



North Dakota Department of Public Instruction
Title I and Special Education

TEAM NEWS

(Together Everyone Achieves More)

April 2012

Dr. Wayne G. Sanstead, State Superintendent, 600 E. Boulevard Ave., Dept. 201, Bismarck, ND 58505-0440

In this issue...

- Preliminary 2011-2012 AYP Report To Be Posted This Week
- Director's Report
- 2012 Title I/Special Education Summer Reading Training
- Title I Spring Mailing
- 2012 Fall Conference Math Make and Take-It Session – Looking for Presenters
- May Title I WebEx Training
- New Title I Fast Facts Added to Series
- Outstanding Title I Educator Nominations
- Special Education Student Exits in TIENET
- N&D Nugget
- Title I-End-of-the-Year Reminders
- Still No Title I Allocations
- Information on Coding for Title I
- Title I School Improvement Project
- IDEA Update
- Monthly Featured Articles
 - ✦ Secondary Transition New You Can Use
 - ✦ Interactive Media: Preschool - Elementary Best Practices and Resources Available
 - ✦ STEM Research Brief
- Upcoming Events
- Title I To Do List
- Title I and Special Education Staff

Preliminary 2011-2012 AYP Reports To Be Posted This Week!

The preliminary 2011-2012 school and district Adequate Yearly Progress (AYP) reports have been generated and are expected to be posted this week on the department's secure State Automated Reporting System (STARS) under the 2011-2012 AYP Report at

<https://secure.apps.state.nd.us/dpi/stars/Login.aspx>, under "Other".

If you do not have authority to access this report, contact your district administrator. It is imperative that school personnel review the preliminary school and district AYP reports and verify their accuracy prior to the department's release of the final AYP reports in May.

The department has prepared the 2011-2012 AYP guidance, which presents an overview of the AYP determination process. You can access this guide on the department's website at www.dpi.state.nd.us/testing/account/guide_AYP.pdf. This guidance also specifies any changes that have occurred in this year's AYP reports, including a change in this year's graduation rate goal that was required by federal law.

Once the final school and district AYP information has been posted to the department's website, the Title I office will send individual letters to all schools and districts identified for program improvement. This letter will inform schools and districts of their status and responsibilities while in program improvement. In addition, schools and districts that have not been identified for program improvement, but failed to make AYP for one year will also receive a letter. Title I will then issue a statewide news release to inform the public about the program improvement status of schools and districts for the 2012-2013 school year.

Federal law requires all public schools and districts to disseminate AYP information to parents. **After both the school and the district AYP reports have been finalized, districts can decide whether to disseminate the AYP information to parents in the spring or wait until school resumes in the fall.** The department requests that schools *not* publish any preliminary school AYP results publicly until the official final release of AYP reports.

If you have any questions on your AYP reports, please contact Heidi Bergland at hbergland@nd.gov or (701) 328-2317.

If you have any questions on program improvement or dissemination issues, please contact Laurie Matzke at lmatzke@nd.gov or (701) 328-2284.

Director's Report

By: Laurie Matzke, North Dakota Director of Title I

For my Director's Report this month, I'd like to briefly review the Title I administrative responsibilities that must be completed over the next few months. This review will serve as a reminder of required reports, meetings, and due dates.

- Annual Title I Review

Title I administrators need to take part in the annual review of their Title I program for the 2011-2012 school year conducted by your Title I staff. Minutes from this meeting must be kept on file.

- Title I WebEx Training

The state Title I office will sponsor a WebEx training for administrators on May 15, 2012, to provide updates on pertinent Title I issues. It is recommended that all Title I authorized representatives and coordinators attend this WebEx training.

- Title I Personnel Report

The Title I Personnel Report is due in the state Title I office by May 17, 2012. It is extremely important to have Title I staff complete this information before they leave for the summer break. You cannot close out your 2011-2012 Title I program without this information. Your final Title I payment will not be processed until the Personnel Report is submitted.

