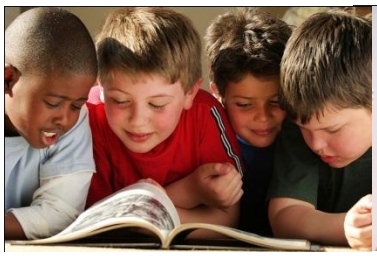
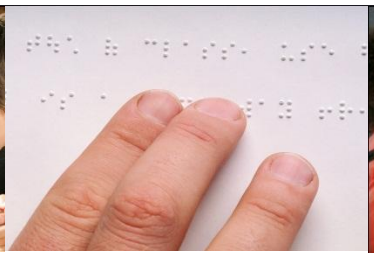





A Route for Every Learner

Universal Design for Learning (UDL) as a Framework for Supporting Learning and Improving Achievement for All Learners in Maryland, Prekindergarten Through Higher Education

Recommendations from the ***Task Force to Explore the Incorporation of the Principles of Universal Design for Learning into the Education Systems in Maryland***, submitted to the Maryland State Board of Education, the Senate Education, Health, and Environmental Affairs Committee, the Budget and Taxation Committee, the House Committee on Ways and Means, and the Health and Government Operations Committee,
March 2011

MARYLAND STATE DEPARTMENT OF EDUCATION
Preparing World-Class Students

MARYLAND STATE BOARD OF EDUCATION

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Dear Friends of Maryland Public Education:

The Maryland State Department of Education is committed to providing a world-class education to all students in Maryland so they will be prepared for college and careers in the 21st century. Certainly, Maryland schools have made great strides toward this goal. For the third straight year Maryland's education system has been ranked as number one in the nation by *Education Week*, the nation's leading education publication. This honor was followed closely by the College Board ranking the State first in participation in the nation on the rigorous Advanced Placement program for the third consecutive year. In addition, Maryland schools and school systems continue to show significant progress on State assessments.

While we celebrate these accomplishments, we remain committed to continuing our important work of closing existing achievement gaps among various groups of students. In addition, among groups of students who are making adequate yearly progress, our goal is to realize a more rapid rate of progress. Improvement in these areas is critical in our efforts to graduate students who are college and career ready. As we launch Maryland's third wave of educational reform, we must approach instruction differently to achieve desired outcomes. With the adoption of the national Common Core State Standards, our work can focus on incorporating Universal Design for Learning (UDL) principles into our Maryland Common Core State Curriculum framework and instructional toolkit. UDL's foundations in the learning sciences and brain research regarding how individuals respond to a learning environment provide crucial guidance toward instructional design that optimizes learning opportunities for all.

All students need support during the learning process, but it is critical that the support provided is varied and appropriate to learning strengths, needs, and interests. As educators, we need to think more strategically about how we can design curriculum, shape instruction, select instructional materials/technology, and develop assessments that support variations in learning. We need to think about how we can harness the power of technology to support and challenge students as well as capitalize on simpler, non-technological ways to engage students, present information, and measure progress. Universal Design for Learning provides us with a research-based framework for teaching and learning that will help us better support student learning and, ultimately, reach our goal of providing a world-class education and students who are well prepared for college and careers in the 21st century.

Like Maryland, many states are beginning to recognize the value of Universal Design for Learning and are starting to implement it in classrooms. Maryland's Task Force comprised of a broad group of stakeholders collaborated to move the implementation of Universal Design for Learning principles and guidelines forward in Maryland, from prekindergarten through higher education. With this Task Force and its bold recommendations, Maryland is again in the forefront of educational reform.

I am proud to support the recommendations of this Task Force and thank the members for their outstanding work on behalf of students and families in Maryland. I whole-heartedly encourage local school systems, boards of education and schools to embrace the recommendations and to implement them as soon as possible for the benefit of all students.

Sincerely,

Nancy S. Grasmick

Nancy S. Grasmick
State Superintendent of Schools

A Note from the Chair of the Task Force

On May 4, 2010, Governor O'Malley signed the Universal Design for Learning (UDL) bill (HB 59/SB 467), establishing a Statewide Task Force to Explore the Incorporation of UDL Principles into Maryland's Education Systems. As chairperson of the Task Force, I am pleased to present this report, the work product of the twenty-two (22) members of the Task Force. The UDL Task Force as a whole should be commended for the extensive literature reviewed and consultation with experts in the field of UDL that contributed to the development of this report. As a result of these combined efforts, there was clear consensus that UDL principles constitute a common sense framework for education—that there is no one method, no lock-step curriculum, that will reach the needs of our diverse learners.

Today's classrooms are highly diverse. In this report, "A Route for Every Learner," diversity refers not only to cultural diversity, but to diversity among learners. In every classroom, teachers provide daily instruction to students who have visible and invisible disabilities, as well as students who are disengaged in the learning process. It begs the question of how can teachers manage this? How can teachers differentiate instruction to address the full range of learners? UDL makes differentiation more manageable since it addresses the needs of a range of learners from the outset that can reduce the amount of individual accommodations and after-the-fact re-teaching, which can be time consuming and often ineffective.

UDL is not "one more thing" teachers need to do. It is not simply about multisensory teaching and learning. It is not solely focused on technology. When teachers feel compelled to adhere to lock-step lesson plans and assessment schedules, when chairs permanently face the front of the classroom, when teachers do most of the talking, and when all students are expected to prepare and complete the same task using the same methods and materials, UDL is not in evidence.

UDL implementation encompasses good teaching practices from the outset by mindfully including options for how information is presented, combined with multiple options for action, expression and engagement. However, teachers cannot accomplish the implementation of UDL principles alone. Local school system staff need to provide support by looking for new ways to design and deliver flexible digital materials to teachers, to re-examine the distribution of technology devices in classrooms, and to collaboratively approach the evaluation and selection of new resources, textbooks and core materials to ensure that there is a range of options that meets the varied needs of all students.

In addition, local school systems will need to work with publishers and vendors to procure textbooks and instructional materials in multiple formats and find new ways to embrace mainstream technologies in schools and classrooms. It requires professional development at all levels of organizations. The continued leadership of the Maryland State Department of Education and State and local Boards of Education are needed to move forward on a path that builds on existing initiatives. Overall, it requires a collective approach to address teaching and learning to prepare 21st century learners.

I have had the opportunity to observe teachers participating in the Montgomery County Middle School UDL Project, which is described later in this document, who are committed to the everyday implementation of UDL in their teaching practices. When used effectively in classrooms, choices are evident to meet the needs of all learners, classroom layouts vary to meet learning objectives, and more students are actively engaged in collaborative learning and critical thinking. Teachers report that once new routines are established, students produce better products and behavior improves. Teachers remark that when they return to traditional teaching practices, their students are less engaged. In short, UDL operates at all levels, helping teachers create more flexible, engaging classroom approaches while lowering barriers to learning for diverse learners.

It is my hope that this report, "A Route for Every Learner," lays the foundation to move UDL forward in Maryland. I am especially indebted to the Task Force members for their professionalism and the seriousness with which they approached the work required to develop this report, and to Ms. Fran Sorin, Ms. Lauren Proutt Blundin and Ms. Idalyn Hauss who worked diligently to synthesize the views of the members into this strong consensus product. In addition, I appreciate the guidance and support provided by Dr. Carol Ann Heath, Assistant State Superintendent and Ms. Sharon A. West, Chief, Student Achievement and Professional Development Branch, for the Division of Special Education/Early Intervention Services. This report combines the focused efforts of many who worked together to carefully consider the future of UDL in Maryland education systems.

Denise C. DeCoste, Ed.D.
Chair of the UDL Task Force

Acknowledgements

The Maryland State Department of Education (MSDE), Office of the State Superintendent, and Divisions of Special Education/Early Intervention Services (DSE/EIS), Instruction (DOI), and Assessment and Accountability (DAA) gratefully acknowledge the time, effort and expertise shared by the Task Force members listed below. The Task Force members worked collaboratively to meet the charge of Senate Bill 467 and House Bill 59 under the expert leadership provided by the Task Force Chairperson Dr. Denise DeCoste. We thank Dr. DeCoste for her engaging Task Force meetings that were effectively designed to implement the principles of Universal Design for Learning (UDL) while developing a common language and deeper understanding of what the application of UDL entails.

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Individuals Interviewed

Task Force members interviewed individuals with expertise or experience in the implementation of UDL. We appreciate the time that those interviewed were willing to give to share their expertise, implementation suggestions, and guidance regarding potential pitfalls to Maryland. We would like to thank the following individuals:

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The MSDE also appreciates the valuable support provided by consultants Ms. Lauren Proutt Blundin and Ms. Idalyn Hauss with meeting preparations, ongoing communication and support of the work of the Task Force, and the development of this report. The public feedback and interest from a variety of stakeholders including parents, advocacy groups and institutions of higher education have been helpful in the enhancement of the original draft of the report. We thank all of you for taking the time to provide suggestions, many of which you will see incorporated into this final report.

Executive Summary

Universal Design for Learning

Universal Design for Learning (UDL) is a research-based framework for curriculum design that includes the educational goals, methods, materials, and assessments that enable all learners to sustain their enthusiasm for learning while gaining the knowledge and skills required for successful mastery of desired outcomes. This is accomplished by simultaneously providing rich supports for learning that reduce learning barriers that may be inherent in the curriculum, while maintaining rigor and high achievement standards for all students.

Universal Design for Learning (UDL) is based on three primary principles:

- "Multiple means of representation, to give diverse learners options for acquiring information and knowledge,
- Multiple means of action and expression, to provide learners options for demonstrating what they know,
- Multiple means of engagement, to tap into learners' interests, offer appropriate challenges, and increase motivation" (Center for Applied Special Technology [CAST], 2011a).

UDL provides a framework for curriculum design, instructional processes, and assessment that gives all students equal opportunities to learn and to demonstrate what they have learned. Based on neurological research, UDL recognizes that learning is different for each individual, and therefore, for optimal learning to occur, a variety of methods and materials to implement, support and measure learning are needed. UDL builds flexibility for learners into curriculum and assessment at the development stage, which enhances teachers' ability to make adjustments for a broader range of students during classroom instruction. Most importantly, all learners benefit from UDL—including students who are gifted and talented, English language learners, students with physical, cognitive, and/or sensory disabilities, students with emotional or language/learning disabilities, learners who may be a part of more than one of these types of learners, and students without disabilities. In fact, UDL in education is analogous to Universal Design in architecture, where, for example, ramps and curb cuts designed for people in wheelchairs are now considered essential by people without disabilities, such as parents pushing strollers or people moving heavy furniture.

Universal Design for Learning Benefits All Maryland Students and Teachers

UDL is particularly relevant to Maryland's systems of education. Maryland is known for its high expectations for all students as well as for the diversity of its student population. This is a challenge when one considers that in all schools and institutions of higher education there are learners with diverse abilities and backgrounds who struggle to meet standards, as well as

those who are ready for more rigorous instructional programming. The use of UDL principles and guidelines in curriculum and course design are critical for learner success. Meeting the diverse needs of students requires a creative, flexible approach to education. UDL is just such an approach.

"A universally designed curriculum is designed from the outset to meet the needs of the greatest number of users, making costly, time-consuming, and after-the-fact changes to curriculum unnecessary" (CAST, 2011b). Teacher efforts are supported by having Universal Design for Learning integrated into the curriculum. Through the provision of flexible instructional materials, techniques, and strategies for differentiating instruction that addresses diverse learner needs, teachers are able to provide students with a variety of opportunities to achieve success.

As described by the Center for Applied Special Technology (CAST, 2011b), "Universally designed curriculum provides options for:

- Presenting information and content in different ways (the 'what' of learning)
- Differentiating the ways that students can express what they know (the 'how' of learning)
- Stimulating interest and motivation for learning (the 'why' of learning)"

When students are motivated and have access to the tools and content of learning, it is logical to expect improvements in educational outcomes. Combined with *A Tiered Instructional Approach to Support Achievement for All Students: Maryland's Response to Intervention Framework* (MSDE, 2008), a model of academic intervention for students not achieving standards, UDL has the potential to impact the following:

- numbers of students requiring special education services,
- number of students dropping out of school,
- number of gifted and talented students who are not engaged in current learning activities,
- number of accommodations needed during instruction and assessment, and
- the amount of time teachers spend individualizing instruction.

UDL also has the potential to provide more students direct access to the general curriculum and impact achievement for all students.

Universal Design for Learning Implementation Does Not Have to Be Expensive

As part of Maryland's third wave of reform and requirements in the federal Race to the Top grant, the adoption of the Common Core State Standards has resulted in revisions to Maryland's curriculum and assessments. UDL principles and guidelines are already being incorporated into the revision and development process from the outset; therefore, the need

for a separate, expensive revision process is unnecessary. In addition, many of the principles of UDL can be readily adopted for little or no cost. Although technology's inherent flexibility is invaluable to increasing students' access to curriculum and assessments, there are many ways to implement UDL principles without technology that will have a powerful impact on student achievement.

Maryland's Universal Design for Learning Task Force

The Universal Design for Learning Task Force was established through House Bill 59 and Senate Bill 467. The Task Force was charged with examining the efficacy and feasibility of implementing UDL in Maryland's educational systems, and promulgating proposed regulations.

The Task Force members reviewed the literature on UDL, interviewed national experts regarding the application of UDL principles, and experienced the use of those principles within Task Force meetings. As a result of these experiences, the Task Force members reached consensus that the application of UDL principles should be promoted throughout Maryland education systems to ensure all learners have the best opportunity possible to equitably benefit from teaching and learning activities.

The Task Force also reached consensus that at this time, it would be premature to promulgate proposed regulations. However, Task Force members recommended the development of a strategic and systematic plan for building stakeholder awareness and capacity at the State, local, and institutions of higher education levels prior to mandating policies through regulation. As a result, the Task Force member**s** have made recommendations for suggested guidance or steps that can be taken by the State Board of Education, the Maryland State Department of Education, institutions of higher education, local school systems, and schools to lay the foundations for increased implementation of the application of UDL principles in the coming years.

Recommendations Overview

The recommendations from the Task Force are sensitive to fiscal constraints while still providing powerful steps forward in advancing the use of UDL in Maryland education systems. The Task Force recommendations are designed to suggest steps that educational entities can take to support the implementation of UDL principles in their organizational and instructional decision-making, planning and processes.

Note: For the full text of the recommendations and suggestions for implementation, please see the report beginning on page 10. (The full recommendations begin on page 37.)

Maryland State Board of Education:

- Approve a UDL policy that indicates that UDL principles be included in the State's strategic plan and used during curriculum and assessment development, during the review and selection process for textbooks, instructional materials, and technology, and included in requests for proposals (RFPs), grant criteria, and program approval criteria where appropriate.
- Request a steering committee comprised of prekindergarten–16 education stakeholders, including parents, to support the advancement of UDL integration in the areas of instructional materials and technology, professional development, and curriculum and instruction.

Maryland State Department of Education:

- Define and describe the critical elements of UDL for inclusion in State policies and practices.
- Include UDL principles in all State plans (e.g., Strategic Plan, Technology Plan, etc.) and organizational and instructional processes used throughout the Department.
- Develop or compile resources that can support the creation of an implementation plan for educating stakeholders about UDL and for capacity-building professional development for educators within the MSDE and across the State (e.g. online courses, Web-based resources).
- Include the application of UDL principles in the requirements as appropriate for plans submitted to the State by outside entities such as grant applications, Master Plans, institutions of higher education program approval, and professional development plans.
- Create and implement ongoing professional development for State and school system leadership that supports the application of UDL principles and guidelines.

Local School Systems:

- Request that the local board of education establish a policy supporting the implementation of UDL principles to eliminate curriculum and assessment barriers for diverse learners while promoting high levels of achievement for all learners.
- All school system and school administrators collaboratively promote UDL policy implementation through improvement plan development, master scheduling to allow for UDL planning, capacity-building professional development, and job-embedded professional learning opportunities.
- All school system and school administrators enlist the involvement of parents and community stakeholders in support of this effort to maximize learning opportunities for all students.
- School system and school administrators develop processes and procedures that encourage collaboration for developing, compiling and disseminating effective

practices and materials that reduce or eliminate student barriers to learning across schools throughout the school system with considerations for digitally sharing lessons and materials with colleagues across the State.
- School system and school administrators collaborate across all departments on the development of plans for strategic uses of existing or future funds to support the purchase of technology and infrastructure to support UDL and other 21st century learning practices.

Schools:

- Establish a UDL vision with stakeholders including parents, community members, and all staff.
- Embed this UDL vision in the school improvement plan by analyzing current UDL teacher implementation and current access to technology devices in classrooms, and creating a professional development plan to build UDL capacity using job-embedded professional learning.
- Provide opportunities to examine classroom configuration, the use of learning stations, small groupings, performance-based and project-based learning, and the incorporation of choices and flexibility into teaching and learning to maximize learning for diverse learners.
- Provide time in the master schedule to plan with UDL in mind, to collaborate across disciplines and reflect on instructional practices, and provide mechanisms to share lessons and materials.

