# Making Every Moment Count: Maximizing Quality Instructional Time

**June 2007**

***A Collaborative Project With:***

*American Association of School Librarians*
*International Reading Association*
*National Association of Secondary School Principals*
*National Council for Geographic Education*
*National Council for the Social Studies*
*National Council of Teachers of Mathematics*
*National Education Association*
*National Geographic Education Foundation*
*National Science Teachers Association*

AMERICAN ASSOCIATION OF SCHOOL LIBRARIANS

*The American Association of School Librarians (AASL), a division of the American Library Association (ALA), provides leadership for the development of dynamic, student-centered school library media programs. These programs help ensure that students master the information literacy skills needed to be discerning consumers and creative producers of information and ideas.* *www.ala.org/ala*

INTERNATIONAL Reading Association

*The International Reading Association is a community of reading professionals with over 350,000 members and affiliates in nearly 100 countries including some 90,000 members in the United States and North American IRA councils. IRA is committed to promoting higher achievement levels in literacy, reading, and communication by continually advancing the quality of instruction worldwide.* *www.reading.org*

NATIONAL ASSOCIATION OF SECONDARY SCHOOL PRINCIPALS
promoting excellence in middle and high school leadership

*In existence since 1916, the National Association of Secondary School Principals (NASSP) is the preeminent organization of and national voice for middle level and high school principals, assistant principals, and aspiring school leaders from across the United States and more than 45 countries around the world. The mission of NASSP is to promote excellence in middle and high school leadership.* *www.principals.org*

THE NATIONAL COUNCIL FOR GEOGRAPHIC EDUCATION -1915-

*The National Council for Geographic Education works to enhance the status and quality of geography teaching and learning. To meet its mission, the NCGE: Promotes the importance and value of geographic education; Enhances the preparation of geographic educators with respect to their knowledge of content, techniques, and learning processes; Facilitates communication among teachers of geography; Encourages and supports research on geographic education; Develops, publishes, and promotes the use of curriculum, resource, and learning materials; Cooperates with other organizations that have similar goals.* *www.ncge.org*

*Founded in 1921, National Council for the Social Studies has grown to be the largest association in the country devoted solely to social studies education. NCSS engages and supports educators in strengthening and advocating social studies. With members in all the 50 states, the District of Columbia, and 69 foreign countries, NCSS serves as an umbrella organization for elementary, secondary, and college teachers of history, geography, economics, political science, sociology, psychology, anthropology, and law-related education. Organized into a network of more than 110 affiliated state, local, and regional councils and associated groups, the NCSS membership represents K-12 classroom teachers, college and university faculty members, curriculum designers and specialists, social studies supervisors, and leaders in the various disciplines that constitute the social studies.* [www.ncss.org](http://www.ncss.org)

*The National Council of Teachers of Mathematics is the public voice of mathematics education, providing vision, leadership, and professional development to support teachers in ensuring mathematics learning of the highest quality for all students.* [www.nctm.org](http://www.nctm.org)

*The National Education Association (NEA), the nation's largest professional employee organization, is committed to advancing the cause of public education. NEA's 3.2 million members work at every level of education-from pre-school to university graduate programs. NEA has affiliate organizations in every state and in more than 14,000 communities across the United States.* [www.nea.org](http://www.nea.org)

NATIONAL GEOGRAPHIC

Education Foundation

*The mission of National Geographic's Education Foundation is to motivate and enable each new generation to become geographically literate. To help achieve that goal, the Education Foundation is working in several key focus areas: Grantmaking, Federal Policy Reform, Public Engagement and Outreach.* *www.nationalgeographic.com/foundation*

NSTA

*Headquartered in Arlington, Virginia, the National Science Teachers Association is a member-driven organization, 55,000-strong. We publish books and journals for science teachers from kindergarten through college. Each year we hold four conferences on science education: three regional events in the fall and a national gathering in the spring. We provide ways for science teachers to connect with one another. We inform Congress and the public on vital questions affecting science literacy and a well-educated workforce.* *www.nsta.org*

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## Making Every Moment Count: Maximizing Quality Instructional Time

A report from The Time, Learning, and Afterschool Taskforce, 2007, states that:

"We can no longer tolerate our traditional beliefs about time and learning. Our highly competitive world demands much more for us all. We must see these challenges as opportunities for improving the lives of our children. We can build on the public sentiment for changes in learning time. We can applaud and utilize existing successes and take research and practice to the next level of action. Most of all, we can, as a society, understand unequivocally that giving all of our children and youth maximum opportunities to succeed is imperative and urgent."

To paraphrase James E. Whaley, the president of the Iselin, N.J.-based Siemens Foundation*, The fact is that a school in one community is not competing against a school in an adjoining state. It's competing against schools half a globe away. Companies are looking for the best talent all over the world, and if they find it, they're going to move…or outsource there.*

**2006 survey of 431 human-resources officials found that:**

- 7 in 10 employers deemed the professionalism and work ethic of high school graduates deficient, as well as their critical-thinking and problem-solving skills.
- 8 in 10 employers found the graduates' written communications wanting.
- 28 % of employers projected that over the next five years their companies would reduce the hiring of new entrants with only a high school diploma.

Source: Are they Really Ready to Work? Employers' Perspectives on the Basic Knowledge And Applied Skills of New Entrants to the 21st Century Workforce www.conference-board.org

We cannot accept poor outcomes for our students. "The nation's steady progress as an economy and as a society will end unless we profoundly change our thinking and policies about when, where, and how children learn and develop," states *A New Day for Learning*, a January, 2007 report from the Charles Stewart Mott Foundation. We must prepare accomplished learners across all grade levels not only for the competition that awaits them but also to improve their problem solving, communication, civic understanding, and social skills, and to build an extensive foundation of knowledge across the disciplines. Since *A Nation At Risk* was published almost 25 years ago there have been many reports and attempted solutions to increase student achievement.