- Title I Final Financial Report

The Title I Final Financial Report is due when all expenditures have been finalized for the 2011-2012 school year. Keep in mind that if teachers attend the Title I Summer Reading Training, teach summer school or in other summer Title I programs, they cannot be paid for travel expenses or summer school salaries until after these activities have been completed. The Final Financial Report and Request for Funds may not be submitted until these activities have been completed.

- Program Improvement

Districts and schools identified for improvement have additional reports and responsibilities that must be addressed. A document outlining all of these requirements can be accessed at www.dpi.state.nd.us/title1/progress/requirements.pdf on the Title I website.

- Adequate Yearly Progress Parent Dissemination Letters

Once the school and district AYP reports have been finalized and published on the department's website, schools and districts need to disseminate their AYP reports and any additional correspondence necessary to clarify their reports to all parents and the community.

- Title I Portion of Regular Consolidated Application

Districts need to complete and submit the Consolidated Application for Federal Title Programs. The final due date to submit is August 31, 2012.



2012 Title I/Special Education Summer Reading Training



A Focus on Literacy Success: Effective Reading Strategies for Struggling Readers

By Denise Gudwin, PH.D

June 13-14, 2012

The Best Western Ramkota Hotel
Bismarck, ND

Literacy success is critical in the achievement of students, yet it's the largest stumbling block for many. Background knowledge, oral language, fluency, vocabulary, comprehension, motivation, and interest are building blocks that can truly increase the reading achievement of our students who struggle. A variety of practical reading strategies will be explored through active participation that will make a difference in our teaching practices. Instructional practices alone are not enough.

It is critical to modify instruction to the needs of our students and establish and maintain access to high quality teaching and learning. Connecting best practices and research to how students learn will ensure success. Registration information will be posted at www.dpi.state.nd.us/title1/events.shtm when it becomes available.

Title I Spring Mailing

You will soon be receiving the Title I spring mailing via email, which will include information on the following:

- Title I Personnel Report (SFN 7357)
- Veteran Title I/Special Education Teacher Information
- Outstanding Title I Educator Award Information
- May Title I WebEx Training Information
- 2012 Title I, Special Education, and 21st CCLC Fall Conference Information
- 2012 Summer Reading Training Registration Information



2012 Fall Conference Math Make and Take-It Session – Looking for Presenters

We are busy planning for the 2012 Title I, Special Education, and 21st CCLC Fall Conference and are currently looking for educators or a team of educators to conduct a math Make and Take-It Session. Anyone interested should provide a detailed lesson plan containing several examples of math games or activities that will be easily replicated and are grounded in scientifically-based research strategies.

Presenters will be paid a stipend for their presentation and travel expenses while presenting at the conference. Please send your lesson plan to Jacki Harasym at jharasym@nd.gov. If you have questions, please contact Jacki at (701) 857-7770. The deadline for submitting the plan proposals for the math Make and Take-It Session is May 25, 2012.

May Title I WebEx Training

The state Title I office has scheduled a WebEx training for May 15, 2012 from 3:00 pm – 4:00 pm (CDT). The training is to address administrative issues for Title I authorized representatives and coordinators. The update includes:

- Updated consolidated application guidance
- Summary of AYP release
- Final Title I allocations and potential sequestration
- Title I monitoring issues

This WebEx training can be used for renewing the Title I coordinator credential. Registration information will be emailed to districts in the Title I spring mailing and posted at www.dpi.state.nd.us/title1/events.shtm on our website. If you are the authorized representative who is responsible for the Title I program in your school district, you are **strongly encouraged to participate this training.**

New Title I Fast Facts Added to Series

Several years ago, the state Title I office created a series of one page documents outlining pertinent information on Title I issues. This Fast Fact Series is available for Title I fiscal, Title I targeted assistance programs, Title I schoolwide programs, and Title I private school programs. Outlined below are seven newly created Fast Facts that will soon be available.