Maryland Institutions of Higher Education:

- Ensure that all faculty understand that UDL is not an add-on, but blends proactive course design with inclusive instructional strategies to benefit a wide range of students to the greatest extent possible using flexible options to deliver content and allowing for flexible options for expression and engagement.
- Embed UDL into the vision and strategic planning for organizational and instructional practices within the institution. Have instructors embed UDL principles in course syllabi and in the design and delivery of content and assessments.
- Ensure that UDL is modeled in the coursework, planning, and delivery, especially for teacher and administrator pre-service and in-service preparation programs.
- Provide active support for the implementation of UDL principles and guidelines through professional development partnerships with local school systems, the Maryland State Department of Education, in education preparation programs, and in professional development schools.

A Note on Budget Constraints

As mentioned previously, the Task Force members are sensitive to budget constraints in the current fiscal climate. However, there are many steps that can be taken within existing budgets that can advance the use of UDL in Maryland. As Maryland strives to provide a world-class education for all students while closing remaining achievement gaps and accelerating the progress of advanced learners, the application of UDL principles can provide the route to achieving this end.

Task Force Conclusions

In summary, the Task Force found sufficient evidence as to the efficacy and feasibility of UDL and formulated some suggestions for incremental implementation within the education systems of Maryland. In a National Education Association (NEA) policy brief (2008), NEA President Dennis Van Roekel stated, "In today's dynamic, diverse classrooms, Universal Design for Learning offers all educators and students an exciting opportunity to use strategies and technologies that bridge the gap in learner skills, interests, and needs. By accommodating students' different learning styles, UDL is able to transform instruction into a more engaging, meaningful experience."

Literature reviews revealed that specific strategies exist for applying UDL as a blueprint for curriculum development. In addition, the literature provided suggestions for using UDL principles and guidelines for instructional planning in the development of goals, teaching methods, instructional materials, and assessments in diverse classrooms. Strategies and planning tools that have been developed provide the foundations for flexibility in the ways information is presented, students respond or demonstrate knowledge and skills, and students are engaged in classroom instruction.

Both literature reviews and interviews revealed that the implementation of UDL in curriculum and instruction reduced student barriers to learning and resulted in more effective instruction for a broader range of learners while maintaining high achievement expectations for all students. The Task Force believes that it is feasible to incorporate and apply UDL principles into the policies, practices, and curriculum of the elementary, secondary, postsecondary and higher education systems in Maryland. This includes the policies and practices regarding curriculum development; the evaluation, selection, and design of textbooks and other instructional materials; the purchase and use of technology for instructional purposes; teacher preparation and staff development; the development of classroom, school system, and statewide assessments; and State grants. As Maryland moves forward in implementing UDL in its education systems, an evaluation plan for evaluating the impact of the implementation of the incorporation and application of UDL should be developed.

Maryland Voices in Support of Universal Design for Learning

From Maryland Educators

"Offering meaningful options, supports, and choices allows students to drive their own learning. They become our partners and grow into life-long learners. When they take control of their learning, they demonstrate increased engagement, motivation, and achievement. "

Elissa Loeb Waldman, Teacher, Advanced English 7,
Lakelands Park Middle School, Maryland

"UDL has allowed those who struggle with the curriculum, to not only understand it, but to thrive and achieve. UDL gives all students a variety of ways to learn and express their knowledge. It is the way true teaching and learning should always occur."

Caitlin McCurley, Advanced English 8 and Reading, Educational Support Team,
SERT Coordinator, Lakelands Park Middle School, Maryland

"Implementing UDL made me realize that choice must be embedded in every lesson, because instruction that is tailored for all engages all."

Crystal Jade Caballero, Educational Support Teacher,
Lakelands Park Middle School, Maryland

"Universal Design for Learning provides teachers with the inspiration and guidance to find ways to help our neediest students. Discovering methods, strategies and technologies to assist kids who are having trouble accessing the curriculum can only make all of us better teachers and learners."

Craig C. Crowley, Reading Teacher, Rosa M. Parks Middle School, Maryland

"Giving our students choices as to how they take in the information presented (i.e. use of screen reader or digital materials, independent reading, working with a partner, etc.) empowers them, makes them actively involved in their own learning, and helps them develop metacognition or self-awareness of their own learning styles and needs."

Katherine Naimon, Special Education Teacher, Tilden Middle School, Maryland

"…I can say that as a school administrator, the UDL format would have my full support. Maryland continues to be on the forefront of breaking ground in education, and we are faced with challenges that are common to most states throughout the nation… "

Diedra B. Tramel, Principal, Frances Fuchs Early Childhood Center, Prince George's County

From Maryland Parents

"I am a parent of a unique learner in middle school who has cerebral palsy. I am in complete support of this task force and of the ideology that went into creating it. It may be too late for my son, but there are many just like him every year who get lost in the cracks of education. We must find a way to reach all of our students and give the opportunity for achievement. Thank you to the Governor and the State Department of Education for understanding this."

Catherine Thomas, Anne Arundel County

"…As a parent of a child preparing to enter the Baltimore County public school system, I whole heartedly support the task force's recommendations and look forward to the implementation thereof in a prompt, efficient manner so that all children in Maryland's public schools can benefit from such a transformative approach to education."

Terri Duncan, Baltimore County

"Thank you so much for your efforts to bring UDL to the state of Maryland. As the parents of two beautiful daughters, one with special needs, we greatly anticipate the implementation of UDL in our local school system. I know UDL will help both of our daughters reach their academic potential in different and challenging ways. The implementation of UDL will be an asset to all students and teachers."

Doug and Susan Herman, Anne Arundel County

From Maryland Organizations

"The Arc Central Chesapeake Region is pleased to fully support the recommendations of the Universal Design for Learning Task Force. We believe that the implementation of the UDL principles will help all students in the state of Maryland achieve their best. Specifically, we believe that UDL is crucial to the success of children with intellectual and developmental disabilities because it has flexibility in how information is presented and gives the child multiple ways to demonstrate their strengths and knowledge. In the five counties we serve,

the number of children with disabilities included in the general classroom is growing. We see UDL as a valuable tool teachers can use to engage those children and promote respect and achievement for all the students."

Kate Rollason, Executive Director, The Arc Central Chesapeake Region

"The members of the Maryland Down syndrome Advocacy Coalition (MDAC) wholeheartedly support the report and its recommendations, and we have the utmost confidence that the leadership of the Maryland State Department of Education and the Maryland State Board of Education will facilitate implementation of the report's recommendations without delay."

Maryland Down syndrome Advocacy Coalition (MDAC)

"Maryland PTA believes the Universal Design for Learning (UDL) task force recommendations will increase educational opportunities for ALL students—from those with special needs to average learners to the highly gifted."

Maryland PTA

A Route for Every Learner

Universal Design for Learning (UDL) as a Framework for Supporting Learning and Improving Achievement for All Learners in Maryland, Prekindergarten Through Higher Education

What is Universal Design for Learning (UDL)?

UDL in Brief

UDL is a framework for curriculum design, instruction, and assessment that gives all students equal opportunities to learn and to demonstrate what they have learned. UDL is built on the premise that there is not one kind of learning. Learning differs across tasks, across development, and among individuals.

The Center for Applied Special Technology (CAST), an internationally recognized leader in innovative learning strategies, pioneered Universal Design for Learning and has been instrumental in its development and growth across the United States. On its Web site, www.cast.org, CAST describes UDL as "a blueprint for creating instructional goals, methods, materials, and assessments that work for everyone—not a single, one-size-fits-all solution but rather flexible approaches that can be customized and adjusted for individual needs." The word universal refers to the need for universal (meaning all students) access to learning. Universal does not mean that there is a single solution that will work for all learners.

> *Universal Design for Learning is not a special education initiative. It is a philosophical shift in our thinking about teaching and learning that requires knowledge and cooperation at all organizational levels and among all subjects and fields. UDL supports the learning of all students of all ages, including students who are gifted and talented, English Language Learners (ELLs), and students who learn differently with or without disabilities.*

UDL serves as a framework that needs to be integrated into the design and implementation of curriculum, instruction, and assessment. UDL is not the same as differentiated instruction. Differentiated instruction is an effective strategy that focuses on the learner and making adjustments in instruction based upon the needs of the learner. On the other hand, UDL's focus is on eliminating learning barriers in curriculum, instruction and assessment from the

onset to maximize the number of students that will benefit. This greater access to flexibility in how curriculum, instruction, and assessment are delivered, and multiple options in the way students can respond to instruction for demonstrating their knowledge should reduce the need for singling out individual students to provide accommodations.

UDL is not just about providing access to content and assessment for students with disabilities, but for every student to have equal opportunity to a high-quality education that is presented in a variety of ways, engages them in activities that address their learning styles and preferences, and allows for multiple ways to demonstrate their knowledge and respond to instruction.

UDL's Relevance to Maryland

UDL is particularly relevant to Maryland's systems of education. In today's schools and institutions of higher education there are students who still struggle to meet standards, as well as those who need more rigorous instructional programming. Maryland's focus on preparing world-class students for college and career readiness means we need to continue to close achievement gaps and maximize learning for all students by altering the way we approach the design and delivery of curriculum, instruction, and assessment.

Recently, Maryland received a ranking of #1 in Education from *Education Week* magazine. This is commendable and represents the hard work and innovation to be found in schools statewide. But this does not mean that the status quo is acceptable. Achievement varies among schools and groups of students. A look at subgroup data shows the diversity to be found in Maryland classrooms as well as the need for improvements in learning among students with special needs and students from some demographic groups.

Diversity of Languages Spoken

There are more than 150 languages spoken throughout Maryland's classrooms. Spanish, French, Chinese, Vietnamese, and Korean are the top five home languages of Maryland's English Language Learner population (Maryland State Department of Education, 2010a).

Diversity of Races

According to the 2010 Maryland Report Card data (Maryland State

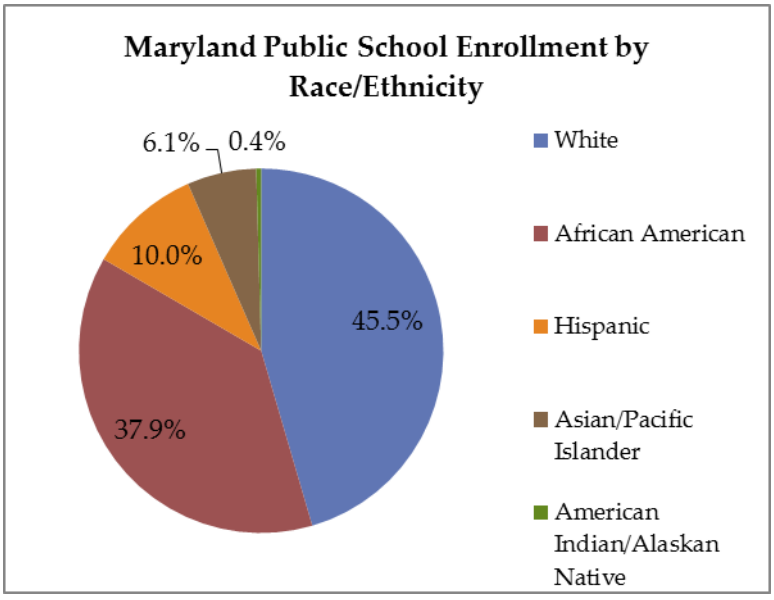


Figure 1. Source: 2010 Maryland State Report Card

Department of Education, 2010b), White students make up 45.5 percent of the State's public school enrollment, followed by African American students (37.9 percent); Hispanic (10.0 percent); Asian/Pacific Islander (6.1 percent); and American Indian/Alaskan Native (0.4 percent). See Figure 1 for a graphic display of enrollment by race.

Trend data show that Hispanic and Asian/Pacific Islander student enrollment is rising, African American student enrollment has plateaued, and White enrollment is slowly declining.

Diversity Among Students With Disabilities

There is a wide variety among the conditions of Maryland students receiving special education services. There is also variety among the educational settings, although the majority of students enrolled in school spend at least 80% of the school day in a regular education classroom. See figures 2 and 3 below.

Conditions of Students* Receiving Special Education Services as of October 29, 2010

	Total Special Education	Intellectual Disability	Deaf/ Hearing Impaired	Traumatic Brain Injury	Autism	Speech/ Language	Visually Impaired	Emotional Disability	Orthopedically Impaired	Other Health Impaired	Specific Learning Disability	Multiple Disabilities	Deaf/ Blind	Developmental Delay
Total State	102,985	5,302	1,174	266	8,829	20,006	358	7,600	352	15,881	32,568	3,249	18	6,902

*Students with disabilities, ages 3 to 21

Source: Maryland State Department of Education/Early Intervention Services, Census Data & Related Tables, Oct. 29, 2010
Figure 2

Students* Receiving Special Education Services by Location as of October 29, 2010

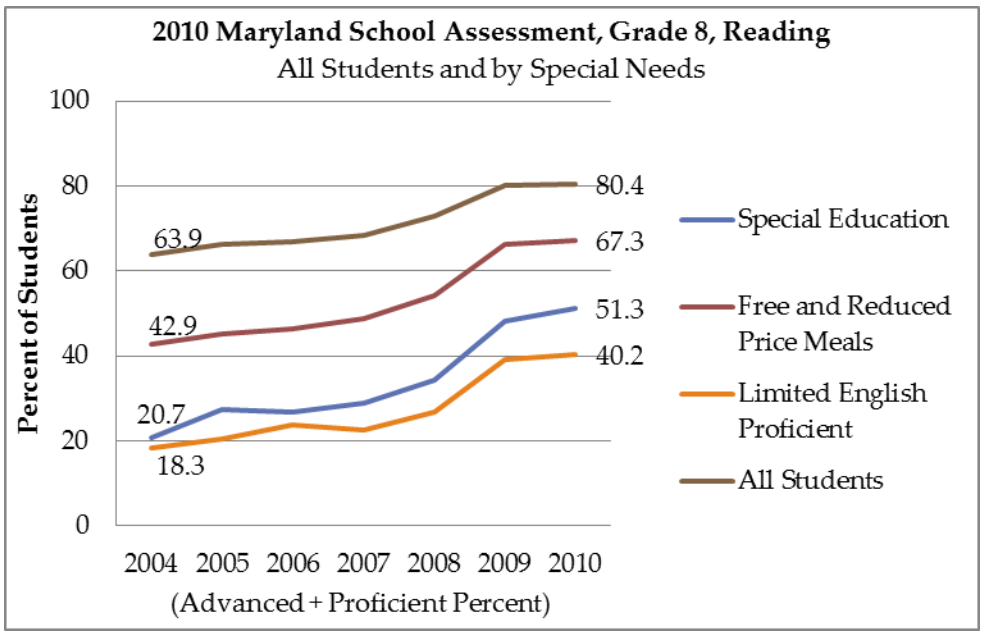
		School			Special School					
					Day		Residential		Other Location	
	Total Special Education	In the Regular Education Classroom 80% or More	In the Regular Education Classroom 40 to 79%	In the Regular Education Classroom Under 40%	Public	Private	Public	Private	Home	Hospital
Total State	90,615	59,934	10,264	12,770	2,559	3,466	10	161	228	26

*Students with disabilities, ages 6 to 21

Source: Maryland State Department of Education/Early Intervention Services, Census Data & Related Tables, Oct. 29, 2010
Figure 3

Achievement Gaps Persist

Maryland students have made progress in narrowing achievement gaps on the Maryland School Assessment since the test's inception in 2003. However, significant gaps remain. Consider the achievement in reading over time of students receiving special education services in grade eight (Figure 4). While progress is fairly steady within groups, achievement gaps have barely moved.



Source: 2010 Maryland State Report Card
Figure 4

Not Making Adequate Yearly Progress

The No Child Left Behind Act (NCLB) requires all schools, school systems and states to measure student achievement and to show that students are making Adequate Yearly Progress (AYP). According to the School Improvement in Maryland Web site, mdk12.org, "AYP is designed to measure the continuous improvement each year toward the NCLB goal of 100% proficiency in 2014. Maryland has set Annual Measurable Objectives that all students and the eight subgroups identified in NCLB also need to meet."

The most recent State report card on academic progress shows some groups of students are not making AYP at the State level. Figure 5, *State-level AYP Summary Status, Reading and Math Proficiency*, shows the following demographic subgroups did not make AYP in reading and math performance in 2010: African American, Hispanic, special education, free and reduced-price meals, and English Language Learners.

UDL is a framework for learning aligned with current brain research about learning that focuses on helping all students achieve greater progress and seeks to eliminate Maryland's achievement gaps among groups of students.