**Sometimes a solution is straightforward and doable:**
**Make every moment of classroom time count through quality academic learning time.**

The International Reading Association convened the "Making Every Moment Count" group to address concerns that NCLB, despite its good intentions of closing the achievement gap, is having the unintended consequence of narrowing the curriculum and making learning relevant to a standardized test rather than to real-world applications that engage students. In their rush to prepare for high-stakes tests, many schools have reduced instructional time in content area subjects. The Center on Education Policy in their March 2006 report, "*From the Capital to the Classroom: Year 4 of the No Child Left Behind Act,*" found that 71 percent of school districts reported having reduced instructional time in at least one other subject to make more time for reading and mathematics, the topics tested for NCLB. One-third of school districts reported reducing time for social studies "somewhat or to a great extent" to make time for reading and math, while 29 percent said they had reduced time for science and 22 percent for art and music. Furthermore, time in schools is not being used efficiently. According to a January 2005 survey of 3000 elementary teachers conducted by NYC's United Federation of Teachers, "Students are losing

upward of two days a week of classroom instruction time because teachers are being forced to spend more and more time on test preparation and increasing amounts of mandatory paperwork."

Narrowing of the curriculum is a serious mistake. A meta-analysis of 35 years of educational research indicates "a guaranteed and viable curriculum… a composite of opportunity to learn and time," in other words a complete curriculum, is the school level factor with the most impact on student achievement according to Robert Marzano, *What Works in Schools*, (2003).The move to a more rigorous curriculum and transparent accountability is important and must be matched with efficient use of time.

Time by itself has little direct impact on performance. "There is little wonder why reforms have focused on school time. Students spend two-thirds of their waking hours away from school, and along with money, time is perhaps the most readily measured and easily understood resource in schools. The logic of time reform is simple: more time in school should result in more learning and better student performance. But this seemingly straightforward calculation is more complex than it appears. Research reveals a complicated relationship between time and learning and suggests that improving the quality of instructional time is at least as important as increasing the quantity of time in school. It also suggests that the addition of high-quality teaching time is of particular benefit to certain groups of students, such as low-income students and others who have little opportunity for learning outside of school." *On the Clock: Rethinking the Way Schools Use Time.* (January, 2007), Education Sector.

Integrating the curriculum is one of the ways to provide students with essential concepts, broad content knowledge, and complex thinking skills in the limited time available for teaching and learning. The content of various disciplines is important for its own sake, but powerful learning happens when students connect their knowledge and skills from one discipline to their learning in others. Integration across disciplines reinforces the basics, enhances creativity in teaching and learning, and provides enhanced relevance to real-world situations.

Each participating association in this document has provided a short paper unique to its content area or mission. In general, the associations promote effective use of classroom time through:

- a comprehensive balanced curriculum that honors the integrity of content disciplines and integrates learning across the disciplines,
- the alignment of a comprehensive balanced curriculum, teaching, and standards,
- a learning environment that fosters collaboration,
- the collaboration of teachers, library media specialists, literacy coaches, administrators, and other members of the educational community,
- professional development to foster the effective use of academic learning time, and
- research to investigate new approaches to using time more effectively.

Integrating instruction and activities across disciplines provides the possibility of addressing more content and using time more effectively. It also provides a different type of balance to the curriculum, a balance between knowledge and skills that are more applicable to a specific content area. It also develops cross-content skills and knowledge.

Content that builds background knowledge and vocabulary encourages students to seek more knowledge and improve their comprehension skills. "There is a well-researched connection between background knowledge and academic achievement," states Robert Marzano in *Building Background Knowledge for Academic Achievement*, (2004). "Studies show a direct correlation between a student's level of background knowledge and academic achievement."

Many options to maximize the use of time are referenced in this paper and include:

- reading and writing within and across curriculum areas;
- extending the school day and year;
- looping - students keep same teacher for multiple years;
- establishing community schools - open early, late, evenings, and weekends;

- increasing parent and community involvement;
- differentiating instruction, and
- utilizing technology to enhance learning opportunities.

Each organization's paper stands on its own, and its inclusion here does not imply endorsement by individual associations of the others' viewpoints. This group of concerned education associations urges educators, policy makers, and others to use these statements to drive discussion of changes within schools and school systems, to create a research agenda, and to disseminate structures and strategies that strengthen student achievement. Please share with us any research, articles, or information that would help all of us maximize the use of time to make every moment count.

NATIONAL ASSOCIATION OF SECONDARY SCHOOL PRINCIPALS

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**Making Every Moment Count**
**View of Effective Use of Time in Secondary Schools**

The effective use of time in middle level and high schools begins with a clear vision for the school that is grounded in a shared moral purpose among members of the school community. An effective school leader collaboratively facilitates the development, articulation, implementation, and stewardship of the school's vision to help insure broad ownership of the vision throughout the school community. This shared ownership promotes alignment of the efforts of teachers, students, parents, and leaders. Alignment of effort contributes to effective and efficient performance.

Decisions that affect the use of time within the school generally fall into one of two categories. The first category of decisions has direct impact on time allocations during the school day and the school year. These decisions provide a direct reflection of the vision put into action. Examples of the time-related decisions are:

*Curriculum, Instruction, and Assessment Decisions:*

- Are master schedules constructed to provide teachers and other instructional staff ample opportunities to work together to plan lessons and teaching strategies and to focus on the learning needs of individual students and to effectively integrate instruction among and between disciplines?
- Does the master schedule consider the relative amounts of time required for students to change classes in a seven-period day versus a four-period day?
- Does the master schedule allow teachers to organize cross-disciplinary and other kinds of teams?
- Is there collaborative as well as individual planning time?
- How are student learning needs given priority over teacher needs in making curriculum and scheduling decisions?
- How many classes are offered each day?
- How can flexible blocks of time for teachers and students fit into the school day?
- How can literacy and numeracy instruction be integrated into all subjects across the curriculum?
- Is looping (teachers work with same students for multiple years) used to provide instructional consistency for students?
- How is technology used as a tool for enhancing instruction, managing instruction, and collecting/analyzing data to improve effectiveness and efficiency?
- What student support structures are provided to ensure the success of all students in a culture of high academic expectations? (including tutoring, academic and personal counseling, and gaining parent support and assistance)
- What structures exist to provide students with enriched or enhanced learning opportunities during holidays, between semesters/terms, summer months, and weekends?

- How are decisions made regarding test preparation activities to maximize alignment of the learning with assessment?
- In what ways do teachers address the needs of every student through differentiation, direct instructions, cooperative learning, and other strategies?