- Collaboration of LEP/Title I
- Guidelines for Determining Title I Student Caseload
- How 21st CCLC Funds Can Supplement Title I Programming
- How Can Title I and Special Education Funds Be Used to Co- Fund Initiatives
- Title I Buildings Must Provide Services
- Title I Funds to Support Early Childhood Education
- What Happens If a District Has to Pay Back Title I Funds



You can find the Fast Facts series on the Title I website at:

- Title I targeted assistance programs: www.dpi.state.nd.us/title1/targeted/general/facts/index.shtm
- Title I schoolwide programs: www.dpi.state.nd.us/title1/schlwide/fastfacts.shtm
- Title I fiscal: www.dpi.state.nd.us/title1/resource/fiscal.shtm
- Title I private school programs: www.dpi.state.nd.us/title1/nonpublic/index.shtm

Outstanding Title I Educator Nominations

Included in the upcoming electronic spring mailing, school personnel will receive information regarding the 2012-2013 North Dakota Outstanding Title I Educator Award. Please consider nominating an Outstanding Title I Educator in your school or district for this award. This individual can be an authorized representative, coordinator, teacher paraprofessional, or anyone who works in a Title I program.



The individual chosen for this award will receive recognition at the 2012 Title I, Special Education, and 21st CCLC Fall Conference in October. You can also find more information regarding the Outstanding Title I Educator online at www.dpi.state.nd.us/title1/awards/educator.shtm.

Special Education Student Exits in TIENET

In TIENET, a student’s case manager has six options to exit a student during the year. Three of the exit categories are particularly important during the end of each school year. The three are as follows:

- **Transferred to regular education.** Students that exit special education during the school year because they are no longer eligible for special education services require additional attention. First, the case manager must exit the student using the “exit” process in TIENET. However, unlike the condition when PowerSchool is not used for district enrollment, a student exited by “transferred to regular education” will need to be manually removed as a special education student in PowerSchool. It is important to note that the special education designation must not be removed until after Pupil Membership report is submitted by the district in the spring of the school year. Once Pupil Membership report has been submitted, the student should be removed from special education in PowerSchool and this must be completed before enrollment data is submitted for the next school year. If this is not completed and the student is again enrolled as a special education student via PowerSchool, personnel from the special education unit must remove special education data before PowerSchool personnel will be able to remove the special education designation in district enrollment.
- **Graduated with a regular high school diploma.** There is one graduation standard for special education students and that is to earn a regular high school diploma by completing the required course work for that diploma. It is important that exit data entered in TIENET match the graduation exit data submitted by school district personnel.
- **Moved, known to be continuing.** Timeliness is important for all exit categories and this holds true for special education students moving to another school district. Typically, if an exit is not completed and the student enrolls in a new school district the previous case manager still has the option of completing an exit for the departed student.

Timely data submission in TIENET provides improved data quality, as well as reduces future data entry burden. Through all of your efforts the special education data submitted to the office of Special Education has greatly improved. We thank you.

N&D Nugget

Title I, Part D, Program Administration Planning Toolkit

Designed for state and local coordinators of the Title I, Part D program, Neglected and Delinquent Technical Assistance Center (NDTAC) offers a toolkit that provides assistance with conducting needs assessments, developing and reviewing applications, and creating formal agreements between agencies. The toolkit presents an overview of the steps involved in each process, brings together U.S. Department of Education (USDE) and NDTAC resources by task, and provides hands-on tools to help coordinators comply with federal requirements while implementing each task. The full document can be accessed at www.neglected-delinquent.org/nd/topics/index2.php?pid=84.

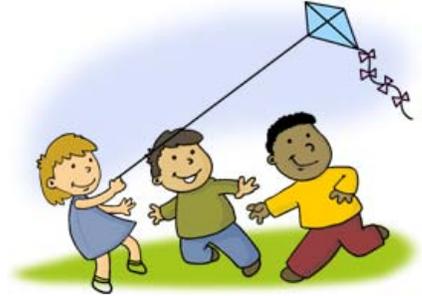


Title I End-of-the-Year Reminders

As this school year comes to an end, there are several items that Title I personnel must complete and submit. A more detailed explanation of each form or process has been outlined below.

- **Title I Final Financial Report (SFN 7822) and Request for Funds (SFN 14660)** – All Title I Final Financial Report forms will be mailed during the month of May 2012. They will be sent by regular mail, because we are personalizing each to match each district's unique situation. In addition to the Final Financial Report and guidance, this mailing will also include the specific addendums that each individual school district is required to complete and a Request for Funds form.