Born From Universal Design in Architecture

UDL is a natural outgrowth of the universal design movement in architecture and product development to create places and products physically accessible to as many people as possible. Universal design initially was associated with individuals with disabilities, but it quickly gained appreciation and use among the larger population. For example, ramps and curb cuts designed for individuals in wheelchairs are now invaluable to people pushing strollers, rolling suitcases, or pushing carts to transport heavy objects. Close-captioned television broadcasts are useful for anyone watching television in a noisy environment. Automatic doors open for all individuals.

State-level AYP Summary Status, Reading and Math Proficiency

	Percent Proficient	
	Reading	Math
All Students	Met	Met
American Indian/Alaskan Nat.	Met	Met
Asian/Pacific Islander	Met	Met
African American	**Not Met**	**Not Met**
White (non-Hispanic)	Met	Met
Hispanic	**Not Met**	Met
Free/Reduced Meals	**Not Met**	**Not Met**
Special Education	**Not Met**	**Not Met**
Limited English Proficient	**Not Met**	**Not Met**

Source: 2010 Maryland State Report Card
Figure 5

21st Century Teaching and Learning

Today, Universal Design concepts have been adapted to the field of education to move beyond just physical access to include cognitive or intellectual access to learning. UDL principles are derived from the learning sciences and are applied to the broader context of accessibility in learning by addressing instructional design for every student, not just students with disabilities. UDL helps schools and institutions of higher education address the more rigorous achievement expectations of the 21st century. Although UDL is not focused solely on technology, it has gained traction in education as more and better technologies have become available to support it.

As we have greater accountability and standards for learning, it is clear that we have to find more effective ways to deliver and assess instruction while actively engaging the learners. Designing curriculum and instruction for diverse students using the principles of UDL at the outset enhances the classroom environment and requires less retrofitting and adaptations by classroom teachers. Students are provided with scaffolds and supports within curriculum and instruction that build enduring understandings while engaging with standards-based materials.

Brain-Based Research

UDL helps educators to engage students in different ways and to present material in a variety of formats. It also allows students to demonstrate their knowledge in different formats. This flexibility and provisions of options to learners aligns with what current brain research tells us about how individuals learn.

Why is flexibility necessary?

Individuals bring different skills, needs, and interests to learning. Neuroscience shows that these differences are as unique as our fingerprints. There are three primary brain networks that come into play: Recognition Networks, Strategic Networks, and Affective Networks (CAST, 2011c).

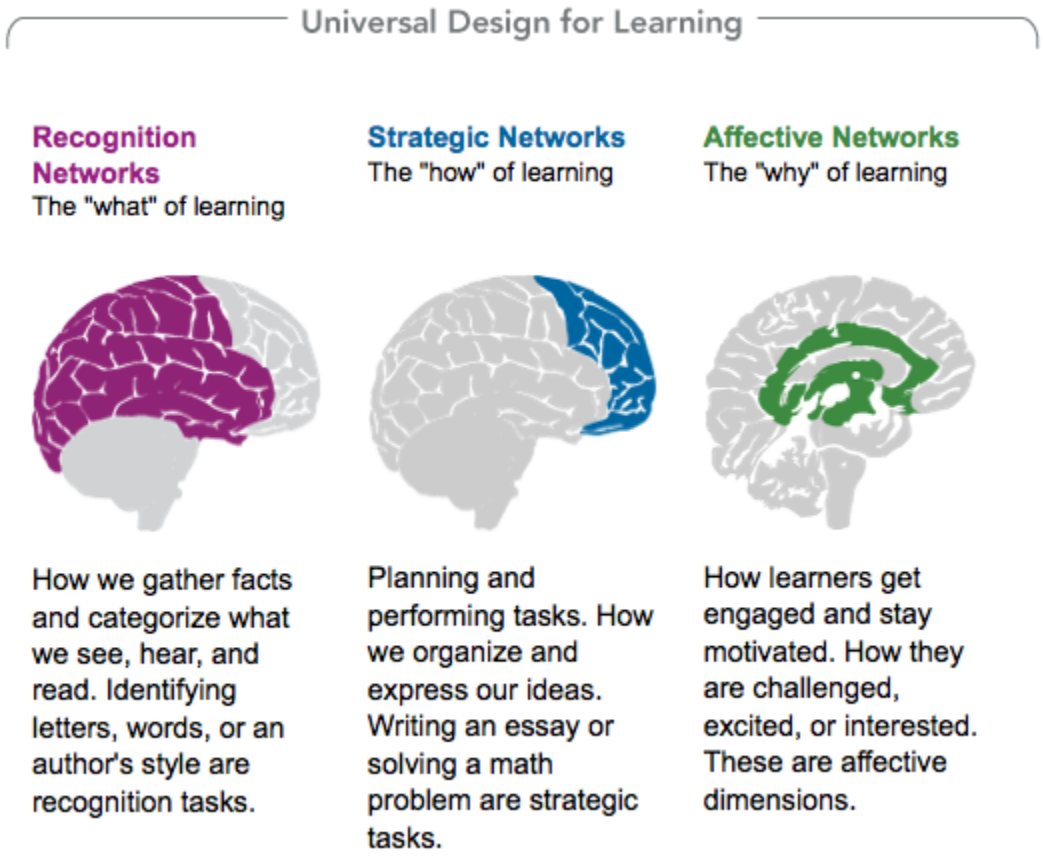


Figure 6. Image credit: Copyright CAST 2011. Used with Permission. All Rights Reserved.

According to CAST, the organization that has pioneered UDL, flexibility in curriculum, instruction and assessment is needed to account for the variations in students' recognition, strategic, and affective networks. UDL provides this flexibility when we provide multiple means of:

- Presentation: Presenting information and content in different ways

- Assessment: Differentiating the ways that students can express what they know
- Engagement: Stimulating interest and motivation for learning

Critical Elements of UDL

How do we recognize the UDL framework in action when we see it? The body of literature on UDL is growing, and experts are still coming to consensus on the critical elements that ensure effective implementation. Policymakers and educators can still move forward with using UDL principles, as there are a number of critical elements reflected in the existing UDL literature and among the lessons learned by schools, school systems, and states implementing it.

Critical Elements in Curriculum, Instruction and Assessment

- UDL guidelines developed by CAST need to be incorporated into the design and delivery of curriculum, instruction, and assessments. (The guidelines are available on the Web at www.udlcenter.org/aboutudl/udlguidelines.)
- Teachers need access to a broad range of materials in a variety of formats to ensure flexibility for offering a range of choices for students. Teachers need to use multiple means of presenting information, different ways of engaging students, and provide options for students to demonstrate competence.

Snapshot: UDL in Action

An article in Teacher Magazine *provided several profiles of classrooms using UDL. In one school, classroom teacher Pat Previte worked with CAST curriculum designer Patti Ganley to develop a digitized novel. She then allowed students, as they read chapters, to post comments on the class Web site. Another project was a "teaching book," whereby students could pick any topic, then, using Internet and print sources, put together their own books, becoming "experts" on their areas of study. According to Previte, "The goal was to have the students recognize different types of nonfiction structures, and then they take that and show they understand the text structures. I was definitely able to see gains that they had made."*

Snapshot adapted from "A Level Playing Field," by Lani Harac, Teacher Magazine, *October 2004.*

Key Components and Examples of UDL Implementation

In "Gaining Access to General Education: The Promise of Universal Design for Learning," Jimenez, Graf, and Rose (2007) propose the following seven key components of UDL.

1. Technology Infrastructure and Support—Example--Local school systems digitize materials and build collaboration between technology and educational specialists.
2. Administrative Support—Example-- Focused collaboration occurs across all departments to identify barriers to learning and new solutions to meet the needs of diverse learners.
3. Teacher Training Support—Example--School principals demonstrate buy-in by supporting job-embedded professional learning opportunities for training and support.

4. Redefined Roles for Special and General Education Teachers—Example--Teachers co-plan and work collaboratively to assist students with and without disabilities.
5. Collaborative Curriculum Planning—Example--Curriculum designers and classroom teachers work together to examine curricular objectives and gather new tools, materials and supports.
6. Parent and Community Involvement—Example--Parents are included in the discussion on UDL and identify ways to volunteer to support UDL within classrooms.
7. Creative Funding—Example--Local school systems, schools, and teachers develop and submit grant proposals supporting UDL practices.

Evidence of UDL in Classrooms ("Look Fors")

There are a number of indicators that reveal UDL principles and guidelines are being implemented in the classroom. These indicators, often referred to as "look fors," are things an individual can readily observe to confirm that UDL principles and guidelines are being applied.

This list is not exhaustive since there is more to UDL than what is observable (e.g., instructional planning, professional learning, readily available digital or other flexible materials, and varied assessment opportunities).

"UDL focuses educators on developing flexible curricula that provide students with multiple ways of accessing content, multiple means for expressing what they learn, and multiple pathways for engaging their interest and motivation. This, in turn, allows teachers a multidimensional view of their students as learners, and offers teachers unique insights into assessing students' knowledge, interest, and understanding."

Howard, 2004. Universal Design for Learning: Meeting the needs of all students. Pages 26-27.

- Access to tools and strategies that provide flexibility in presenting information, engaging students, and demonstrating knowledge.
- When teachers impart information, multiple methods are used that tap into diverse learning needs as a complement to verbal presentations and the use of written text.
- Flexibility for how students will demonstrate what they know (e.g., choices of process and product).
- Charts and Advance/Graphic Organizers providing various levels of scaffolding and support throughout the instructional process.

- Print–based materials enhanced with images to help teach concepts.
- Areas within the classroom designed for small group instruction.
- A variety of instructional methods are used to maximize student engagement.
- Meaningful participation in learning activities by every student in the class, regardless of ability level.

"I believe that "must-have" technologies include some kind of learning management system (LMS) to allow for an on-line community of learning for the students and classes. There are many excellent free options…So, cost need not be a factor, except for training on use. Having an LMS helps students (and teachers) keep assignments organized, get reminders, and check grades as well as have links to class notes, wikis and online content that their teacher can provide for access to multiple forms of learning."

From the Task Force Interview with Dr. Katharina Boser, President of Individual Differences in Learning and Chair of the Innovative Technology Committee for Autism Speaks

Technology That Supports UDL

The following are some signs or "look fors" for technology that supports UDL:

- Technology is used as a complement to classroom materials and tools.
- Regular access to technology in schools and in classrooms—for example, easy access to portable technology devices such as wireless netbook carts and software that supports a diverse body of student learners, Web tools that enhance instruction, and easily accessible ways to organize and share digital instructional materials across schools and local school systems.
- Interactive white boards used interactively by teachers and students, utilizing a range of software and Web-based tools to engage learners of all ability levels.
- Students demonstrate ease of use with the routines associated with technology tools.

UDL Is Not Just Technology

Although technology provides flexibility in meeting variations in student needs and learning styles, no-technology and low-technology strategies can be equally effective in implementing UDL principles and guidelines. (See the *No Technology, Mid Technology, and High Technology Options* sidebar on the next page.) No particular type of material or technology is essential for implementing UDL. The key is how materials and technology are selected, combined, and used for instruction in a manner consistent with UDL. Dr. George Van Horn is the Director for Special Education Services for Indiana's

Bartholomew Consolidated school system, which has grown from using UDL in one school to all schools. Dr. Van Horn uses the example of a paperback novel to explain a materials selection with UDL. Alone, the paperback novel does not support student choices or instructional flexibility. But that does not mean the book should not be used. The question is whether there are other materials that are available upfront (i.e., the teacher does not have to create them along the way) that can be used along with the book or as a print-based alternative to meet the needs and preferences of learners. A broad range of materials that provide choices and flexibility for students is what is most important and consistent with UDL principles and guidelines.

Assessment Considerations

It is essential for UDL to be incorporated into classroom, school system, and statewide assessments, as UDL provides a clearer picture of student achievement by ensuring that students have adequate and equitable means for demonstrating their knowledge and skills.

The following should be considered regarding UDL and assessments:

- Applying UDL principles from the outset to reduce the number of testing accommodations that are currently being used and that sometimes impact assessment validity (e.g., adult readers and scribing) by building the supports into the assessment design.
- Assessments should be flexible and allow for options that will measure the intended construct equitably for all students.

No Technology, Mid Technology, and High Technology Options

No Technology

- *Teachers read aloud to the class anything that is presented as text.*
- *Images are anchored to new vocabulary and key concepts.*
- *Small group instruction is provided with clearly defined roles, and choices within learning stations offer options for skill development and critical thinking.*

Mid Technology

- *Students have options for reading text (e.g., in print, audio files accompany print materials, e-readers).*
- *Written assignments or handouts are printed in two sizes: 8 x 11 and 11 x 18 to accommodate student writing needs.*

High Technology

- *Interactive white boards are combined with supplementary tools that provide text-to-speech, graphic organizers, Web-based resources, and video links.*
- *Netbooks are an option for all students who choose to use these tools to read for information and complete written assignments or handouts.*

Adapted from a presentation from the Montgomery County Public Schools, High Incidence Accessible Technology (HIAT) Team

- Assessments should measure relevant knowledge and filter out non-relevant obstacles.
- Test items should be reviewed using the lens of the UDL framework to improve accuracy and accessibility.

"People have tried to retrofit testing systems after the test is designed. One question I often ask is, 'How can we design tests to better meet the needs of more students?'"

From the Task Force Interview with Dr. Robert Mislevy, Professor of Measurement, Statistics, and Evaluation, University of Maryland

UDL in Context: Nationally and in Maryland

UDL in Federal Legislation

UDL is receiving national attention as a proactive approach to enhance the achievement of all students, including No Child Left Behind (NCLB) subgroup populations and advanced or gifted learners. "Both the Individuals with Disabilities Education Act (IDEA) and NCLB recognize the right of all learners to a high-quality, standards-based education. The laws preclude the development of separate educational agendas for students with disabilities and others with special needs. They also hold teachers, schools, school systems, and states responsible for ensuring that these students demonstrate progress according to the same standards" (CAST, 2011b).

However, neither NCLB nor IDEA at this time address one of the greatest student impediments to learning—the curriculum. Learning barriers that exist in many classrooms are the way in which the main components of the goals, materials, methods, and assessments are too rigidly applied and lack the flexibility needed to meet the needs of diverse learners, especially those with disabilities. This results in the need for teachers to create workarounds and modifications or requests for alternative placements for students that can be expensive, inefficient, and often ineffective for learning. UDL provides the framework that allows for the diversity of learner needs to be addressed at the point of curriculum development from the outset rather than the current retrofitting or afterthought approach while maintaining high expectations for all students.

No Child Left Behind (NCLB)

"Universal Design for Learning addresses the core principles of NCLB by supporting:

- Greater accountability by guiding the development of assessments that provide accurate, timely, and frequent means to measure progress and inform instruction for all students.
- Greater flexibility and choice for teachers, parents, and students by guiding the development of curricula that provide high expectations for every student and meaningful choices to meet and sustain those high expectations.
- Greater use of evidence-based practices by guiding the design of high-quality curriculum that include research-based techniques for all students, including those with disabilities" (CAST, 2011b).

In addition, UDL appears in a number of Federal legislative and policy documents.

The Individuals with Disabilities Education Act (IDEA) 2004

IDEA is focused on improving outcomes for children and youth with disabilities. Some of the provisions included below within IDEA integrate the use of UDL as a means of supporting the core principles of IDEA:

34CFR Sec. 300.704(b)(4)(v)
"To support the use of technology, including technology with universal design principles and assistive technology devices, to maximize accessibility to the general education curriculum for children with disabilities."

34CFR Sec. 612(a)(16)(E)
"Universal design.--The State educational agency (or, in the case of a districtwide assessment, the local educational agency) shall, to the extent feasible, use universal design principles in developing and administering any assessments under this paragraph."

34CFR Sec. 674(b)(2)(B)
"Supporting research, development, and dissemination of technology with universal design features, so that the technology is accessible to the broadest range of individuals with disabilities without further modification or adaptation."

Higher Education Opportunity Act (HEOA)

The following information included in the HEOA is of key concern to the higher education systems in Maryland as it addresses the needs of the diverse populations of students who are currently pursuing higher education. By reducing barriers to learning for a wider range of learners, higher education can increase student opportunities for program completion and success for their graduates as 21st century learners.

UDL appears in numerous provisions and is defined in HEOA Section 103(a)(24):

UNIVERSAL DESIGN FOR LEARNING.--The term `universal design for learning' means a scientifically valid framework for guiding educational practice that—

``(A) provides flexibility in the ways information is presented, in the ways students respond or demonstrate knowledge and skills, and in the ways students are engaged; and

``(B) reduces barriers in instruction, provides appropriate accommodations, supports, and challenges, and maintains high achievement expectations for all students, including students with disabilities and students who are limited English proficient."