*Personalization Decisions:*

- What structures are provided to facilitate students' successful transitions into the school as well as out of the school to their next learning or life experiences?
- Even though advisories have a cost in terms of academic time, how, if properly structured, might this structure have powerful positive time paybacks if they are successful in establishing supportive relationships between each student and an adult? Research clearly demonstrates the need for such relationships to support high academic standards.
- If advisory is scheduled, when and how often should it occur?
- What professional development strategies are essential to make this use of time an effective use of time?
- How much time is necessary for students to move from class to class?
- How are classrooms arranged and scheduled within the building to minimize the time required for students to move from class to class?
- How do snack breaks or a recess built into a schedule contribute or detract from effective use of time?
- What purposes might the lunch break serve other than providing time for student and teacher nutritional needs to be met?
- What structures and systems most effectively accommodate students' and teachers' needs for restroom breaks without impinging on instruction or human needs?

*Collaborative Leadership Decisions:*

- How do professional development activities promote ownership of the vision for the school to increase efficiently and effectiveness?
- Who participates in the decisions regarding what to teach and what not to teach – are there topics/lessons that are no longer appropriate?
- What is the process for making school-wide and individual teacher pedagogical choices regarding instructional practices, teaching strategies, and selection of instructional material to best fit the content of the curriculum?
- How much input into or control over planning and instructional delivery time is extended to teachers?

Finally, in the category regarding decisions about time use, we must consider the incentives for staff, parents and the community as we seek to make changes in how we allocate time as well as changes in how we use the time we have allocated within the school day and the school term. Having every member of the school community have a clear view of "what's in this for me" reduces resistance and facilitates success – in effect, creating more efficient use of time. Not to consider these incentives wastes time dealing with resistance that normally occurs in response to change.

A second category of time that typically is not within the control of the individual school includes the length of the school day, school year, and the scheduling of various breaks and holidays that occur during the school year; however, schools should have a voice in the decisions about how to use the time allocations that are made by school boards, and other governing bodies. Examples of ways to create more time are:

- Lengthen the school day
- Extend the school year (add days for instruction)
- Year-round schools
- Summer school
- Flexible scheduling
- Combinations of any of the above strategies.
- Convert or establish community schools—programming early morning, evenings, night, and weekends
- Convert to or establish the school as a community center/building in which a wide variety of programs and services are provided to students, parents, and the wider school community.

When school leaders have a choice about how to use allocated time, decisions should be directed to support the vision and meeting the shared purpose of the school. Options available in the face of such choices are teaming, flexible blocks, and collaborative planning time, and professional development to insure everyone's capacity to promote student success.

One critical role of the school leader is to ensure that the time is appropriately used for the purposes intended within the vision and shared purpose of the school community. Leaders must establish and maintain clear expectations for themselves and all staff members to ensure a strong alignment of efforts and the use of time with the vision. As NASSP has published in ***Breaking Ranks in the Middle™: Strategies for Leading Middle Level Reform***, "Entrust teachers with the responsibility of implementing schedules that are flexible enough to accommodate teaching strategies consistent with the ways students learn most effectively and that allow for effective teacher teaming, common planning time, and other lesson planning."

*Time in school can be divided into four distinct types: Allocated school time, Allocated class time, Instructional time, and Academic learning time. Academic learning time is defined as that time when students are engaged in productive learning. It is not passing time, direction receiving time, or many other legitimate uses of time in school. From Education Sector Reports; January 2007

**Practices to Creatively Use Existing Time**

**The ideas below are taken from *Breaking Ranks in the Middle™: Strategies for Leading Middle Level Reform* pages 25-27. They were provided by the following members of the Breaking Ranks in the Middle National Commission: Michael Curran, August Frattali, Tim Hadden, Tom Leyden, Michael Madison, Carol Ann Tomlinson, Jerry Valentine, and Karen Williams.**

- Turn regularly scheduled faculty meetings into professional learning opportunities in which teachers study data, address challenges, design interventions, and then study best practices so they can effectively apply the interventions.
- Use a quality student information database that allows for efficient entry of student data. A database is particularly helpful for saving teacher time required to create various reports.
- Create a school lesson bank and organize it by subject, content, and team. With such a bank, for example, the English teacher can see how the math teacher in one team taught a lesson and build on or use that same approach/lesson. Even in schools where coordination among team members is strong, coordination across teams by content may not be so good. Stipulate that only high-quality lessons that have proven effective are added to the lesson bank.
- Hire substitutes for abbreviated time slots (an occasional day) to free up one or more teachers to coordinate or to meet as a group to design curriculum and instruction.

- Schedule regular early dismissal days so teachers can meet for professional development.
- Use parent volunteers, retired community participants, older students, or others to help with some forms of grading to relieve the teacher of those tasks.
- Investigate electronic phone messaging systems that contact parents with messages when students are absent or that ask parents to contact the teacher at a specific time to talk about a student.
- Encourage one member of each teaching team to manage and post information for teachers on the team. This will increase contact with parents and reduce the time needed by each teacher to produce copies and write specific information.
- Use parent volunteers, older students, and so on to produce manipulatives, copies, laminates, and other class materials.
- Implement a school wide discipline plan designed not only to be effective but to help teachers save time.
- Dedicate a one-hour after-school session each month to staff development. These sessions are most productive when an administrator or member of the teaching staff is the "expert" presenting the information. Allow teachers to suggest the areas of focus so they see the value in the use of their time and the resourcefulness of their colleagues.
- Use a substitute in a classroom one day a month and free a member of the staff to visit other classrooms in your school or district, or attend a local seminar. This teacher can then share the learning experience in the form of a "classroom spotlight" at the next general staff meeting.
- Invite the district instructional specialist to provide development in individual classrooms by team teaching or coaching.
- Ask teachers to come in 30 minutes early on certain days to meet in their subject or grade-level teams. When the students arrive, the administrators can take them to the gym for a half-hour assembly (e.g., to honor student achievements). This gives the teachers an hour to study best practices, examine data, and create action plans.
- Hold an annual "Parent as Teacher Day," during which parents volunteer to teach in one of their children's classes for the entire day. (Some working moms and dads are given the time as a service day or volunteer time from their work place.) The lesson taught by the parent must be tied specifically to the subject area; in many cases, you will find parents who are practitioners in science, math, technology, or other related fields. While the parents are teaching, the faculty can meet as a whole, in teams, or by departments for in-depth training. Be sure to follow school and district guidelines regarding criminal history checks and other policies for volunteers.
- Use building or district administrators to cover classes so a teacher can meet with or observe a master teacher. You can also hire a substitute teacher to cover the classes of a novice teacher and master teacher. During the day the substitute will switch back and forth, covering the two teachers' classes, so the master teacher can observe the novice teacher teach, discuss the observation, have the novice teacher observe the master teacher teach, and have a final collegial discussion about areas of strength and those in need of improvement. This is an inexpensive way to give time for mentoring and collegial coaching. It is also nonthreatening, because it is tied to professional growth and development rather than to evaluation and appraisal.
- Create opportunities for central office staff to regularly substitute. For example, if six science teachers from two middle schools need to get together to work on differentiating science labs, six central office leaders could teach their classes on two successive Friday afternoons. It can be a very important experience for the administrators— and a huge sign of confidence, support, and investment in the eyes of the teachers.
- Provide mini-sessions with in-school experts during faculty meeting time (e.g., classroom management for new teachers, using technology to differentiate instruction).
- Allow teachers to apply in groups or teams of three to four for in-school grants that will give them released time to work on areas in which they want to develop additional understanding and skill. Hire substitutes to cover for the teachers one day every two weeks, generally for about two months, to give

