelligence.*

Dr. Mel Levine (2006)

"One of the ways we can leverage skills is by continually pegging them to a child's affinities."

Renate Nummela Caine and Geoffrey Caine (2006)

We introduce topics through what we call a "global experience" that engages the senses directly and creates an emotional and visceral response.

CONTRIBUTORS:
Design Principles for Learner Centered Schools: *Differentiating Instruction to Improve Student Learning* (2006)

Hanne B. Mawhinney, Ph.D.

Coordinator of Organizational Leadership and Policy Studies,
Department of Education Policy and Leadership, University of Maryland, College Park
Email: hmawhinn@umd.edu

Lesley Kee

Doctoral Candidate Organizational Leadership and Policy Studies,
Department of Education Policy and Leadership, University of Maryland, College Park
Email: lakee26@yahoo.com

Joe Manko

Doctoral Candidate Organizational Leadership and Policy Studies,
Department of Education Policy and Leadership, University of Maryland, College Park
Email: josephmanko@yahoo.com

Daria Buese, Ph.D.

Adjunct Professor, Department of Curriculum and Instruction
University of Maryland, College Park
Email: dbuese@wam.umd.edu

Shannon Bramblett Burke, Ph.D.

Consultant,
Email: shannonbramblett@hotmail.com

Alice Faber, Ed.D.

Special Education Department Chair
Owings Mills High School, Baltimore County Public Schools
Email: afaber@bcps.org

Anita N. Voelker, Ph.D.

Assistant Professor
Messiah College, Grantham, PA
Email: avoelker@messiah.edu

Kmt Shockley, Ph.D.

Assistant Professor
George Mason University
Email: kmtgs@yahoo.com

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For more information on this report or
educational programs, please
contact:

Hanne Mawhinney, Ph.D.

Coordinator of Organizational Leadership and Policy Studies
Department of Educational Policy and Leadership
College of Education
University of Maryland

301-405-4546
hmawhinn@wam.umd.edu