U.S. Department of Education's National Education Technology Plan

In the announcement letter, Secretary Duncan said the following about the Plan (U.S. Department of Education, 2010):

"It calls for using state-of-the art technology and Universal Design for Learning (UDL) concepts to enable, motivate and inspire all students to achieve, regardless of background, languages or disabilities."

Additional Inclusions of UDL Nationally

- The Common Core State Standards developed by the National Governors Association and the Council of Chief State School Officers
- The Race to the Top Assessment Programs Criteria
- LEARN Act (literacy) bills in House and Senate
- U.S. Department of Education's guidance on recommended use of American Reinvestment and Recovery Act funds
- U.S. Department of Education's Blueprint for Reform: Reauthorization of the Elementary and Secondary Education Act

National Organizations Embracing or Endorsing UDL

There are more than forty (40) national general education and disability groups that comprise the National UDL Task Force to promote UDL in federal legislation and policy. See www.udl4allstudents.com for a full list of members and information about the work of the National UDL Task Force.

The groups comprising the National UDL Task Force, which is chaired by the National Down Syndrome Society, include the NEA (National Education Association), the AFT (American Federation of Teachers), the National School Boards Association, and the National Association of State Boards of Education. There are also organizations representing institutions of higher education.

Education leadership and policymaking organizations are also represented, including the Council of Chief State School Officers, National Association of State Directors of Special Education, the American Association of School Administrators and the National Association of Secondary School Principals. In addition, there are national organizations for special education and gifted education, including the Council for Exceptional Children, as well as the National PTA (Parent Teacher Association) and the American Institutes for Research, who are supporting UDL.

UDL in Other States

UDL is building momentum nationwide as a framework for addressing the diverse learning needs of all students. There are currently nine (9) states that have initiatives underway to incorporate UDL into their school systems and schools. These states include Indiana, Iowa, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota and New Jersey.

Snapshot: UDL in Michigan

Michigan began its initiative in 2000 when stakeholders from around the state met to create clear exemplars of UDL and how to implement it, provide data behind the framework of UDL, and establish a clear definition of UDL. The stakeholders that were involved in this work included Michigan's State Board of Education, general and special education professionals, and parents.

How Michigan Has Implemented UDL

- *Aligned its definition of curriculum to CAST's definition: goals, methods, materials and assessment. The curriculum contains clear goals, and is flexible in the presentation and demonstration of knowledge.*
- *Identified critical elements of UDL.*
- *Established a small pilot program to create exemplars. UDL has been defined in ways that are practical, but yield the paradigm shift that the UDL framework outlines.*
- *Emphasized pedagogical skills in UDL implementation rather than technology.*

UDL in Maryland

Maryland Supporters of UDL

UDL has a number of supporters in Maryland. The Maryland Down syndrome Advocacy Coalition (MDAC) was instrumental in getting this Task Force established through legislation with the support of more than thirty eight (38) local and statewide education stakeholders (listed at www.udl4maryland.com). Many Maryland organizations submitted written testimony in support of the Task Force bill, including the Maryland State Department of Education, Governor's Office for Children, Prince George's County Public Schools, Anne Arundel County Public Schools, the Arc of Maryland, Maryland PTA and the Maryland Council for Exceptional Children. Local school systems such as Montgomery County and Prince George's County are working toward implementing UDL.

Maryland State Department of Education Promotes UDL

The Maryland State Department of Education has already embraced the principles of UDL and had begun disseminating information about UDL principles and guidelines prior to the establishment of the Task Force. A full day workshop to develop awareness

of UDL and its applications in the community, organizations/school systems, schools, and institutions of higher education was held for a broad group of stakeholders in March 2010. Participants comprised representatives from local boards of education, school system and school-based leaders across disciplines, and included special education and institutions of higher education. In addition, the following ongoing initiatives have been promoting the use of UDL across Maryland.

Maryland Co-Teaching Network

The Maryland State Department of Education, Division of Special Education/Early Intervention Services (DSE/EIS) and its partner the Johns Hopkins University Center for Technology in Education (JHU/CTE) work collaboratively with the Breakthrough Center—Maryland's Statewide System of Support—to partner with local school systems, schools, and institutions of higher education to guide and support effective instructional practices in co-teaching, including UDL. Co-teaching is an instructional delivery model in which a collaborative partnership exists between a generalist and a specialist who have shared accountability and ownership for planning and delivering instruction and assessment to all students within a classroom environment. Most frequently, this provides the opportunity for a general education and a special education teacher to work together to teach a classroom of diverse students that includes students with disabilities which supports the education of students in the least restrictive learning environment possible. This collaboration enables the teachers to include greater flexibility in the instructional methods and materials used to meet the needs of the diverse learners in their classroom. There are currently nine (9) local school systems and thirty (30) schools

Snapshot: Montgomery County Public Schools UDL Project

Montgomery County Public Schools is in the second year of a three-year UDL implementation project in selected elementary and middle schools. The project first focused on building instructional leadership teams in the schools, rather than attempting an immediate school-wide effort. Voluntary teams were comprised of no more than twelve (12) staff, in no more than seven (7) classrooms, and included general education staff, special education staff, specialists, and paraprofessionals. Participants, including principals, were asked for a high level of commitment to the project.

In the first semester, team members learned about UDL and increasingly implemented UDL in their classrooms. In the second semester of the project, the focus was on outreach through professional development and coaching to school staff, and on case studies targeting struggling learners.

The first year of implementation there were limited resources to support the Project. The second year, the school system received American Reinvestment and Recovery Act (ARRA) funds which allowed a higher level of support. During the upcoming year, the school system plans to scale back to a modest level of support to include four more schools and to sustain the implementation that has been achieved. Although the project is in its second year, many lessons have been learned, including the need for job-embedded coaching and mentoring. Training alone is not sufficient. Staff must have time for planning, communication, and access to readily adjustable digital materials.

participating in the Maryland Co-Teaching Network.

In addition, the DSE/EIS provides funding and collaboratively supports the Maryland Assistive Technology Network established by JHU/CTE. This partnership combines the leadership and policy support of the MSDE with the research and teaching resources of the JHU to address equitable access to the general education curriculum by all students.

Principal's Academy

The Maryland State Department of Education conducts an annual Principal's Academy to help selected Maryland principals understand the alignment of curriculum, instruction, and assessment to boost student achievement for all students. As part of the Academy, principals are learning how UDL can help their schools meet the needs of diverse learners.

"Teachers must experience and practice UDL personally. Give them opportunities for trials and role playing with constructive feedback."

From the Task Force Interview with Dr. David Wizer, Chair, Department of Educational Technology and Literacy, Towson University

Governor's Academy

In the past two years, the Division of Instruction's Office of Social Studies used UDL in the design and implementation of the summer Governor's Academies for Government teachers. The Academy's teachers modeled the implementation of UDL principles, and participants used a UDL lesson plan format in their follow-up Academy assignments.

Gifted and Talented

The Office of Gifted and Talented Education (GT) introduced the UDL framework to local GT program coordinators at a State briefing. Participants identified potential barriers for GT students, and then brainstormed methods of providing optimal challenge for gifted students in the three UDL areas: representation, expression, and engagement.

New UDL Initiatives

The Maryland State Department of Education is currently implementing strategies and activities to promote the application of UDL principles and guidelines. The Department is providing additional training in UDL for Division of Instruction and Career and Technology Education staff, applying the UDL framework in the Educator Effectiveness Academies (summer 2011), and integrating the UDL framework in the new Maryland online instructional toolkit. This online toolkit will support teachers in the use of the new Maryland Common Core State Curriculum framework in the areas of English language arts, mathematics, and STEM (science, technology, engineering, mathematics).

Assessment

Maryland incorporates UDL into assessment through content reviews, bias and sensitivity reviews, statistical analysis reviews, and other reviews which provide an empirical check on the fairness of items. Maryland is also exploring the use of cognitive labs, which are methods of collecting data to better understand how students approach test items and what aspects of the items were particularly challenging for students. The ultimate purpose of the assessment reviews is to remove barriers so students can equitably demonstrate their knowledge and skills.

Through an Enhanced Assessment Grant from the United States Department of Education (USDE), Maryland has partnered with eight other states to develop standards for computer based accessibility and interoperability standards. These standards are known as the Accessible Portable Item Profile (APIP). The goals of APIP are to develop and exchange test items, the delivery of which can be tailored to assess and measure the intended construct for each student.

"Only by creating fair and accurate tests that allow students to demonstrate their learning progress regardless of how they learn can we ensure that we are holding educational systems accountable for all students, including those with disabilities. Furthermore, and more importantly, fair and accurate testing is essential if we are to use assessment results to help shape subsequent instruction for individual students. Universal design is one means for accomplishing this."

Dolan & Hall, 2001. Universal Design for Learning: Implications for large-scale assessment. Page 7.

UDL in Local School Systems

There is variation in local school systems' implementation of UDL. Some are just starting to explore the tenets of UDL while others have undertaken formal efforts to implement UDL in classrooms and draw lessons from that implementation in order to replicate it in other schools. Montgomery County Public Schools is one school system that has undertaken a significant UDL implementation effort. (See the sidebar entitled "Snapshot: Montgomery County Public Schools UDL Project.") Because school systems are at different starting points in their understanding and application of UDL, no one statewide plan or effort would fit every school system's needs. Local school systems

must customize their efforts to their current status and formulate their own improvement plans for integrating UDL into organizational and instructional practices.

UDL in Institutions of Higher Education

The Higher Education Opportunity Act (HEOA) of 2008 established the statutory definition for Universal Design for Learning. This definition incorporates the three principles of UDL (representation, expression, and engagement) and emphasizes reducing barriers with appropriate supports and challenges built into instruction. The HEOA also states that pre-service teacher education programs should design instruction that models the UDL principles in order to better prepare future educators for working with diverse learners. Some institutions of higher education have been using and teaching UDL principles which they call UDI, Universally Designed Instruction, at the postsecondary level at both the undergraduate and graduate levels. This has reduced the need for special academic accommodations for most students with disabilities since learning opportunities are already both physically and cognitively accessible through a variety of means to the learners. Although other institutions of higher education (IHEs) may be incorporating UDL into their programs and practices, we offer the following two examples of IHE implementation based upon their current partnerships with the MSDE.

Towson University

The College and Career Readiness Support Project, led by administrators and teachers in Howard County in partnership with nine other counties and Baltimore City, is a federal Title II-D *Enhancing Education through Technology* grant that will provide high-quality professional development to help teachers become comfortable with the use of emerging technologies in their classrooms. Howard County and its partners are creating four online courses for teachers: *Enhancing Teaching and Learning through the Use of Technology* (with UDL principles built in) in Biology, Algebra, Government and English. A separate professional development module on *Universal Design for Learning* is also in development as well as online instructional supports for Algebra and English IV (based on the Common Core State Standards). Staff from Towson University are collaborating with the MSDE and Howard County Public Schools on this project.

In addition, Towson University reports that, for quite some time, its College of Education courses have included information regarding UDL. In recent semesters, faculty members in the Instructional Technology and Special Education Departments have collaborated to carefully redesign two courses using the UDL principles. The group was inspired by the 2010 National Education Technology Plan (NETP), which presents UDL as a way to design and implement accessible curriculum and assessments in order to meet the needs of 21st century learners. The plan promotes the integration of

UDL and educational technology at the design stage and specifically addresses pre-service teacher education, recommending that "pre-service teachers should have experiences powered by technology that close the gap between students' and educators' fluencies with technology and promote and enable technology use in ways that improve learning, assessment and instructional practices" (p. 64). All students seeking teacher certification are required to participate in these courses, which is quite significant since Towson University is the largest producer of teacher educators in the state of Maryland.

In addition, Towson University has purchased the foundational text, *A Practical Reader in Universal for Design for Learning*, for all department chairs and numerous faculty members. The College of Education is also hosting a two-day professional development opportunity in March 2011. Dr. Todd Rose, research scientist at the Center for Applied Special Technology (CAST), and faculty member at the Harvard Graduate School of Education, will be delivering a presentation. Dr. Rose plans to discuss what modern neuroscience tells us about the origins of variability in learning, and what this means for the way that we design learning environments within the context of Universal Design for Learning. As part of the professional development opportunity, College of Education faculty members are invited to attend a series of workshops designed to assist educators in applying the UDL principles to instruction and course design. Follow up sessions will occur in subsequent semesters in order to provide ongoing professional development for faculty and Professional Development School supervisors.

"Most faculty have positive, caring attitudes for students with disabilities. The problem comes when it takes too much time for them. But if you are planning from the outset for anyone who might walk through the door, it doesn't make a difference, especially when considering the time it takes to prepare the one-to-one accommodations that are required."

From the Task Force Interview with Dr. Jeanne Higbee, Professor, Postsecondary Teaching and Learning, University of Minnesota, Minneapolis

Goucher College

In collaboration with the Maryland State Department of Education, Division of Special Education/Early Intervention Services (DSE/EIS) Goucher College, Graduate Programs

in Education, is developing online courses that support the work of the Co-Teaching Network as well as address the needs of educators working with students with disabilities and other diverse learners in classrooms. These courses are developed with short modules that will be available on the DSE/EIS Web portal Maryland Learning Links. This portal will be launched in the Fall of 2011 and will address specific professional development learning needs of educators in today's diverse classrooms. UDL principles have been incorporated into the course design as well as including specific UDL modules to develop an understanding of UDL and its implications for the development of goals, instruction, methods, materials and assessment.

Alignment with Maryland's Third Wave of Reform

Race to the Top

Maryland has already begun its third wave of reform and has been fortunate to have been awarded a federal Race to the Top (RTTT) grant in the amount of $250 million over four years to support reform efforts. The RTTT program is aimed at boosting student achievement, reducing gaps in achievement among student subgroups, turning around struggling schools, and improving the teaching profession. The application of UDL principles and guidelines will be critical if Maryland is to achieve these goals for all of the diverse students and classrooms found across the state.

As part of the third wave of reform and RTTT efforts, Maryland will be redesigning its curriculum framework, instructional toolkit and assessments. This provides a perfect opportunity for UDL to be built into curriculum and assessment statewide from the outset rather than attempting an expensive retrofit in the future.

Maryland Education Technology Plan

UDL supports the use of technology by teachers and students because of its inherent flexibility. This technology emphasis is in alignment with Maryland's Education Technology Plan, as well as Maryland's Teacher Technology Standards and Student Technology Standards. UDL supports Maryland's goal of ensuring the attainment of 21st century technology skills among students and teachers.

Maryland Education That Is Multicultural (ETM)

The Maryland State Department of Education implements a State Regulation that requires all local school systems to infuse Education That Is Multicultural (ETM) into instruction, curriculum, staff development, instructional resources, and school climate. It also requires the Maryland State Department of Education to incorporate multicultural education into its programs, publications, and assessments.

UDL supports ETM in Maryland. Using multiple means of representation, expression and engagement respects cultural experiences and perspectives as part of instruction.

UDL emphasizes the need to provide background knowledge and context, which is especially important for students from other cultures. It is important to look for and address cultural barriers in instructional materials and teaching methods.

Can UDL Improve Student Achievement in Maryland?

UDL Effectiveness

There are a number of benefits to using UDL that make it an effective framework for curriculum design and implementation in prekindergarten through higher education systems in Maryland.

UDL's Frontloading into Instruction Translates to Less Teacher Effort and More Students Benefited

UDL instructional materials and strategies for instruction are "frontloaded" rather than retrofitted. This means the strategies are built into the curriculum, instruction, and assessments instead of requiring the teacher to make many adjustments for individual students after the fact. This makes UDL more efficient in the long run, because it reduces teacher time spent creating retrofits and benefits more students from the outset. UDL is also more acceptable to students because instead of relying primarily on adjustments that single out students, UDL offers flexibility and choice to all students. To accomplish this, teachers and students must develop new skills and establish routines that allow choices of flexible materials and flexible tools.

"UDL is not about needing more money. It is about changing beliefs and practices, which requires professional development."

From the Task Force Interview with Dr. George Van Horn, District Director of Special Education Services, Bartholomew Consolidated School Corporation, Indiana

UDL Encourages Efficient Use of Funds

UDL also results in a more efficient use of funds when instructional materials and technologies are selected to create a range of options that work for all students instead of focusing on purchasing for subgroups of students.

UDL Provides More Students Access to the General Education Curriculum

UDL improves access to the curriculum for all students and can help students with disabilities access learning in the general education setting. With appropriate instructional materials, technology, and training, teachers can provide lessons that are flexible and benefit a variety of diverse learners, including those with disabilities.

UDL Creates a Positive Learning Environment

Teachers report that when UDL principles and guidelines are implemented there is a positive impact on student behavior and learning. In addition, students produce better work products when a UDL approach to instruction is applied. UDL implementation creates a more inclusive environment in which students feel safe to disclose and adapt to their disabilities, giftedness, and learning or language differences. In higher education, students are able to identify barriers to learning course content, can make these barriers known to faculty, and seek alternative learning options.