the teachers time to collaborate. The sessions should be supported by someone in the district who can guide the work of the teachers.

- Provide incentives for key teachers to work during the summer to develop curriculum that can be used by many other teachers at the same grade or subject level. District curriculum leaders should guide the sessions. The curriculum and supporting materials then become the focus of school and/or district staff development, so that a lot of time is saved by not having every teacher reinvent the wheel. The quality of the curriculum is also likely to be much more substantial. It is important to provide staff development in the appropriate use of the curriculum.
- Pay expert teachers during the summer to develop "curriculum tubs" that include well-developed concept-based lessons in key content areas. Place the materials in plastic tubs in a central location, so they can be checked out by any teacher who teaches those lessons. Each tub should contain key learning goals, alignment with standards, a thorough explanation of the lesson sequence, necessary pre-assessment and formative assessment materials, examples of how to differentiate the lesson for students whose assessment results indicate a need for support or extension, and materials a teacher would need to teach the lesson. Again, ensure that the teachers who create the materials have expert guidance from curriculum leaders in the district.
- Hire substitutes for a small group of teachers who are willing to be pioneers in differentiation (or any other topic), so that the teachers can have a one-day retreat early in the year. The retreat should be held away from the interruptions at school (possibly at someone's home) and district or school leaders should be present. Participants can share resources and discuss the need for and implications of differentiated instruction in their schools. Teachers should conclude the retreat by setting goals for themselves as individuals and as a group in becoming more confident practitioners of differentiation and supporting others in doing so. To support this effort, the group could include an agreement to meet one afternoon every other week for three months and one afternoon a week for the remainder of the year. The school should buy or have the cafeteria prepare a light meal for the teachers on retreat. If this is done well, the first group can become the catalyst for similar groups.
- Hire or appoint a testing coordinator or data specialist to help disaggregate data and provide teacher leaders with vital information. The existence of a database alleviates the need for instructional staff to spend countless hours collecting and organizing data.
- Start school late one day each month for students (e.g., Wednesday morning), and provide development during that time. If the lost minutes are an issue, extend the school day by one or two minutes.
- Have the principal do lunch duty every day so teachers have free time to work with colleagues and/or students. Provide parent lunchroom monitors (paid or volunteer).
- Convene two staff meetings per month: one for the principal; one for a team, grade-level, or curriculum meeting.
- Combine two monthly meetings into one longer session (e.g., 4:00–7:00 p.m.). Provide food. The staff may appreciate having one meeting instead of two, and you can get more accomplished during this longer time period.
- Develop a master schedule that creates daily common planning time for teams and grade-level departments. This creates an additional 45 minutes per day or more of common planning time (above and beyond individual planning time) to discuss curricular and student issues.
- Schedule elective lunch presentations that allow faculty to report on personal successes, progress in their graduate courses, successful methodologies incorporated in their classrooms, techniques for addressing parent and community issues, and so on.

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AMERICAN ASSOCIATION OF SCHOOL LIBRARIANS

# Making Every Moment Count

School librarians, working in successful programs, find power and purpose by making effective use of instructional time through a comprehensive, integrated curriculum. The basis for this empowerment can be summed up by referring to Chapter 1, "The Vision," of *Information Power: Building Partnerships for Learning*. Copyright © 1998 American Library Association and Association for Educational Communications and Technology, which states: "Although changes in society, education, and technology have transformed many of the challenges facing library media programs during the past decade, the mission itself remains the same. Today, this mission focuses on offering programs and services that are centered on information literacy and that are designed around active, authentic student learning as described in the information literacy standards for student learning." The proof of our dedication to this vision can be found in numerous research studies conducted in the states of Alaska, Colorado, Iowa, Kentucky, Massachusetts, Michigan, New Mexico, Oregon, Pennsylvania, and Texas that have shown a high correlation between exemplary school library programs led by a certified school librarian and student achievement on state standardized tests. Our inclusion in NCREL's (North Central Regional Educational Laboratory) EnGauge document, 21st Century Skills: Digital Literacies for a Digital Age, provides a forum for the School Library Media Specialist (SLMS) to promote literacies including Reading Literacy, Technology Literacy, Media Literacy and Information Literacy, which are skills taught and supported by school library programs and personnel.

Incorporating this vision in our curriculum applications can be exemplified when:

- Kindergarten students are introduced to colorful imaginative literature which complements the concepts currently taught in their classroom and engage in oral language activities as they share books or respond to a story. Embedded in the lesson is a focus on author placement for fiction in the library.
- Elementary students use simple information problem-solving models and graphic organizers as they collaboratively study local wildlife, locating nonfiction materials by reviewing Dewey principals. Students use indexes, tables of contents, glossaries and text structures to locate information in both print and non-print resources.
- Middle grade students become immersed in across the curriculum cultural celebrations, reviewing maps, globes and databases provided in the library media center. Students use a multi-step problem-solving model and their knowledge of text structures to examine resources to locate relevant information and determine accuracy and potential biases.
- High school students locate and assess controversial issues in preparation for social study debates, using a balance of local, national and international resources. SLMS and classroom teachers collaboratively assist students in formulating thesis statements and identifying essential or foundational questions to guide their increasingly sophisticated and complex research. Student interactions involve a review of assessment strategies with the SLMS.