"In this study, student participants reported high rates of perceived engagement with UDL-based activities as compared with their perceptions of their other academic classes. This finding, warranting additional research and replication, suggests that UDL can create learning environments that students deem to be engaging and enjoyable."

Kortering, McClannon, & Braziel, 2008. Universal Design for Learning: A look at what algebra and biology students with and without high incidence conditions are saying. Page 360.

UDL Can Reduce the Need for Accommodations and Modifications

While there will always be a need for assistive technology or other accommodations to support the unique needs of some students, UDL has the potential to reduce the need for retrofitted accommodations and modifications for students with Individualized Education Programs (IEPs) and 504 Plans.

"A possible implication of this study is that universally designed concepts might save teachers an extensive amount of time by creating modified lesson plans rather than changing them after the fact. By designing lessons before the fact, considering all students using the components of UDL, teachers have a better opportunity to teach a curriculum that actively involves all students."

Spooner, Baker, Harris, Ahlgrim-Delzell, & Browder, 2007. Effects of Training in Universal Design for Learning on Lesson Plan Development. Page 114.

Challenges to Implementing UDL

Challenges

Despite the promise and power of UDL as a framework for advancing Maryland learners of all ages and

abilities, there are challenges. The main challenge is that UDL requires a paradigm shift in lesson planning as well as in the development of instructional materials and teaching and learning opportunities. Some educators and stakeholders may not see the need for this shift because there is a comfort level of, "I've always done it this way." Also, resources and time in our schools are already perceived as overcommitted. Educators and stakeholders may be resistant to support a broader educational framework that embraces UDL, especially if it is perceived as "one more thing" or as a special education initiative that will only benefit certain groups of students.

"Right now, we believe that universities place too much emphasis on the disabilities in students, not enough on the disabilities in the learning environment… Universal design presents other options and perspectives on access that will ultimately benefit all students, disabled and nondisabled."

Rose, Harbour, Johnston, Daley, & Abarbanell, 2006. Universal Design for Learning in Postsecondary Education: Reflections on principles and their application. Page 150.

Misperceptions

In addition to challenges, supporters of UDL in Maryland will need to address some misperceptions about UDL that could negatively impact implementation. For example, there are some who believe that access and excellence are mutually exclusive—that we are talking about "watering down" education when the reality is improved learning through greater engagement, flexibility and choice. Some people also fear that UDL will undermine student responsibility for learning or lower standards, when the reality is that UDL promotes greater student responsibility for learning and greater access to the curriculum. There is also the misperception that UDL takes more time. When curriculum is designed to provide teachers with access to a repository of readily available, digital materials that support core content, and when there are centralized ways for teachers to share teacher-made, teacher-proven materials, this diminishes the need for teachers to "recreate the wheel." Another misperception is that UDL is expensive. Although professional development and the purchase of technology have fiscal implications, there are plenty of no-technology or low-technology ways to implement UDL, and existing professional development opportunities in which UDL principles and guidelines can be integrated. Schools and systems can begin

implementing UDL by using existing and future technology funds more strategically and integrating UDL into ongoing professional development plans.

Perhaps the most common misperception is that UDL is just for learners with disabilities. It is not uncommon for teachers, including higher education faculty, to underestimate the degree to which non-special education students have different skills and abilities. They mistakenly categorize students as those who require special education apart from typical students without realizing that all students benefit from incorporation of UDL in the classroom.

How UDL Implementation Can Address Challenges and Misperceptions

A strategic, broad reaching awareness campaign is essential to set the stage for UDL implementation. Stakeholders must understand that UDL supports all students, including students who are gifted and talented, English Language Learners (ELLs), students with physical, cognitive, and sensory disabilities, learners who may be a part of more than one of these types of learners, and students without disabilities. Stakeholders must understand and support the implementation of UDL principles and guidelines before Maryland initiates any regulatory efforts to require UDL implementation. Otherwise, as experienced in other states, there is the risk of resentment and pushback by stakeholders.

> ***"UDL focuses educators on developing flexible curricula that provide students with multiple ways of accessing content, multiple means for expressing what they learn, and multiple pathways for engaging their interest and motivation. This, in turn, allows teachers a multidimensional view of their students as learners, and offers teachers unique insights into assessing students' knowledge, interest, and understanding."***
>
> *Howard, 2004. Universal Design for Learning: Meeting the needs of all students. Page 26-27.*

Another critical piece of UDL implementation is increased communication and collaboration among departments. The responsibility for the implementation of UDL does not rest with teachers alone. Focused collaboration is essential to align UDL efforts both organizationally and instructionally. Technology, curriculum and instruction, and professional development efforts must be coordinated to effectively implement UDL principles and guidelines in schools. For example, efforts to move toward more flexible options that benefit all students will require coordination to ensure a range of tools, instructional materials and strategies are readily available to teachers and students.

Potential Impact of UDL Implementation

Combined with *A Tiered Instructional Approach to Support Achievement for All Students: Maryland's Response to Intervention Framework* (June 2008), a model of academic intervention for students not achieving standards, UDL has the potential to impact the following:

"Research studies show that graphic organizers are effective enhancements for students with and without learning disabilities…Thus, smartly implemented, graphic organizers have the potential to positively impact learning by offering teachers a means to improve all students' comprehension and vocabulary knowledge."

Strangman & Meyer, 2003. Graphic Organizers and Implications for Universal Design for Learning: Curriculum enhancement report. Page 10.

- numbers of students requiring special education services,
- number of students dropping out of school,
- number of gifted and talented students who are not engaged in current learning activities,
- number of accommodations needed during instruction and assessment, and
- the amount of time teachers spend individualizing instruction.

UDL also has the potential to provide more students direct access to the general curriculum and impact achievement for all students.

"Arguments for UDL effectiveness are intuitive and social justice oriented. All students have the right to access the curriculum and therefore must be able to access the materials and instruction. It is common sense to conclude that students will have improved outcomes if they have access to the tools of learning."

From the Task Force Interview with Chuck Hitchcock, Chief Officer, Policy and Technology, CAST and Project Director, National AIM Center

UDL Feasibility

Part of the Task Force charge was to examine the feasibility of implementing UDL in the educational systems of Maryland. Research articles and interviews with experts in the field were conducted by Task Force members to confirm the feasibility of implementing UDL in Maryland. However, there was discussion about cautionary measures regarding moving forward too fast prior to developing stakeholder understanding and agreement. A focused plan to strategically develop awareness and understanding of UDL among stakeholders is essential. In addition, strategies for addressing the previously mentioned challenges and misperceptions regarding UDL implementation need to be developed.

Paradigm Shift in Professional Development and Stakeholder Engagement

UDL requires a paradigm shift in teaching, learning, and assessment. Curriculum developers, assessment designers, and teachers will need to learn a different way of viewing student learning and the methods of engagement, presentation, and assessment used in the classroom. With high-quality professional development, job-embedded professional learning, and stakeholder engagement, this paradigm shift is achievable.

There is a wealth of free, high-quality online resources in support of UDL that can help facilitate this paradigm shift. These resources include professional development modules, teacher toolkits, planning tools, technology tools, instructional tools, lesson plans, and more. Three comprehensive national Web sites: www.cast.org, www.udlcenter.org, and www.aim.cast.org are also available. See Appendix B for more Web resources.

No-technology and Low-technology UDL Strategies

Although assistive technology and technology in general are useful, UDL is not just about the use of technology. As discussed earlier, UDL solutions can be simple and no-technology and low-technology supported. Also, schools and systems can review the allocation of existing technology within schools and classrooms to ensure that it supports student learning as effectively and efficiently as possible.

"You build stakeholder buy-in by keeping all stakeholders informed on UDL on a frequent basis. Stakeholders should be shown classrooms where UDL has been implemented, the efficiency of the design, its diversity, and, most of all, its value and contribution to the academic progress for all students. Stakeholders should be at the table whenever implementation of UDL is discussed."

From the Task Force Interview with William McGrath, Instructional Specialist, Montgomery County Public Schools

Improvements in Consumer Technology Will Bring More Affordable Technology to Classrooms

Technology is an ever changing landscape. Mainstream and specialized tools continue to be developed to meet the varied needs of students with disabilities. Many assistive technologies can be combined with general consumer products to provide more options for all students. More often, consumer technology is easier to use, portable, smaller, and

more affordable than assistive technology. For example, tablet technology devices and Smartphones, along with a growing number of software and Web-based applications, contain accessibility features that may be beneficial to all students. School systems should be strategic in their technology purchases to ensure access for the greatest number of users. With the need for computer access to participate in the new Common Core State Curriculum assessments, considerations for allocating the technology to classrooms for ongoing instructional purposes becomes more critical to provide access to learning and to ensure students are prepared for online testing. The more opportunities are made for integrating technology into classroom instruction, the further the enhancement of UDL implementation.

Textbooks and other instructional materials are increasingly available in digital versions. However, this does not mean they are accessible to all students. Statewide efforts need to be made to work with publishers to create a market-model to ensure that a range of flexible materials are available to all students, not just eligible students.

UDL is Already Happening

Maryland has already begun moving toward a UDL approach in the ongoing development of the Common Core State Curriculum framework, instructional toolkit and assessments. As a result of implementing UDL, a number of local school systems, schools, and institutions of higher education have recognized the power and promise of UDL in the improvement of teaching, learning and its impact on narrowing achievement gaps. The Task Force has reviewed the UDL literature and interviewed a number of experts and practitioners in the field. The recommendations in the following section of this report represent the Task Force's best thinking on how to expand UDL implementation in Maryland.

"UDL should be embedded in all curriculum policy… It should be made teacher friendly, and all new technology, materials, and texts should be purchased with an eye for UDL."

From the Task Force Interview with Shirley Brandman, Montgomery County School Board member

Task Force Recommendations

Introduction

The Task Force members reviewed research, interviewed national experts regarding the application of UDL principles, and experienced the use of UDL principles within Task Force meetings. As a result of these experiences, the Task Force members reached consensus that the application of UDL principles should be promoted throughout Maryland education systems to ensure all learners have maximized opportunities to access and equitably benefit from teaching and learning activities.

There was also consensus that at this time, it would be premature to promulgate proposed regulations. However, Task Force members recommended the development of a strategic and systematic plan for building stakeholder awareness and capacity at the State, local, and institutions of higher education levels prior to mandating policies through regulation. The Task Force members have made recommendations for suggested guidance or steps that can be taken by the State Board of Education, the Maryland State Department of Education, institutions of higher education, local school systems, and schools to lay the foundations for increased implementation of the application of UDL principles in the coming years.

Recommendations for the Maryland State Board of Education

1. **Approve a UDL policy that:**
    - Recognizes the benefits of UDL for all learners in all areas—general education, gifted and talented, English Language Learners, and special education.
    - Recognizes that UDL should be used during curriculum and assessment development and during the review and selection process for textbooks, instructional materials, and technology. (In other words, UDL should not be an after-the-fact modification, but a driving force during the planning process.)
    - Encourages the MSDE to include UDL where appropriate in requests for proposals (RFPs), grant criteria, and program approval criteria.
    - Encourages the MSDE to include UDL in its strategic plan.
    - Encourages local school systems to include UDL in their strategic and professional development plans.
    - Encourages MSDE to collaborate with local school systems to support the full integration of UDL into organizational and instructional components of the local school system.

2. **Request a steering committee comprised of preK-16 education stakeholders, including parents, to support the integration of UDL in the areas of instructional materials and technology, professional development, and curriculum and instruction.**
    - Instructional Materials and Technology:
        - Assemble and share with school systems and schools a list of free or low-cost, low-technology resources that incorporate UDL.
        - Assemble and share with school systems and schools a list of Web resources that incorporate UDL.
        - Draft criteria to help guide local school systems in selecting and developing instructional materials and technology that incorporate UDL.
        - Assemble and share with school systems and schools strategies that utilize available technology tools.
        - Explore the development of local school system consortiums to better leverage funds by collaboratively purchasing accessible instructional materials for all students, not just those with disabilities.
        - Examine the allocation of technology devices per classroom needed to provide flexible options for instruction and learning.
        - Examine the use of mobile technology and applications.

    - Professional Development:
        - Assemble and share with school systems and schools strategies that support professional learning teams to support the implementation of UDL.
        - Once the implementation of UDL is integrated into Master Plan criteria as appropriate, MSDE should compile and share information from the local school system Master Plans regarding school system and school progress in implementing and monitoring UDL principles and guidelines. The information should include clearly demonstrated coordinated efforts across departments (e. g. technology, curriculum and instruction, special education, etc.) as described by the Center for Applied Special Technology (CAST).

    - Curriculum and Instruction: Assemble and share strategies with school system curriculum designers to support the creation of curriculum and lessons using UDL principles and guidelines from the onset.

    - Institutions of Higher Education: Establish how implementation impacts institutions of higher education and what role they can play in advancing UDL implementation.

Recommendations for the Maryland State Department of Education

Many of the principles of UDL can be readily adopted for little or no cost. However, as the need for greater technology infrastructure and support personnel increases over time with the use of technology or Web-based resources as an integral part of instructional practice, the fiscal impact of implementing systemic UDL policies would need to be assessed. The demands for greater use of technology are not only related to the implementation of UDL principles, but as a necessity for preparing all students in the 21st century.

As a result of implementing the Common Core State Standards, the national assessments currently under development will be administered online. This may already promote the need for more infrastructure to support the ongoing use of technology. The need for technology devices in classrooms should be balanced against the need for computer labs to conduct online assessments in order to provide flexible options for learning in classrooms using learning stations and small groups.

Recommendations for the Maryland State Department of Education

1. **Define and describe the critical elements of UDL based on the principles and guidelines from the Center for Applied Special Technology (CAST).**

2. **Create and implement a plan for educating stakeholders about UDL and its benefits for all students**, including students who are gifted and talented, English language learners, students with physical, cognitive, and/or sensory disabilities, students with emotional or language/learning disabilities, learners who may be a part of more than one of these types of learners, and students without disabilities. Stakeholder groups should include parents, teachers, administrators, representatives from the business community, all local school system professionals, and higher education faculties, staffs, and administrators.

3. **Utilize the MSDE Web site to share UDL research, resources, and strategies that support all students.** This should include an online forum (e.g. blog or listserv) for individuals from all of the Maryland local school systems to dialogue and share solutions related to UDL implementation. A video on UDL and the recommendations in this report should be added to the MSDE TV page located under the News Room tab on www.MarylandPublicSchools.org.

4. **Incorporate UDL into the State Curriculum and State assessments as they are being reviewed and revised to meet federal Race to the Top requirements.** This

should include embedding in the State Curriculum Toolkit a variety of resources and strategies that meet the varied needs of a range of students.

5. **Include the application of UDL principles and guidelines as criteria for organizational functions** such as:
   - State grant applications and requests for proposals (RFPs).
   - Program audits/evaluation criteria for teacher preparation programs. (It is important to note that the application of UDL principles should be woven throughout the teacher preparation program and field experiences, clearly denoted within course syllabi and not relegated to one course in isolation.)
   - Revisions or updates that may be made to the MSDE Strategic Plan, Maryland Technology Plan and the Maryland Teacher Technology Standards or any other State plans as appropriate.
   - Revisions or updates to the courses included in the Maryland Virtual Learning Opportunities Program.

6. **Create and implement ongoing professional development for building capacity on UDL principles and guidelines among leadership at the State and school system levels for replication at school levels.** The plan should include administrators, teachers, and specialists from general education, special education, ELL, and gifted/talented education. The plan should also include curriculum writers, assessment developers, instructional technology and assistive technology support specialists, and information technology (IT) support providers.

7. **Provide strategies to develop professional learning communities among local school systems and institutions of higher education to support UDL implementation and to help develop the cultural shift that will have to take place to institutionalize UDL.**

8. **Include in the Master Plan requirements criteria specific to incorporating UDL principles in organizational and instructional decision-making and practices.** This may include the need for the creation of cross-departmental work groups (e.g. curriculum design, instructional technology, professional development, special education) to support UDL implementation.

9. **Include the principles of UDL in the discussion as teacher and administrator effectiveness criteria are being developed.**

10. **Work collaboratively with local school systems in the development and approval of Continuing Professional Development courses on:**
    - UDL principles and guidelines.
    - Developing professional leadership teams to implement and monitor UDL.
    - Effective coaching for instruction, including instructional technology implementation using UDL principles and guidelines.

11. **Address the issue of the need for accessible materials with educational publishers and vendors** in accordance with the Maryland Accessibility Regulation and Statute 13A.05.02 13H Technology-Based Instructional Products Education Article §7-910 Equivalent Access for Students with Disabilities. The discussion should include a broader conversation regarding the possibility of developing a market model for the use of materials by students with and without print disabilities.

Recommendations for Local School Systems

The Task Force members recognize existing fiscal constraints in the current economic climate. As discussed previously, the application of many of the UDL principles and guidelines can be accomplished at little to no cost by providing students with choices for the methods of learning and responding and the ability to use a variety of instructional materials to support their learning. Applying UDL principles and guidelines should become an integral part of ongoing curriculum, instruction, and assessment development. To achieve this end, strategies for applying UDL should be embedded within existing professional development plans. If a local school system strives to systemically integrate UDL principles into organizational and instructional practice, there would be a need for someone to coordinate this cross-departmental and cross-school effort.

Recommendations for Local School Systems

1. **Request that the local board of education establish a policy supporting the implementation of UDL principles to promote access and achievement of all learners.**
2. **School system and school administrators should establish a vision and common language regarding the use of UDL principles** with the expectation that staff, students, parents, and the community support this effort to maximize opportunities for student achievement by incorporating UDL into school improvement plans.
3. **Create cross-departmental workgroups to develop a UDL strategic plan to support implementation and guide practices and procedures.** Workgroups should include teachers, technology specialists, IT support specialists, assistive technology specialists, and curriculum developers across subjects and areas (general and special

education, ELL, gifted, etc.) and the input of parents and students should be sought. Part of the planning process should be to establish a vision of systemic implementation of UDL principles in organizational and instructional practices and procedures. To achieve this vision, the Task Force recommends the school system workgroup focus on the following:

- Developing an inventory of instructional texts, materials, online resources, technology tools and applications available to support UDL implementation.
- Examining currently available instructional texts and materials, online resources, technology tools and applications to identify cultural and learning barriers for general education, gifted and talented, English Language Learners, and special education students, including those with physical, cognitive, or sensory disabilities.
- Determining the allocation of technology devices per classroom needed to provide flexible options for instruction and learning.
- Conducting lesson studies to identify barriers for the range of students described above within existing curriculum, methods, and materials and adjust existing lessons to allow for the implementation of UDL.
- Ensuring the current and future instructional guides support lesson plans that are flexible to allow for the application of UDL within the unit timeline. (When assessment schedules and curriculum timelines drive instruction there are few options to include flexible methods of presentation, expression and engagement.)
- Developing a rubric for the evaluation and selection of textbooks (both print and electronic), instructional materials, Web-based and other digital resources, and software tools to ensure a range of items that are commensurate with UDL principles and accessible to all students including students with physical, cognitive, and/or sensory disabilities, English Language Learners, gifted and talented students or students who may be a part of more than one of these groups. Online resources should be selected that will bridge school-to-home usage.
- Disseminating the processes to acquire specialized formats for students with qualifying print disabilities through sources such as Bookshare, Recordings for the Blind and Dyslexic, and the Maryland Instructional Resource Center for students with visual impairments. Market models to purchase digital texts accessible to all students should be explored.
- Ensuring that special education and ELL accommodations are carefully considered to achieve short and long term objectives and are built into curriculum and assessment for all students, wherever possible.

4. **Review and revise school system assessments for all students in accordance with UDL** principles to address second language, physical, sensory, and cognitive barriers from the onset to reduce the need for accommodations that hinder student independence.

5. **Provide time for collaborative planning** to ensure that general, special, and ELL educators routinely work together to develop instructional activities linked to the State Curriculum that incorporate UDL principles.

6. **Develop and facilitate ways to share exemplary UDL practices, resources, sample lesson plans, classroom assessments, and teacher-made materials**, and consider sharing lesson plans, materials, and resources within and across Maryland school systems.

7. **Develop a centralized repository** that will allow staff to share digital instructional materials and online educational resources incorporating UDL and aligned with copyright law, and commensurate with efforts to increase Accessible Instructional Materials as mandated by IDEA.

8. **Create or use existing rubrics to ensure the selection of a range of instructional materials reflective of UDL that address the needs of diverse learners.**

9. **Use existing funds strategically to ensure adequate funding for:**
   - Professional development on UDL principles and practices, as they apply to the full range of student ability levels, embedded within existing instructional and programmatic professional development activities.
   - Time in the master schedule for collaboration across departments and among general, ELL, and special educators to plan with UDL in mind.
   - Technology and infrastructure to support UDL and other 21st century learning practices.
   - Training on the use of instructional technology to implement UDL, incorporated into existing professional development opportunities.
   - Job-embedded, professional learning at schools to develop and model effective UDL implementation strategies.
   - IT support as the infrastructure and use of technology for instruction increases.

10. **Communicate the expectation that lesson plans should have flexible options built in from the onset.** When instructional conformity is communicated and testing schedules dominate instruction, then it is difficult for staff to understand how to implement flexible options.

11. **Incorporate UDL into individual teacher plans for professional growth to ensure that all teachers are developing the 21st century skills that are needed to prepare all students.**

12. **Consider designating responsibility to a school system staff position to coordinate an effort across school systems to establish a consortium to better leverage funds to purchase accessible digital educational materials for all students.**

Recommendations for Schools

Educate all school staff and stakeholders that UDL is for every child—general education, special education, gifted and talented, and ELLs. To ensure buy-in, everyone must understand that UDL principles are applied to the broader context of accessibility in learning for every student, not just students with disabilities. Therefore, UDL is not a special education initiative, but a philosophical approach for designing curriculum, shaping instruction, selecting instructional materials/technology and developing assessments that provide greater access to learning for all students. There is more to implementing UDL than what is observable in classrooms; planning, ongoing communication and the efficient sharing of strategies and resources are critically important. Implementing UDL in classrooms requires focused administrative support, clear goals and expectations, systems for accountability, as well as job-embedded professional learning opportunities built into the school schedule with time allocated for co-planning. School wide implementation is the ultimate goal but not the starting point. Systematic implementation should begin with a group of skilled educators who are natural leaders, who volunteer to receive training to implement UDL in their classrooms and in time coach others. UDL requires on-site coaching and mentoring that goes beyond awareness level training.

Recommendations for Schools

1. **Establish a UDL vision for your school with stakeholders**, including all staff (administrators, general and special education teachers, ESOL teachers, support staff, media specialists, technology, assistive technology, IT support and the community).

2. **Embed this UDL vision in the school improvement plan.**

3. **Analyze current UDL teacher implementation, and create a professional development plan to build capacity using job-embedded professional learning.**

4. **Provide professional development regarding the identification of teaching barriers vs. learning barriers** using a diagnostic problem-solving approach for individual students.

5. **Provide opportunities to re-examine classroom configuration, the use of learning stations, small groupings, performance-based and project-based learning, and incorporating choices into teaching and learning.**

6. **Inventory technologies and instructional materials that are currently available to teachers and ensure teachers have access to them to support UDL implementation** (e. g., providing training on the use of technology in keeping with UDL guidelines, ensuring the technology is readily available, eliminating cumbersome procedures to access and use technology in classrooms).

7. **Provide teachers opportunities in the master schedule to plan and share flexible lessons, collaborate across disciplines, and reflect on their practice.**

8. **Monitor classroom UDL implementation, provide teachers feedback, and ensure teachers receive on-site guided independent practice supported by mentoring/coaching and explicit feedback.**

9. **Principal observations should include UDL "look fors" for the following for the full range of learners in classrooms,** including students who are gifted and talented, ELLs students with physical, cognitive, and/or sensory disabilities, learners who may be a part of more than one of these types of learners, and students without disabilities:
   - Curriculum materials presented in multiple formats
   - Students demonstrating skill and knowledge in multiple ways
   - Student tasks incorporating options to allow for a variety of student preferences and needs
   - Students using available classroom technology as a tool to learn and engage with the curriculum

10. **Examine current school practices using UDL principles and guidelines as a bridge to learning at school and at home by:**
    - Providing information to parents on the benefits of UDL relative to the school improvement plan.
    - Using Web-based communication tools to digitally transfer homework assignments to and from school.

- Using Web-based resource tools that are accessible to students at school and at home, and providing information to families on how to use these tools.
- Working with local public libraries to develop an inventory of tools and materials that are accessible to students with language barriers and/or physical, sensory, and cognitive disabilities.

Recommendations for Institutions of Higher Education

The potential for UDL to remove barriers to learning for all students extends to higher education. The student population of today's colleges and universities is diverse, and that diversity includes different learning styles, preferences, and needs. Also, a number of students may have physical, cognitive or sensory disabilities, which may or may not be apparent. UDL can help institutions of higher education meet students' learning needs and improve learning for all students. To advance UDL in Maryland's institutions of higher education, it is essential that colleges and universities build UDL into the mission and vision, obtain stakeholder buy-in, and recognize that UDL is a framework for learning that removes barriers without lowering standards. With professional development, support, and clear expectations for all teaching staff, Maryland's institutions of higher education can create flexible learning environments that allow all students to thrive academically. This includes extending opportunities for individuals with intellectual disabilities to participate in higher education coursework.

Recommendations for Institutions of Higher Education

Pending available funding sources, it would be helpful to create a Maryland Education System Center for UDL to support UDL in higher education and to take the leadership in creating a Web-based toolkit of UDL resources for higher education and preK–12 schools.

Recommendations for ALL Faculty Members:

1. **Ensure that all faculty understand that the principles of UDL should be a part of the initial course design process, rather than a solution designed to retrofit.** All faculty at institutions of higher education need to know the principles of UDL and integrate them into course implementation with the supportive policies and professional development needed. This includes that:
   - UDL is not an add-on but blends proactive course design with inclusive instructional strategies to design courses that are useable by the widest range of learners from the outset.
   - Instructors should be encouraged to use the UDL Educator Checklist in Appendix D, also available on the Web at http://www.udlcenter.org/implementation, as they consider their goals, materials, methods, and assessments to benefit a wide range

of students to the greatest extent possible by using flexible options to deliver content and allowing for flexible options for expression and engagement.

2. **Embed UDL into the vision and strategic planning for organizational practices and instructional design practices within the institution.**

3. **Encourage instructors to embed UDL principles in course syllabi and in the design and delivery of content and assessments.** This can be initiated by offering opportunities for faculty professional development that support the application of UDL principles in the classroom. Examples include:
   - The ability to identify and recognize that there is a wide range of learning variability in 21st century classrooms including students who are gifted and talented, ELLs, students with physical, cognitive, and/or sensory disabilities, learners who may be a part of more than one of these types of learners, and students without disabilities.
   - Knowledge of accessibility and how to reduce learning barriers in instruction as it relates to reading, listening, comprehension, oral and written communication, executive functioning, and test taking.
   - The awareness of the importance of making texts and instructional materials available digitally.
   - The ability to design instruction that allows for flexible methods of presentation, expression, and engagement.
   - The effective use of technology to apply the UDL principles and model the use of 21st century tools.
   - Awareness of the Higher Education Opportunity Act, which addresses UDL, disability law, and options to increase accessibility (e.g., closed captioning, text to speech, Web accessibility).

Recommendations Specific to Teacher Education Programs

1. **Ensure that the UDL principles and guidelines are modeled in the coursework, planning, and delivery, for all teacher and administrator preparation programs.**

2. **UDL principles should be included and taught in both general and special education methods courses.**

3. **Encourage pre-service teachers to use the UDL Educator Checklist in Appendix D, also found on the Web at http://www.udlcenter.org/implementation, as a framework for lesson and unit planning.**

4. **Include the UDL guidelines with existing observation tools utilized by mentor teachers and university supervisors.**

5. **Provide active support for the implementation of UDL principles and guidelines through professional development partnerships with local school systems, the Maryland State Department of Education, in education preparation programs, and in professional development schools.**

Appendix A: References

Center for Applied Special Technology (CAST). 2011a. *UDL Guidelines*. Retrieved from www.cast.org/library/UDLguidelines

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Spooner, F., Baker, J. N., Harris, A. A., Ahlgrim-Delzell, L., & Browder, D. M. (2007). Effects of training in universal design for learning on lesson plan development. *Remedial and Special Education, 28*(2), 108-116. Retrieved from http://sharedwork.org/17618/files/17124/9942/Effects+of+Training+in+Universal+Design+for+Learning+on+Lesson+Plan+Development.pdf

Strangman, N., Hall, T., & Meyer, A. (2003). *Graphic Organizers and Implications for Universal Design for Learning: Curriculum enhancement report.* Wakefield, MA: National Center on Accessing the General Curriculum. Retrieved from http://www.cast.org/publications/ncac/ncac_goudl.html

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Appendix B: Literature Review

Literature Review

	Article	Topics Covered (G=general article on UDL)		
		Curriculum & Assessment	**Materials & Technology**	**Preservice & Inservice Teacher Prep**
	DeCoste, D., Bell, J., & Diedrich, J. [awaiting publication] Discusses UDL Implementation through three points of entry: school, district (Montgomery County, Maryland), and state (Michigan).	X	X	X
	Edyburn, D. L. (2010). Would you recognize universal design for learning if you saw it? Ten propositions for new directions for the second decade of UDL. *Learning Disability Quarterly, 33(1)*, 33-41.Retrieved October 17, 2010 from https://pantherfile.uwm.edu/edyburn/www/UDL2ndDecade.pdf	X	X	X
	Fact Sheet: English Language Learners and UDL (National Universal Design for Learning Task Force). Retrieved October 14, 2010 from http://www.advocacyinstitute.org/UDL/ELLfaqs.shtml	G	G	G
	Fact Sheet: The Facts for Educators (National Universal Design for Learning Task Force). Retrieved October 14, 2010 from http://www.advocacyinstitute.org/UDL/Educatorfaqs.shtml	G	G	G
	Fact Sheet: The Facts for Policymakers (National Universal Design for Learning Task Force). Retrieved October 14, 2010 from http://www.advocacyinstitute.org/UDL/Policymakersfaqs.shtml	G	G	G
	Statement on Implementing Universal Design for Learning (CAST) This document from CAST includes information on costs, professional development, and evaluation.	X	X	X
	Sopko, K. M. (2009). Universal Design for Learning: Policy Challenges and Recommendations. Project Forum, Retrieved October 10, 2010 from http://projectforum.org/docs/UDL-PolicyChallengesandRecommendations.pdf	X	X	X
	Universal Design for Learning (UDL) in Federal Policy and Legislation (National Universal Design for Learning Task Force) [Identifies where UDL appears in legislation.]	G	G	G
	Universal Design for Learning Guidelines Graphic Organizer (CAST) Retrieved October 14, 2010 from http://www.udlcenter.org/sites/udlcenter.org/files/UDL_Guidelines_v2%200-Organizer_0.pdf	G	G	G

	Article	Topics Covered (G=general article on UDL)		
		Curriculum & Assessment	**Materials & Technology**	**Preservice & Inservice Teacher Prep**
	CAST (2008). Universal design for learning guidelines, version 1.0: Introduction. Wakefield, MA: National Center on Universal Design for Learning. Retrieved from http://www.udlcenter.org/aboutudl/udlguidelines/introduction	G	G	G
	CAST (2008). Universal design for learning guidelines, version 1.0: Research Evidence. Wakefield, MA: National Center on Universal Design for Learning. Retrieved from http://www.udlcenter.org/research/researchevidence	G	G	G
	Universal Design for Learning (UDL): Making learning accessible and engaging for all students. (NEA Policy Brief) Retrieved October 14, 2010 from http://www.nea.org/assets/docs/PB_UDL.pdf	G	G	G
	Universal Design for Learning Questions and Answers (CAST) Retrieved October 14, 2010 from http://www.advocacyinstitute.org/UDL/CASTfaqs.shtml	G	G	G
	A Parent's Guide to Universal Design for Learning (National Center for Learning Disabilities) http://www.ncld.org/images/stories/Publications/AdvocacyBriefs/ParentGuide-UDL/ParentsGuidetoUDL.pdf	G	G	G
	Edyburn, D.L. (2005). Universal design for learning. Special Education Technology Practice, 7(5), 16-22. http://www.ocali.org/_archive/pdf/UDL_SETP7.pdf	G	G	G
	Harac, Lani. (2004). A Level Playing Field. *Teacher Magazine, (16)2*, 40-45.http://sharedwork.org/17618/files/17124/9916/A+Level+Playing+Field.pdf	X	X	
	Howard, K. L. (2004). Universal design for learning: Meeting the needs of all students. *Learning and Leading with Technology, 31*, 26-29.http://4.17.143.133/udl/downloads/LLT.pdf	X	X	
	Jimenez, T.C., Graf, V.L., & Rose, E. (2007). Gaining Access to General Education: The promise of universal design for learning. *Issues in Teacher Education, 16(2)*, 41-54. http://www.eric.ed.gov/PDFS/EJ796250.pdf	X	X	X
	King-Sears, M. (2009). Universal design for learning: Technology and pedagogy. *Learning Disability Quarterly, 32*, 19201.http://www.thefreelibrary.com/Universal+design+for+learning%3A+technology+and+pedagogy.-a0213527641	X	X	X