Technology is integrated at each level for accessing, organizing, producing and sharing information and knowledge. In each instance, the SLMS provides intellectual access to information through learning activities that are integrated into the curriculum.

**New and Expanded Roles**

The expectations for each SLMS to instruct students and provide the school community with on going experiences in accessing, evaluating, and utilizing information sources has expanded from maintaining a place to providing a portal. Past experiences and educational focus revolved around the organization of a facility, and instruction for optimal use of those resources. The new challenge, to help all students achieve information literacy by developing effective cognitive strategies, now involves recognition of local resources plus the introduction of new formats and the navigation of global structures for information in every content area. In this 'Digital Age', the process of information retrieval also includes efforts to accommodate a wide range of differences as well as represent a diversity of experiences, opinions, and social and cultural perspectives. The ability to integrate all of these components into strategically placed moments of discovery through practical application represents a complicated mix of collaborative instruction and design.

**Program Design**

The successful School Librarian Media Program depends on collaboration with teachers for optimal instructional design to improve student achievement. Equally powerful elements include adequate staffing and student access to technological resources. ALA certifications for the SLMS, continuing professional development and the availability of support staff were important measures for success during the Lance studies in various states. Following the results of this research, effective program design includes:

- ALA certified, full-time SLMS
- Support staff for clerical tasks
- Flexible scheduling for teacher and SLMS
- Integrated 21st century Information Literacy Skills
- Healthy resource budgets
- Adequate technologies, training and support

**Collaboration**

Successful School Library Media Centers provide active, authentic student learning by collaboratively planning learning activities that are integrated into the curriculum. By using a team approach to pinpoint appropriate applications and methodologies, students are given the most effective instruction. Such opportunities exist when teachers and the SLMS cooperatively review and expand curricula. Hallmarks of an effective instructional community include:

- Cooperative Teaching Opportunities
- Information Literacy Skill Integration
- Collaborative In-Service Training
- Appropriate Information Technology Integration Strategies
- SLMS service on Curriculum and Standards Committees

**Serving Individual Students**

It is within the Library Media Center that effective use of instructional time can be most observable. The process of recognizing a logical organization of literature and nonfiction materials begins with the simple act of enjoying pictures and text. The examples of kindergarten, elementary, middle and high school applications described above contain "life long learning" elements that encourage students to become discriminating consumers and skilled producers of information.

- Students are introduced to content-rich, complementary materials
- Each child has the opportunity to self-select resources
- Every class member participates in research strategy reviews or enrichment
- Individualized instruction occurs, as needed, at the most effective level
- Large group events encourage strategic, peer-to-peer, interactive, research analysis

**Meeting the Challenge**

The No Child Left Behind legislation regarding "Reading First" states that school districts provide "instruction based on scientifically based reading research that includes the essential components of reading instruction" will require a library professional whose job it is to keep current with new materials for children and make appropriate selections based on critical reviews by previewing for age appropriateness and fitting the curriculum needs and interests of students. Integral to that instructional plan will be the ability to help all students achieve information literacy by developing effective cognitive strategies for selecting, retrieving, analyzing, evaluating, synthesizing, creating, and communicating information in all formats and in all content areas of the curriculum

**Resources:**

*Information Power: Building Partnerships for Learning*. Copyright © 1998 American Library Association and Association for Educational Communications and Technology.

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INTERNATIONAL Reading Association

## Making Every Moment Count

School leaders are not wrong to put an added emphasis on reading instruction. In the most immediate sense, students learn more when hands-on learning is combined with text-based learning, provided students comprehend what they are reading. Over the longer term literacy expectations for students, and the adults they will become, are higher than in the past and unlikely to diminish, so reading achievement must be effectively supported. Already students routinely rely on reading and writing skills for their daily activities, both inside the classroom and out. Their future employers, instructors, and community leaders are counting on them to understand and thoughtfully use complex and diverse texts, assess the credibility of sources and substance critically, and apply knowledge gained by reading to their personal, professional, and civic lives.

What concerns the International Reading Association about efforts to improve reading achievement is that many schools have traded off instructional attention to significant subject areas, like social studies, science and the arts, in order to gain time for reading drills and test preparation. Improving reading does not need to be accomplished at the expense of a well-balanced curriculum that exposes students to a broad range of knowledge and excites their interest in learning. What can schools do to promote both reading achievement and learning? Fortunately, literacy development thrives when it is integrated into content area instruction, and content mastery improves as students become better readers. Schools simply need to ensure effective use of instructional time.

By successfully integrating literacy instruction across curriculum areas, schools can gain the quality instructional time needed for student achievement. "Content area reading is a matter of good teaching. When the invisible aspects of content area reading are operating in the classroom, the teacher is able to integrate reading and subject matter learning in seamless fashion…"(Vacca, 2002). This way, students gain a complete education, one that teaches essential concepts, knowledge, and thinking ability.

To foster quality use of teaching time, IRA recommends:

**Aligning teaching to high-level curriculum and standards.** Integrating literacy instruction with content area study can streamline instruction by allowing teachers to address literacy standards along with specific content area standards within particular lessons. "Teaching students the process of reading informational text takes a back seat to teaching content. Many experts feel that the standards movement has exacerbated this situation through its emphasis on content coverage and testing. Despite its challenges, such teaching can actually streamline instruction by allowing teachers to address literacy standards along with specific content area standards within particular lessons, thereby enhancing literacy along with content learning." (Moss, 2005).

**Integrating the learning of reading with social studies, science, art, languages, music, and math.** Students must draw on their prior knowledge, connect what they know to new concepts, synthesize information, and develop the key understandings that are central to any content area in order for learning to occur. By exposing students to diverse and complex text, readily found in nonfiction books,

magazines, textbooks, and online, and demonstrating the application of appropriate comprehension strategies, learning can be enhanced and reading achievement improved.