	Article	Topics Covered (G=general article on UDL)		
		Curriculum & Assessment	**Materials & Technology**	**Preservice & Inservice Teacher Prep**
	Kortering, L. J., McClannon, T. W., & Braziel, P. M. (2008). Universal design for learning: A look at what algebra and biology students with and without high incidence conditions are saying. *Remedial and Special Education, 29(6)*, 352-363. Retrieved October 17, 2010 from http://sharedwork.org/17618/files/17124/9944/UDL-A+Look+at+What+Algebra+and+Biology+Students+With+and+Without+High+Incidence+Conditions+are+Saying.pdf	X	X	X
	Lieber, J., Horn, E., Palmer, S., & Fleming, K. (2008). Access to the general education curriculum for preschoolers with disabilities: Children's school success. *Exceptionality, 16(1)*, 18–32.Retrieved October 17, 2010 from http://sharedwork.org/17618/files/17124/9899/Access+to+the+General+Education+Curriculum+for+Preschoolers+with+Disabilities.pdf	X		X
	Meo, G. (2008). Curriculum planning for all learners: applying universal design for learning (UDL) to a high school reading comprehension program. *Preventing School Failure, 52(2)/ Winter 2008,* 21-30.Retrieved October 17, 2010 from http://sharedwork.org/17618/files/17124/9903/Applying+UDL+to+a+HS+Reading+Comp+Program.pdf	X	X	X
	Rose, D. H., Gravel, J. W. & Domings, Y. (in press). Beyond technology: Universal design for learning unplugged. Wakefield, MA: National Center on Universal Design for Learning.		X	
	van Garderen, D., & Whittaker, C. (2006). Planning differentiated, multicultural instruction for secondary inclusive classrooms. *Teaching Exceptional Children, 38(3)*, 12-20. Retrieved October 17, 2010 from http://rtitlc.ucf.edu/Tools/documents/Diff/Planning_Differentiated_Multicultural_Instruction_for_Secondary_Inclusive_Classrooms.pdf	X		X
	Spooner, F., Baker, J. N., Harris, A. A., Ahlgrim-Delzell, L., & Browder, D. M. (2007). Effects of training in universal design for learning on lesson plan development. *Remedial and Special Education, 28(2)*, 108-116. Retrieved October 17, 2010 from http://sharedwork.org/17618/files/17124/9942/Effects+of+Training+in+Universal+Design+for+Learning+on+Lesson+Plan+Development.pdf	X		X

	Article	Topics Covered (G=general article on UDL)		
		Curriculum & Assessment	**Materials & Technology**	**Preservice & Inservice Teacher Prep**
	CAST. (2010). Perspectives on large-scale assessment, universal design, and universal design for learning. Retrieved October 11, 2010 from http://www.cast.org/policy/assessment/index.html.	X	X	
	Dolan, R. P. and T. E. Hall (2001). Universal Design for Learning: Implications for large-scale assessment. *IDA Perspectives, 27(4)*, 22-25. Retrieved October 17, 2010 from http://4.17.143.133/udl/UDLImplicationsforLarge-ScaleAssessment2518.cfm	X		
	Gordon, D.T., Gravel, J.W., & Schifter, L.A. (2010). Perspectives on Large-Scale Assessment: An interview with Robert Mislevy. Retrieved October 11, 2010 from http://www.udlcenter.org/resource_library/articles/mislevy	X	X	
	Johnstone, C. J., Thompson, S. J., Miller, N. A., & Thurlow, M. L. (2008). Universal design and multi-method approaches to item review. *Educational Measurement: Issues and Practice, 27(*1), 25-36. Retrieved October 17, 2010 from http://www.cehd.umn.edu/edpsych/C-BAS-R/Docs/Johnstone2008.pdf	X		
	Ketterlin-Geller, L.R. (2008). Testing students with special needs: A model for understanding the interaction between assessment and student characteristics in a universally designed environment. *Educational Measurement: Issues and Practice, 27*(3), 3-16.	X		
	Rose, D. H., Hall, T. E. & Murray, E. (2008, Fall). Accurate for all: Universal design for learning and the assessment of students with learning disabilities. *Perspectives on Language and Literacy*, 23-28.	X		
	Thompson, S.J., Johnstone, C.J., & Thurlow, M.L. (2002). Universal design applied to large-scale assessments (NCEO Synthesis Report 44). Minneapolis, MN: University of Minnesota, National Center on Educational Outcomes.http://www.cehd.umn.edu/NCEO/onlinepubs/synthesis44.html	X	X	
	Faculty & Administrator Modules in Higher Education (FAME) Project (2007). *Universal Design for Learning* [Online course]. Columbus, OH: Ohio State University. http://www.oln.org/ILT/ada/Fame/udl/f2_11_145.html	X		X
	Gradel, K., & Edson, A. J. (2010). Putting universal design for learning on the higher ed agenda. Journal of Educational Technology Systems, 38(2), 111-121.*****	G	G	G
	Izzo, M.V., & Murray, A. (2003). Applying Universal Design for Learning principles to enhance achievement of college students. In Steve Acker & Catherine Gynn's, Learning Objects: Context and Connections. Ohio State University.*****	G	G	G

	Article	Topics Covered (G=general article on UDL)		
		Curriculum & Assessment	**Materials & Technology**	**Preservice & Inservice Teacher Prep**
	Izzo, M., Murray, A., & Novak, J. (2008). The Faculty Perspective on Universal Design for Learning. *Journal of Postsecondary Education and Disability, (21)*2, 60-72. Retrieved from http://www.eric.ed.gov/PDFS/EJ822094.pdf	X	X	X
	Rose, D., Harbour, W., Johnston, S., Daley, S., & Abarbanell, L. (2006). Universal Design for Learning in postsecondary education: Reflections on principles and their application. *Journal of Postsecondary Education and Disability, (19)*2, 135-151. Retrieved from http://www.eric.ed.gov/PDFS/EJ844630.pdf	X	X	X
	J. L. Higbee (ed.). (2003). Curriculum transformation and disability: implementing universal design in higher education. Minneapolis, MN: University of Minnesota. Retrieved from http://conservancy.umn.edu/bitstream/5356/1/curriculum1.pdf	X	X	X
	Hall, T., Strangman, N., & Meyer, A. (2003). Differentiated instruction and implications for UDL implementation. Wakefield, MA: National Center on Accessing the General Curriculum. Retrieved October 17, 2010 from http://www.cast.org/publications/ncac/ncac_diffinstructudl.html	X		X
	Harper, K. A., & DeWaters, J. (2008). A quest for website accessibility in higher education institutions. *Internet and Higher Education, 11(3-4)*, 160-164.	X	X	
	Scott, S., McGuire, J., & Shaw, S. (2003). Universal Design for Instruction: A new paradigm for teaching adults in postsecondary education. *Remedial and Special Education,* 24 (6), 369-379.*****	X	X	X
	Strangman, N., Hall, T., & Meyer, A. (2004). Background knowledge with UDL. Wakefield, MA: National Center on Accessing the General Curriculum. Retrieved October 14, 2010 from http://www.cast.org/publications/ncac/ncac_backknowledgeudl.html	X		
	Strangman, N., Hall, T., & Meyer, A. (2003). Virtual reality/simulations with UDL. Wakefield, MA: National Center on Accessing the General Curriculum. Retrieved October 15, 2010 from http://www.cast.org/publications/ncac/ncac_vrudl.html		X	
	Strangman, N., Hall, T., & Meyer, A. (2003). Graphic Organizers and Implications for Universal Design for Learning: Curriculum enhancement report. Wakefield, MA: National Center on Accessing the General Curriculum. Retrieved October 15, 2010 from http://www.cast.org/publications/ncac/ncac_goudl.html	X	X	X

	Article	Topics Covered (G=general article on UDL)		
		Curriculum & Assessment	**Materials & Technology**	**Preservice & Inservice Teacher Prep**
	Wu, X., & Newman, M. (2008, March). Engage and excite all learners through a visual literacy curriculum. Paper presented at the annual meeting of the American Educational Research Association, New York, NY. Retrieved from http://www.eric.ed.gov/PDFS/ED502353.pdf.	X [ELL]		

Selected State Initiatives

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Kentucky Department of Education, Pathway to Achievement: Universal Design for Learning (UDL), http://www.education.ky.gov/KDE/Instructional+Resources/Curriculum+Documents+and+Resources/Universal+Design+for+Learning/default.htm

Indiana, Promoting Achievement through Technology and Instruction for All Students (PATINS Project), http://www.patinsproject.com/

Louisiana, Bridging the Gap through Universal Design for Learning, http://www.cast.org/pd/initiatives/louisiana.html

Muller, E. & Tschantz, J. (2003). Universal Design for Learning: Four state initiatives. Washington DC: National Association of State Directors of Special Education. Retrieved from http://www.projectforum.org/docs/udl.pdf

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Selected Postsecondary Initiatives

Colorado State University, The Access Project, http://accessproject.colostate.edu

Jenner, C. & Culwell, C. (2006). Using Universal Design for Learning in Community and Technical Colleges, UDL Project, 2002-2008. Retrieved from the World Wide Web on October 11, 2010 at http://webs.rtc.edu/ii/DSDP%20Grant/manuals.htm

Renton Technical College. (2009). Universal Design for Learning Project-Learning Assessment System, Executive summary-Final Report, October 1, 2005-June 30, 2009. Retrieved from the World Wide Web on October 11, 2010 at http://webs.rtc.edu/ii/dsdp.html

University of Connecticut—Universal Design of Instruction, www.facultyware.uconn.edu/home.cfm

University of Massachusetts-Boston, http://www.ccids.umaine.edu/projects/ee-udl/default.htm

California State University System, http://enact.sonoma.edu/

University of Washington—Do-IT, http://www.washington.edu/doit/

Selected Web Resources

Center for Applied Special Technology (CAST)(www.cast.org)

CAST (2009). Applying UDL to lesson development. CAST UDL Online Modules [Online course]. Wakefield, MA: Author. Retrieved from http://udlonline.cast.org/page/module2/l3/

CAST (2005). CAST UDL Lesson Builder [online publication and tool]. Wakefield, MA: Author. http://lessonbuilder.cast.org/

Teaching Every Student (TES) (www.cast.org/teachingeverystudent)

National Center on Universal Design for Learning (www.udlcenter.org)

Advisory Commission on Accessible Instruction Materials. http://www2.ed.gov/about/bdscomm/list/aim/index.html

AIM Center & NIMAS Center, http://aim.cast.org/ and http://aim.cast.org/collaborate/NIMASCtr

Center for Implementing Technology in Education (CITEd) (www.cited.org)

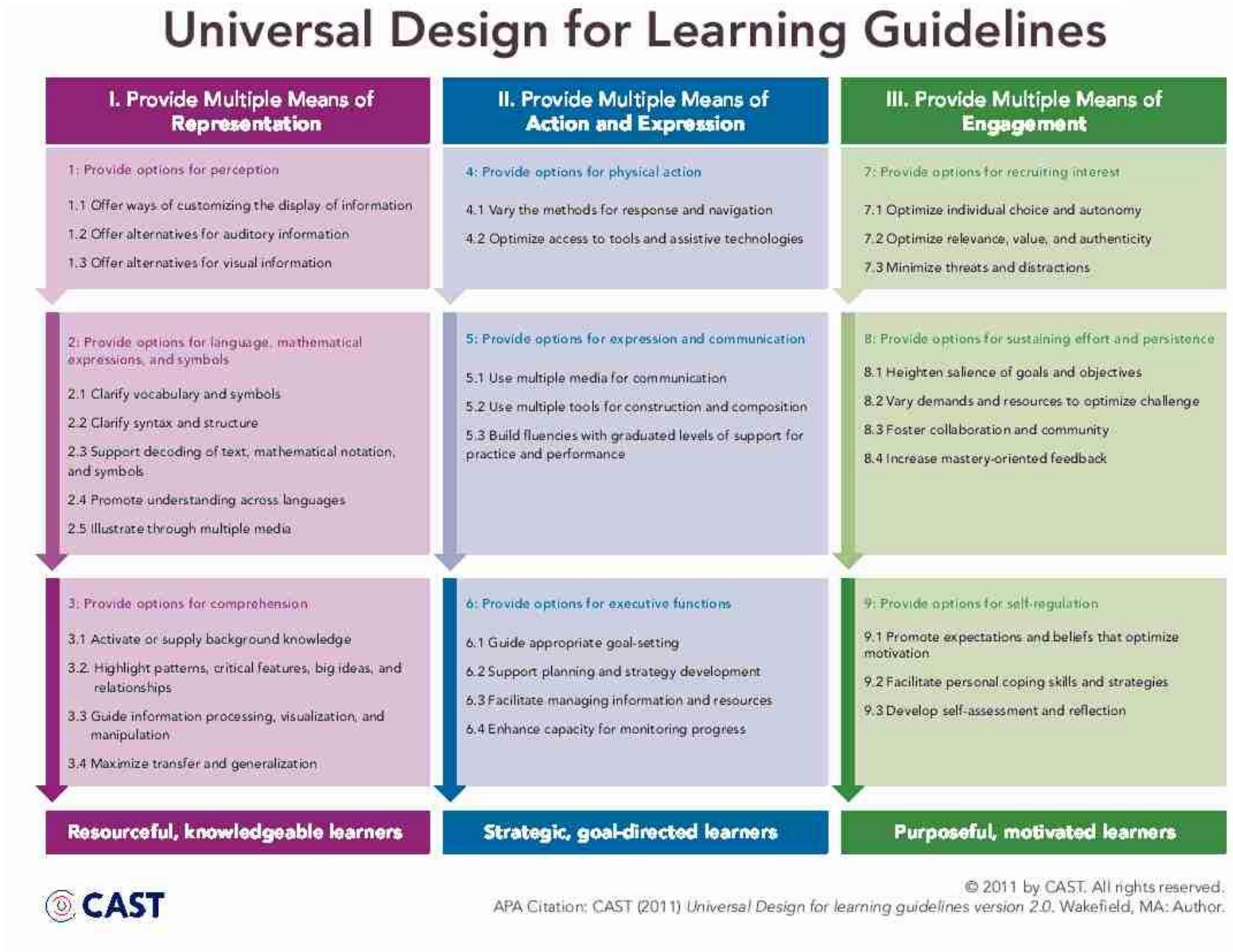
National Center on Accessing the General Curriculum,www.cast.org/research/projects/ncac.html

National Education Technology Plan (http://www.ed.gov/technology/netp-2010)

Toolkit for Universal Design for Learning, OSEP Ideas That Work, U.S. Office of Special Education Programs, www.osepideasthatwork.org/udl/

Appendix C: UDL Guidelines Graphic

Download the full text of the UDL Guidelines 2.0 at www.udlcenter.org/aboutudl/udlguidelines.



Appendix D: UDL Guidelines – Educator Checklist

Version 2 from www.udlcenter.org/aboutudl/udlguidelines/downloads

I. **Provide Multiple Means of Representation:**	Your notes
1. Provide options for perception	
1.1 Offer ways of customizing the display of information	
1.2 Offer alternatives for auditory information	
1.3 Offer alternatives for visual information	
2. Provide options for language, mathematical expressions, and symbols	
2.1 Clarify vocabulary and symbols	
2.2 Clarify syntax and structure	
2.3 Support decoding of text, and mathematical notation, and symbols	
2.4 Promote understanding across language	
2.5 Illustrate through multiple media	
3. Provide options for comprehension	
3.1 Activate or supply background knowledge	
3.2 Highlight patterns, critical features, big ideas, and relationships	
3.3 Guide information processing, visualization, and manipulation	
3.4 Maximize transfer and generalization	
II. Provide Multiple Means for Action and Expression:	Your notes
4. Provide options for physical action	

4.1 Vary the methods for response and navigation	
4.2 Optimize access to tools and assistive technologies	
5. Provide options for expression and communication	
5.1 Use multiple media for communication	
5.2 Use multiple tools for construction and composition	
5.3 Build fluencies with graduated labels of support for practice and performance	
6. Provide options for executive functions	
6.1 Guide appropriate goal setting	
6.2 Support planning and strategy development	
6.3 Facilitate managing information and resources	
6.4 Enhance capacity for monitoring progress	
III. Provide Multiple Means for Engagement:	Your notes
7. Provide options for recruiting interest	
7.1 Optimize individual choice and autonomy	
7.2 Optimize relevance, value, and authenticity	
7.3 Minimize threats and distractions	
8. Provide options for sustaining effort and persistence	
8.1 Heighten salience of goals and objectives	
8.2 Vary demands and resources to optimize challenge	

8.3 Foster collaboration and community	
8.4 Increase mastery-oriented feedback	
9. Provide options for self-regulation	
9.1 Promote expectations and beliefs that optimize motivation	
9.2 Facilitate personal coping skills and strategies	
9.3 Develop self-assessment and reflection	

Appendix E: Description of the Task Force Process

UDL Task Force Process

The first meeting of the UDL Task Force took place on October 20, 2010. The Task Force members were given a brief overview of UDL—its main principles and the potential effectiveness and feasibility of using UDL in all schools in Maryland. The charge of the Task Force was shared and experiences demonstrating UDL principles and guidelines were incorporated into the meeting structure. The Task Force was divided into subcommittees based on the participants' expertise and interests. The subcommittee members agreed to read articles that related to UDL in general and those specifically related to their subcommittee. In addition, the members of the subcommittees agreed to conduct telephone interviews with people in the field of UDL as related to their particular assignment. The subcommittees identified were: Instructional Materials and Technology; Curriculum, Instruction and Assessment; and Teacher Preparation. The subcommittees selected a leader, identified which articles they would read, and made recommendations as to how those articles would be presented to the group as a whole. They also made recommendations on the types of questions that would be used during the phone interviews.