**Increasing collaborative teacher planning time across subjects.** Studies show increased learning occurs when teachers reinforce concepts and facts across the curriculum. A reading professional can support colleagues by assisting them in identifying and incorporating best practice in literacy teaching and learning across subject areas.

**Inspiring learning by teaching content-rich, high-level subject matter.** Students must be actively engaged in order to construct knowledge. Students read in order to access, interpret, understand, and use information supplied through words, numbers, and images, in print or digital form. "Teachers and researchers have shown that long-term engaged reading can be increased with integrated reading instruction. When students are provided opportunities to connect reading and writing activities to integrated language arts, their engaged reading increases and reading achievement improves... Further, when reading and writing are also linked to content learning in social studies and science, engaged reading is likely to be fostered." (Guthrie, 2002)

**Requiring strong leadership from principals.** Administrators must be strong instructional leaders who understand the components of successful reading instruction and the value of a balanced curriculum. They must analyze data, make decisions for their school's curriculum, provide support and time for teachers to collaborate, and supervise professional development to facilitate teaching reading in the content areas.

Quality instruction is the key to student achievement. Every student can gain a relevant, coherent, balanced and rigorous education when we make every classroom minute count.

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# Making Every Moment Count

**What We Know:**

- 33% of school districts surveyed reduced time for social studies "somewhat or to a great extent." (Center on Education Policy, 2006)[1]
- 13% of instructional time is devoted to social studies in elementary classrooms. (National Institute of Child Health and Human Development study of 2500 students in 1st, 3rd and 5th grades, released on March 28, 2007) [2]
- The literature suggests that "teaching comprehension in the context of specific academic areas--for example, social studies--can be effective." (National Reading Panel, April, 2000)[3]

**What can be done to assure that students receive instruction in social studies that provides them with the content and skills for effective citizenship?**

The Partnership for 21st Century Skills is one of many organizations that have developed a unified, collective vision for 21st century learning. Its vision for 21st century learning includes emerging content areas not typically or currently addressed in schools at this time, such as global awareness, and economic and civic literacy. While few deny the importance of these content areas, the trend is for students, particularly minority children, to have little exposure to social studies content in grades K-5, and then be expected to acquire it, and higher level concepts, beginning in middle school.[4] Time for teaching the core concepts in the disciplines of social studies must be allotted, beginning pre-K and advancing through grades 12 and beyond. E.D Hirsch, among others, inquires:
"If we ask students to repeatedly endure lessons and exercises on 'main idea,' and 'prediction,' and 'inferencing,' instead of using that time to familiarize them with important content, are we using the time as well as we could?"[5] He suggests that reading achievement will not advance significantly until schools recognize and act on the fact that it depends on the possession of a broad but definable range of diverse knowledge, including social studies. The Association for Supervision and Curriculum Development (ASCD) recently released a report, *The Learning Pact Redefined: A Call to Action,* calling for access to rigorous social studies programs, as well as adequate local, state, and federal support and funding, and professional development to assure their implementation.[6] As is sometimes the case, research and rhetoric have yet to be reflected in reality.

Integration is sometimes viewed by curriculum leaders, school principals and others as a means of using time wisely to assure that social studies is taught and learned. In order for integration to work, there must be an accepted definition, such as that provided by W.C. Parker: "…a curriculum approach that purposefully draws together knowledge, perspectives, and methods of inquiry from more than one discipline to develop a more powerful understanding of a central idea, issue, person, or event."[7] Then, there must be agreement on two core questions: What content can best be taught by discipline, and what can best be taught by involving more than one discipline? Should social studies content be integrated into

other content areas, or should other content areas be integrated into social studies? A recent report from the Fordham Foundation insists that good reading instruction be integrated into the content areas, including social studies.[8] Others continue to urge that social studies become part of reading and math in order to meet the requirements of state mandated standards in each area. There is a dearth of research to indicate that this approach has a positive impact on student achievement.

While there is little research to suggest when and how integration should occur, there is agreement that knowledge of the disciplines and content is essential if integration is to be successful. Research conducted more than a decade ago warns of activities that are irrelevant to learning social studies (e.g., using social studies content to focus on pluralizing nouns), that are so time-consuming as to be questionable (e.g., artistic or construction work), or that distort social studies content (e.g., five steps to building a log cabin).[9] It must also be noted that the current standards movement is antithetical to effective integration, with an emphasis on discipline-based testing and disregard for its potential to advance the rigor and relevance of curriculum for students. With the recent calls for national standards and national testing, there is little likelihood that this trend will be reversed.

Do models of integrative excellence exist? Absolutely! An elementary unit on landforms can include geologic concepts in science, as well as geographic characteristics of place (e.g., physical features, soil, minerals, vegetation, or animal life). Middle school teachers can incorporate appropriate fiction and non-fiction selections during the study of the elements of a specific culture, including government, language, religion, arts, etc. High school teachers can incorporate advanced reading skills and complex texts, as recommended by the educational and testing organization ACT.[10] Such successful integration requires professional development that emphasizes how to integrate, as well as time for preparation and evaluation. The move toward establishing professional learning communities (PLCs) of content teachers, predominantly at the high school level, can provide one means whereby integration can be planned, implemented, and assessed effectively. However, in this era of over-accountability, the time spent by teachers in PLCs is often devoted to other pursuits.

Whether through integration or discipline-based instruction, social studies content continues to provide the foundation for citizenship in this nation. While Congressional, administration and think tank orations and publications emphasize student preparation for college and/or career, preparing students for their roles as citizens must not be neglected. As NCSS past President Margit McGuire wrote recently, "If our young people…do not understand or value our democracy and their role in such a society and do not believe that they can make a difference, why does school matter?"[11]

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## Making Every Moment Count with Interdisciplinary Geography Learning

For several decades, National Council for Geographic Education (NCGE), National Geographic Society, and other organizations of geography professionals have worked to expand geography education in K-12 classrooms in the United States. During this time, national standards were developed and subsequently adopted by most states. Since its inception in 1988, the National Geographic Education Foundation (NGEF) has worked in programmatic partnership with university-based "Geographic Alliances"—state-wide partnerships between academic professors and K-12 teachers— to provide professional development, networking, and more. This community of educators embraces the need for engaging students in learning about their world, a world that reaches beyond students' neighborhood and nation to global scales. With events such as Hurricane Katrina, the South Asian tsunami, the events of September 11, 2001, as well as issues of global climate change and changing economic opportunities that will impact students' careers, it is more important than ever for students to be able to make sense of what is happening around them. In order to be prepared for both work and citizenship, a student's education in the 21st century must include fundamental understanding of both cultural and physical aspects of the planet.

Today, No Child Left Behind defines geography as a core subject, but without emphasis on geography in standardized testing, time devoted to teaching and learning geography -- even as part of social studies class -- has waned. Educators are rising to the challenge in creating lessons that integrate core subjects to maximize use of time in the classroom.

### Research on Reading, Math, and Geography

With the current emphasis on reading and math in the state assessments, educators are often expected to devote more time to the teaching of these two subjects. Two recent studies have found that integration of geography with skill development in reading and in math helps students to improve in skills in each of these core subjects. The GeoLiteracy program, developed through a grant in 2000 to the Arizona Geographic Alliance at Arizona State University, encompasses a teacher-created K–8 curriculum integrating reading, writing, and geography as described in state content standards for those subjects. As part of evaluation of the program in classrooms in Arizona and Michigan, students in grades 3 through 7 who were instructed using GeoLiteracy lessons were found to have statistically significant gains in reading comprehension compared to students who did not use GeoLiteracy.[1]

Similarly, math achievement scores were substantially higher for those who learned through the GeoMath program -- integrating geography content with mathematics concepts and skills -- instead of the control group. The analysis showed statistically significant improvement in student retention of mathematics learning. According to Dorn et al, "These results were especially encouraging given that GeoMath piloting students were slightly more disadvantaged in English skills and derive more heavily from rural settings. We speculate that the performance difference between control group and GeoMath groups might be from meaningful connections made in GeoMath lessons between particular math skills

and authentic geographic context. In other words, GeoMath lessons may have provided a 'change of pace' of authentic context that helped increase student interest and hence retention of skills."[2]

Any subject can be taught with a geographic perspective to maximize classroom learning. For example,

- In reading, both non-fiction and fiction texts can expand student's understanding of their world, whether they are determining cause and effect of human impact on an ecosystem or inferring cultural nuances through world literature.
- In mathematics, interpretation of graphs, charts, and numbers reflecting statistics about people, places, animals, etc. can build content knowledge; for example, comparing percentages for households having televisions in various countries can help students interpret data in ways that give insight into culture and economics.
- Earth science has even more meaning when students study real earthquake and volcanic activity data using geospatial mapping technology; in life science, every species has a geographic realm where it resides.
- In foreign language, reviewing web sites in another language with news from different countries can help to put peoples and cultures on the map for students.

Teaching with real-world content as part of an interdisciplinary approach can encourage inquiry about fundamental concepts that impact students' lives, inspiring more high-level thinking. Students might ask the following types of questions, leading to further reading, research, and synthesis of information:

- Why is the life of the female character living in Saudi Arabia so different from my own?
- If rainforests are so important to the world's climate, why are people cutting them down so rapidly?
- In which parts of the world are tsunamis most likely to occur?

Furthermore, the geographic skills -- asking geographic questions, acquiring geographic information, organizing the information, analyzing the information, and answering geographic questions -- parallel processes employed in reading, research, writing, and scientific inquiry. Engaging students in these processes allows students to explore issues further in depth.

**Public Awareness and Policy Efforts**

Recognizing the need for broad public awareness as well as federal government support of geography education, National Geographic Education Foundation has recently undertaken two new initiatives. In cooperation with National Council for Geographic Education and the State Geographic Alliances, the "My Wonderful World" campaign was launched in May 2006 to motivate parents and educators to increase geographic learning at home, in school, and in communities. This public awareness campaign uses web media (www.MyWonderfulWorld.org), public service announcements on radio and television, and grassroots activity to promote support and engagement in learning about the world from local to global scales. As part of this campaign, educators are encouraged to infuse teaching of geography skills and concepts into the teaching of all subjects.

Additionally, Congress has recently introduced two bills, both titled "Teaching Geography is Fundamental," (H.R. 1228 and S. 727). The goal is to authorize funding for national and state efforts in support of geography education. Geography is one of nine core subjects cited under No Child Left behind, but it is the only one that does not receive federal funding.

NCGE and NGEF support strong geography education through stand-alone geography courses as well infusion of authentic geography learning into core subjects. Students will better prepare for work and citizenship with a strong grounding in both core academic skills and fundamental knowledge and understanding of people, places, and environments.

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NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS

# *Math Takes Time: A Position of the National Council of Teachers of Mathematics*

**Question:** How much time should schools allocate for teaching mathematics?

## NCTM Position

To learn the mathematics required for today's world, students need adequate time to study and learn mathematics in school. Every student should study mathematics every year through high school, progressing to a more advanced level each year. All students need to be engaged in learning challenging mathematics for at least one hour a day at the elementary, middle school, and high school levels.

Today's world demands a mathematically literate citizenry, well prepared for ever-changing technology and growing global competition, and led by a new generation of mathematics and science professionals. More challenging mathematical content is required at every grade level. Class time should be planned effectively to engage all students. However, learning important mathematics cannot be rushed; students need time to process what they are learning (Pezdek and Micheli 1982).

At every grade level, students must have time to become engaged in mathematics that promotes reasoning and fosters communication between teachers and students and among students. Students need time to develop and practice skills and procedures for solving a wide range of problems. Most important, developing the concepts and skills that ensure success in school and beyond requires a substantial investment of time. *Students at every level should have at least one hour of mathematics instruction each day.*

An hour of mathematics instruction each day gives students 50 percent more time with mathematics than 40-minute periods do. Students who have an hour of mathematics instruction each day receive nearly 180 hours of instruction a year.

It is essential that middle school not be a time of short-duration mathematics classes. What was once considered high school mathematics content is increasingly found in middle school, where courses in algebra and geometry are now commonplace. In addition, any version of semester block scheduling at the middle school or high school level should be implemented with great care. Students who go without studying mathematics for a semester or more may lose ground and be at a disadvantage in high school or college study.

Evidence supports the enrollment of high school students in a mathematics course every year, continuing beyond the equivalent of a second year of algebra and a year of geometry. Classes designed solely to help

students pass state assessments or remediate deficiencies should supplement students' primary mathematics classes, not replace them.