In between the first and second full Task Force meetings the subcommittees completed and submitted their readings and phone interview capture sheets. The subcommittees also participated in a WEBEX conference to check on progress and problems that the committee members might be experiencing.

The second and last full UDL Task Force meeting was held January 11, 2011. The Task Force was provided an informational sheet that summarized information submitted by Task Force members as a result of their readings and interviews. The Task Force took the information provided, and through individual reflection and small and large group discussion, made recommendations on how MSDE, Local School systems, higher education, and schools can move forward in their implementation of UDL principles and guidelines. The Task Force members also made a commitment as to how they as individuals would assist in the implementation of UDL practices.

Appendix F: Meeting Agendas

Agenda

Task Force to Explore the Incorporation of the Principles of Universal Design for Learning (UDL) into the Education Systems in Maryland, House Bill 59 and Senate Bill 467

October 20, 2010

Outcomes:

Participants will:

1. Understand the charge of the Task Force,
2. Understand the basic principles of Universal Design for Learning (UDL),
3. Identify what we know and need to know to answer the Task Force essential questions,
4. Draft structured interview questions,
5. Identify subcommittee action steps, and
6. Understand the purpose of Google Docs and Diigo for use by the Task Force.

9:00 Welcome and Introductions

9:15 The Maryland UDL Task Force

- Getting to know the members
- Framing the conversation
- Review the charge of the UDL Task Force

9:45 UDL Introduction

- Main principles
- Effectiveness
- Feasibility

10:45 Break

11:00 KWL Reflection Activity

- What we know and need to know to respond to the UDL Task Force charge
- Share Out

12-1 Lunch

1:00 Subcommittees

- Review essential questions and develop structured interview questions
- Share Out

2:15 Review Next Steps
- Timeline review
- Review subcommittee tasks

2:35 Subcommittee Action Steps
- Identify subcommittee lead(s)
- Select articles to review
- Recommend contacts for structured interviews
- Identify a midpoint webinar date for each subcommittee

3:05 Demonstrations
- Google docs
- Diigo

3:20 Wrap Up
Feedback: Exit Card

Thank you for your participation!

Agenda

Task Force to Explore the Incorporation of the Principles of Universal Design for Learning (UDL) into the Education Systems in Maryland, House Bill 59 and Senate Bill 467

January 11, 2011

Outcomes:

Participants will:

- Generate recommendations on what the Maryland State Department of Education can do to promote Universal Design for Learning (UDL),
- Generate recommendations on what local school systems and higher education organizations can do to promote UDL,
- Generate recommendations on what schools can do to promote UDL,
- Provide suggestions for outreach activities.

9:00 Welcome, Introductions, and Housekeeping

9:05 The Maryland UDL Task Force

- Review the charge of the UDL Task Force
- Review outcomes

9:15 Current status of UDL at the State level

9:35 Following Suit I

- Given your knowledge of UDL, the readings and interviews, what can MSDE do to move UDL forward?

10:05 Share Out

10:30 Animoto

- Review key issues at the local organizational level

10:50 Break

11:00 Following Suit II

- Given your knowledge of UDL, the readings and interviews, what can local systems/higher education do to move UDL forward?

11:45 Gallery Walk

12:00 Lunch

12:45 Share Out on Gallery Walk

1:00 UDL implementation in the classroom: Lessons Learned

1:40 Classroom Level – Break Out Groups

2:15 Share Out

2:45 UDL Task Force Tasks
- Review report format
- Think, Pair, Share
- Two Stars and a Bridge – Outreach

3:20 Wrap Up
Thank You
Feedback

Thank you for your participation!

Appendix G: Meeting Notes

Task Force to Explore the Incorporation of the Principles of Universal Design for Learning (UDL) into the Education Systems in Maryland, House Bill 59 and Senate Bill 467

Meetings Notes from the October 20, 2010 meeting at the Maryland State Department of Education Building

9:00 Meeting Begins--Sharon West welcomed the group and thanked them for their participation.

9:10 Fran Sorin opened the meeting and introduced the Maryland State Department of Education team that will be working with the Task Force and reviewed basic "housekeeping issues."

9:13 Fran Sorin provided a brief overview of Universal Design for Learning (UDL)

9:14 Warm Up

Paul Dunford began a warm up activity: imagine learning as a light bulb. Paul provided component parts of a lamp that Task Force members needed to assemble to make the light bulb work. The screwdriver is the "universal design tool" that helps us assemble the light. Our task as a group is how to put this "network" together. We are trying to get our kids connected to the learning. The best way to connect kids to learning is by activating each of the three brain networks: the recognition network, strategic network, and affective network.

Applying UDL principles moves the focus from teaching to making sure learning is done by the learner. It's important to remember that we are not putting a network together for the middle of the road child, but for every child.

9:30 Chair introduction and review of survey—Denise DeCoste, Chair, introduced herself. She shared results of the pre-meeting survey. Of 14 respondents, there was a mix of experience and knowledge of UDL.

9:32 Fran Sorin reviewed the charge of the Task Force. The first charge is the study of the effectiveness of UDL as a framework. The next piece of the bill is studying the feasibility of incorporating and applying UDL. The third piece is to evaluate the implementation of the incorporation and application of UDL. [Note: See the official task force charge on page 75 of this report for a complete text.]

9:34 Overview of Universal Design for Learning

Denise DeCoste provided an overview of UDL. Remember that universal does not mean one approach for all, but front-loading strategies for learning for all students, not retro-fitting.

Reviewed UDL references in federal policy and legislation. Ricki Sabia added that Race to the Top applications included UDL in the winning applications. Denise reviewed UDL wording in the federal Higher Education Opportunity Act.

Reviewed chart: Connecting Brain Research and UDL: The what, how, and why of learning (recognition, strategic, and affective networks). This is the essence of where Dr. Rose and the team at the Center for Applied Special Technology (CAST) began their research in UDL.

Gave examples of Multiple and Flexible Means of Presenting Information (offer multi-media, highlighting, providing vocabulary and background, assistive technologies). Multiple and Flexible Means of Expression (graphic organizers and outlines, vocabulary word banks, show what they know in different ways). Multiple and Flexible Means of Engagement (vary challenge/support to prevent frustration, boredom, tie to real-world, choices, self-assessment/reflection).

UDL Guidelines are available at: www.udlcenter.org/guidelines.

UDL applications in today's schools and classrooms: goals, materials, methods of instruction, assessment assessments.

Systems Change processes were reviewed.

Denise reviewed her role at MCPS and how the school system supports UDL.

Systemic considerations: professional development, curriculum, special education, technology, assessment and accountability, evaluation and selection of materials.

Ensuring a conceptual understanding by everyone. Administrators, principals, curriculum design, instructional staff, and instructional technology staff.

Address learning barriers up front.

NIMAS-National Instructional Materials Accessibility Standards—for students who *qualify.* By law, the requested materials are sent to the NIMAC where schools can apply for access to the materials. But this does not address the needs of all students. The group discussed the challenge of how to make such alternate formats available to all students, not a select few. There is no "market model" for a publisher providing such formats while still making a profit.

Assessments need to be designed using UDL principles from the outset, for example, allowing math test questions to be read if the student has that preference or need.

Explore Research Evidence for UDL Guidelines—click on checkpoints within main principles of UDL and you can see all of the research available there. Available on the Web at www.udlcenter.org/research/researchevidence.

The Task Force members introduced themselves and then the charge of the Task Force was reviewed again.

10:15 Break

10:30 What we Know, What we Want to Know and What we Learned (KWL)

KWL Reflection Activity

The Task Force broke into four groups to complete the first two columns of the KWL worksheet: What We **K**now, and What We **W**ant to Know.

The groups reported out their findings. Lauren Blundin recorded these findings on the PowerPoint presentation.

12:00 Lunch—during lunch Task Force members self-selected subgroups.

12:45 Subcommittees Meet & Report Out

The Task Force gathered into subcommittees. Denise went through the tasks for subcommittees. Subcommittees will review and summarize the existing UDL literature as well as do a structured phone interview (1 or 2). Today, subcommittees will draft the questions for interviews and divide the literature for review. They will be sending the questions back to MSDE who will review and compile them for use in the interviews. (The purpose of the interview is to fill in gaps in the literature, which is still very young.) Groups used the KWL charts created earlier in the day to jumpstart the discussion.

Report Out by Group

1:45 Timeline Review—Extended from original

Draft Recommendations: Is there a way to build in a method for various constituencies to have an opportunity to read the draft recommendations? (Does not have to be full report, just draft of recommendations). Perhaps sending a link via Google docs? Task force members can send to their constituencies and solicit feedback.

Perhaps if there are certain groups we should include, they can be included in the structured interviews.

State Board meeting—Do we want to get on the agenda for a presentation?

Governor's P-20 leadership council—first meeting is Nov.19 . Is this is another place to promote the work/recommendations?

In general, how do we build on momentum of the report?

2:00 Subcommittee Literature Review

In general, read the literature and summarize key points for Task Force review. Analyze key points and identify what is important to UDL in Maryland.

Any articles you would like to add, please contact Lauren Blundin at "Lauren Proutt Blundin" laurenproutt@verizon.net. Also, if you have any contacts for interviews, send contact information to Lauren.

The subcommittees reviewed the article matrix and divided up reading assignments, discussed a schedule for their work and getting their work products to the group leader, who will compile all responses together into one submission. Subcommittees decided if they needed a webinar meeting and identified tentative dates.

2:45 Technology—A review of Google Docs and Diigo and webinars

Google docs for managing articles and other handouts, documents. (please do not share Google docs outside of this group)

Diigo, a bookmarking Web site for URLs. (Ok to share Diigo link)

3:00 Meeting Adjourns—Subcommittees complete and turn in the "exit ticket" of alpha/delta

Task Force to Explore the Incorporation of the Principles of Universal Design for Learning (UDL) into the Education Systems in Maryland, House Bill 59 and Senate Bill 467

Meetings Notes from the January 11, 2010 meeting at the Maryland State Department of Education Building

9:00 a.m. Introductions, Review of Charge and Previous Work —Task Force Chair Denise DeCoste and Fran Sorin of the Maryland State Department of Education expressed their appreciation to the Task Force for their work in reading and responding to research literature and conducting structured interviews with experts in the field. Approximately 26 responses to research literature and 18 structured interviews were submitted by Task Force members. Lauren Blundin captured themes, recurring issues, and draft recommendations from these submissions and created a summary document. Task Force members can refer to the document throughout the day as they are drafting recommendations.

9:15 a.m. Review of current Maryland State Department of Education efforts to promote the implementation of UDL in Maryland public schools. MSDE representatives from the areas of leadership development, special education, curriculum and instruction, and assessment presented information.

The presentations communicated the many ways MSDE is already promoting UDL, including through the Maryland Principals Academy, the Maryland Co-Teaching Network and Middle Schools' professional development, the Governor's Academy, by incorporating UDL into online curriculum tools, and incorporating UDL into assessment (item development and review, different testing formats, and testing accommodations). MSDE is also using cognitive labs, which involves interviewing students to understand how they approach test items and what aspects of items were particularly challenging.

9:50 a.m. Breakout Groups 1—Small groups discussed and drafted recommendations for what MSDE can do to move UDL forward in Maryland. (Playing cards were distributed and groups were established based on suits.)

Each group's recommendations were recorded on chart paper and posted on the wall. After they finished drafting recommendations, each group gave a brief synopsis of their work. Lauren Blundin collected the chart papers at the end of the meeting and will use the groups' work to draft a list of recommendations to be shared with the Task Force for comment on February 7.

10:40 a.m. Animoto Video: The Task Force chair shared an Animoto Video to stimulate thought on school system level strategies to promote UDL. (Animoto is a simple, free online tool.)

11:00 a.m. **Breakout Groups 2:** Small groups work to develop recommendations for what school systems and higher education can do to move UDL forward. Groups record recommendations on chart paper and post on the wall. Afterward Task Force members take a "gallery walk" and review all of the recommendations.

Noon **Lunch**

12:30 p.m. **Discuss Gallery Walk**: The Task Force discussed the recommendations proposed during the last breakout session. Lauren Blundin collected the chart papers at the end of the meeting and will use the groups' work to draft a list of recommendations to be shared with the Task Force for comment on February 7.

12:35 p.m. **Video:** Watch a video example of co-teaching. (Some group members had questions about what co-teaching looked like in action.)

12:40 p.m. **Implementing UDL in Classrooms: Lessons Learned—Presentation from the Chair**

Task Force members were provided several options of "guided notes," a handout that they could use to take notes on the presentation. The guided notes handout is an example of low-tech UDL in action. The presentation summarized the approach and lessons learned by Montgomery County Public Schools during the first three years of its UDL model initiative.

1:40 p.m. **Breakout Groups 3:** What needs to be done at the school and classroom levels to effectively implement UDL? Small groups discussed and drafted recommendations. The recommendations were recorded on chart paper. Groups chose a visual metaphor to organize their recommendations. For example, one group drew the "road to achievement" with UDL being the vehicle. After completing their recommendations, each group shared its work, and there was a whole group discussion on what schools can do to promote UDL. Lauren Blundin collected the chart papers at the end of the meeting and will use the groups' work to draft a list of recommendations to be shared with the Task Force for comment on February 7.

2:35 p.m. **Final Report Outline**: The Task Force reviewed and discussed the outline for the final report and the review and comment schedule. In addition, the Task Force members discussed the portion of the charge to the Task Force regarding drafting and recommending proposed regulations incorporating the findings of the Task Force. Although the members support the use of UDL principles for improved outcomes for today's diverse learners, it is the consensus of the group, that at this time, it is too premature to promulgate regulations.

2:50 p.m. **Two Stars and a Bridge:** The Task Force members each brainstormed two strategies for outreach and one thing they can do to move UDL forward in their work. They recorded their brainstorming on the provided sheet and submitted it to Lynn Hauss.

2:55 p.m. **Exit Survey and Phone Texting Survey (PollsEverywhere.org)**: Task Force members completed an exit survey and phone text survey about the process used to complete the Task Force's work.

3:00 p.m. **The Task Force Chair thanked the members for their participation and commitment and then adjourned the meeting.**

Appendix H: Task Force Charge

The Task Force shall:

(1) ***study the effectiveness of Universal Design for Learning as a framework*** for guiding curriculum design including goals, teaching methods, instructional materials, and assessments, to:

(i) provide flexibility in the ways:

1. information is presented;

2. students respond or demonstrate knowledge and skills; and

3. students are engaged; and

(ii) reduce barriers in instruction and provide appropriate accommodations, supports, and challenges while maintaining high achievement expectations for all students, including students with disabilities and students with limited English proficiency;

(2) ***study the feasibility of:***

(i) incorporating and applying the principles of Universal Design for Learning into the elementary, secondary, and postsecondary and higher education systems in Maryland with respect to:

1. curriculum development;

2. the evaluation, selection, and design of textbooks and other instructional materials;

3. the purchase and use of technology for instructional purposes;

4. teacher preparation and staff development;

5. the development of classroom, district, and statewide assessments; and

6. State grants; and

(ii) evaluating the implementation of the incorporation and application of Universal Design for Learning principles and the effect on student outcomes;

(3) ***make recommendations relating to the incorporation of the principles*** of Universal Design for Learning by county boards of education in the development of local school system policies and procedures~~;~~ and

(4) ***draft and recommend proposed regulations incorporating the findings*** of the Task Force.

On or before December 31, 2010, **the Task Force shall report its findings** and recommendations to the State Board of Education and, in accordance with § 2–1246 of the State Government Article, the Senate Education, Health, and Environmental Affairs Committee and the Budget and Taxation Committee and the House Committee on Ways and Means and the Health and Government Operations Committee.

COMING OCTOBER 2011
Maryland Learning Links

For more information and resources on UDL, look for the new **Maryland Learning Links** Web site going live October 2011.

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