Finally, at all levels of instruction, interruptions to classes should be held to a minimum. Most important, learning experiences should be carefully planned to engage students in meaningful mathematics learning each day of the school year.

(August 2006)

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NCTM position statements define a particular problem, issue, or need and describe its relevance to mathematics education. Each statement defines the Council's position or answers a question central to the issue. The NCTM Board of Directors approves position statements.


## Making Every Moment Count

NEA advocates creating great public schools that prepare every student to succeed in a diverse and interdependent world. Accomplishing this goal requires access to a complete curriculum for all students and the resources and policies to accomplish that goal. NEA also promotes policies and resources to support great public schools for the 21st century. The wise use of instructional time is one means of achieving access to learning for all students. Instructional approaches that combine learning across content areas can be a means of delivering a broader curriculum to students.

An integrated curriculum can help all students develop their potential, independence, and character as it requires them to deepen understandings and make connections among content areas. By its nature, a curriculum where time is used wisely to teach and learn about the connectedness and complexity of the world offers opportunities for critical thinking, problem solving and unique applications of knowledge and skills. It can provide opportunities for students to develop the skills to be informed and engaged members of our democratic society.

Educators need the freedom and flexibility to allot time and plan instruction to meet the needs of all students, especially in making connections for learning across contents. Common planning time is essential to the implementation of interdisciplinary curriculum. The critical resource of common planning should not, however, be instituted or mandated if it extends teachers' work time without compensation. NEA supports policies that will provide the time and flexibility for teachers to plan and implement interdisciplinary curriculum.

## Making Every Moment Count: Science

There are two perspectives on integration of science and other subject matter. One is conceptual and topical integration. Examples of this include such things as studying geography while looking at landforms or focusing on political and civic issues when studying climate or including the history of scientific ideas in studies of history. These connections allow students to better understand the role of science in human cultures and the natural links across domains. They are important but need to be done with great care so that rigorous conceptual development in one domain is not lost in the attempt to make the connections. The second perspective is on the integration of skills - mathematics, literacy, and inquiry – in the study of science. These skill based connections must be made not just to make every moment count but for science education to be effective as they are critical to doing and thinking about science.

In this brief essay the focus is on the connection between science and literacy which is the subject of much attention in the science education community. This attention comes in large part from three sources. One is the growing body of research and practice in science teaching and learning that suggests that language is essential for effective science learning—for clarity of thought, description, discussion, and argument, as well as for recording and presentation of results. In addition to engaging in direct investigation of scientific phenomena, students make meaning by writing science, talking science, and reading science. At the root of deep understanding of science concepts and scientific processes is the ability to use language to form ideas, theorize, reflect, share and debate with others, and ultimately, communicate clearly to different audiences.

The second source is a related body of research and practice from the literacy community that suggests that students improve their skills in many areas of literacy when those skills are practiced in engaging contexts. One such context is inquiry-based science, where instruction includes direct experience, is explicit, focuses on substance rather than on form, and offers sufficient opportunity to engage in meaningful use of language. This context can be particularly important for second-language learners and students from diverse languages and cultures.

And, finally, the attention to the science and literacy connection is also a result of the current emphasis on literacy and mathematics in the No Child Left Behind (NCLB) legislation, with the resulting lack of focus on science instruction. While this may change somewhat as science becomes a tested subject area, the primacy of literacy and mathematics at the K–8 level is likely to remain, and thus this statement requires a cautionary note. If we are not careful and clear, the current privileging of literacy instruction over all other areas of learning can lead to connections being forged between literacy and science in which reading and writing instruction substitute for, rather than add to, direct experience and scientific reasoning.

The science education community is to a great extent unified in its view of the nature of science inquiry, the vision of science teaching, and learning that emerges from it, and the need for science instruction that is based in inquiry. Included in this is the assumption that the link between science and literacy is an authentic characteristic of science and that appropriate use of literacy in science is needed to achieve deeper understanding of science and the ability to reason scientifically.

The appropriate use of literacy in science encompasses all three language modalities: oral discourse, writing, and reading. Oral discourse is more and more recognized as important to scientific thinking and as an integral part of both writing and reading science, but often receives less attention in the science-literacy connection, a weakness that must be recognized and addressed. Science notebooks are becoming more and more prevalent in inquiry-based science instruction, reflecting the growing awareness of their role not only in the recording of data but in the development of scientific reasoning and creative thinking. Students also write about science in more formal ways often in the form of a "research report." Writing from direct experience is less frequent yet provides an important opportunity for students to communicate their own work. Reading in science is more commonplace but the focus on textbooks has limited the potential for students both in their learning of science but also in their abilities to read a range of non-fiction text. Books in science can play an important role in inquiry-based science programs if students are doing that reading using the questioning and problem-solving approaches that inquiry and reading-comprehension strategies share.

While the integration of science and literacy seems in many ways obvious, there are many questions to be raised: How can these ideas fit or not fit with the practice and policy worlds? What are the similarities and especially the differences among science inquiry and literacy thinking skills? How can one approach be transformed to meet the realities of another community? These kinds of questions and their answers related to mathematical skills have long been considered important in science instruction but explicit connections between science and literacy has had less focused. For this reason the National Science Teachers Association (NSTA), with funding and support from the National Science Foundation (NSF) and with advice from a number of experts in the field, designed and implemented two conferences that brought over 400 people together at an NSTA area convention in Seattle (September 2004) and another 350 people at the national convention in Dallas (April 2005). The results of the conference are published by NSTA in the book, *Linking Science & Literacy in the K-8 Classroom*. While the focus of the book is K-8, the implications from the research and practice highlighted extend into high school and beyond. Sixteen chapters written by prominent researchers and professional development experts make the connection between science and literacy from the perspectives of the classroom, district administrators, and the research community. Nine accompanying "case stories" show how teachers actually made the connections.

And a final note: Of great importance in the thinking about integration of domains overall and making every moment count is the nature of the dialogue and the range of voices that need to be heard. The book, mentioned above, exemplifies the perspective of NSTA that that range includes the research and development communities and the practice communities so that we make stronger connections not only between disciplines but also between visions, research, and reality.

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