- ✓ Cooperative Agreement Addendum
- ✓ Neglected Funds Addendum
- ✓ Parent Involvement Addendum
- ✓ Private School Addendum
- ✓ Reallocated Funds Addendum
- ✓ Supplemental Services Addendum



If your packet includes any of these addendums, please be sure to complete and submit them along with your Final Financial Report and Request for Funds. Submitting all of the required forms in the same envelope will expedite the process when the state Title I office receives them. Submitting the forms under separate cover slows the review process as we need to have all of the forms submitted for the school district before we can complete our final review.

Please watch your mail for this packet of information sometime during the second week of May.

- **Title I Personnel Report (SFN 7357)** – Title I personnel are reminded to complete the Title I Personnel Report prior to the end of the school year. Title I personnel will receive a copy of the Title I Personnel Report in the Title I Spring Mailing. This report will be available at www.dpi.state.nd.us/forms/sfn7357.pdf or www.dpi.state.nd.us/forms/word/sfn7357.doc. This report should reflect cumulative Title I data from the entire 2011-2012 school year. This information is then compiled and submitted to the USDE for review.
- **Schoolwide End-of-year Report – Revision to the Schoolwide Plan (SFN 52806)** – All schoolwide programs **must** submit the Title I Schoolwide Program End-of-year Report/Revisions to the Schoolwide Plan by **June 15, 2012**. The school report must include data results from the annual schoolwide review meeting for the 2011-2012 school year, as well as a narrative description of any specific changes made to the schoolwide plan for the 2012-2013 school year. This form is available on the Title I website at www.dpi.state.nd.us/forms/sfn52806.pdf and www.dpi.state.nd.us/forms/word/sfn52806.doc. Schools also have the option of making the revisions directly to their schoolwide plan rather than through this form. The state Title I office will accept either method. Schools participating in NDMILE will document their schoolwide changes through the meeting minutes on the NDMILE tool.
- **Title I Annual Assessment of Parental Involvement** – At the end of each school year, Title I programs must evaluate their parental involvement plan and activities. The assessment tool must be documented and available for review. Often, Title I programs choose to meet this requirement by administering a survey. Targeted assistance schools only survey their Title I parents while schoolwide schools survey all parents. The survey should ask parents to evaluate the school's parental involvement plan, its effectiveness, and the appropriateness of activities held throughout the school year. The school will also want to solicit programmatic input from the parents on the school's Title I program and/or the schoolwide plan. For further information or sample survey forms, visit www.dpi.state.nd.us/title1/targeted/require/parent/assess.shtm on the Title I website. Please note that it is not required that a survey be conducted; however, surveys tend to be the most common method. Other ideas for this requirement could be to have an end-of-the-year parent meeting to evaluate the program or phoning parents at the end-of-the-year to gather their responses to the assessment questions. Whatever method used to solicit parent input, **please remember that documentation of how parent input was solicited must be on file.**

- **Title I Annual Review** – Each year, schools are required to hold an annual review meeting to evaluate all the components of the school’s Title I program and/or schoolwide plan. This is also an opportune time to review the data collected through the annual assessment of parental involvement (see previous section). Title I personnel, an administrator, and several classroom teachers, as well as any other interested/involved staff members can attend the annual review meeting. This meeting must be documented with an agenda and/or minutes of the meeting. A sample format for a targeted assistance annual review is available at www.dpi.state.nd.us/title1/require/entire_packet.pdf. Information on a schoolwide annual review is available at www.dpi.state.nd.us/title1/springwkshp/swreview.pdf. Schools are required to inform parents of the results of this annual review meeting. This can be done in a variety of ways; however, the manner of dissemination must be documented. Some ideas for informing parents on the results of the meeting include: summarizing it in an article in the final school newsletter, writing an end-of-the-year memo to parents, or placing this item on the agenda for the required Fall Title I Parent Meeting.

Still No Title I Allocations

Typically the North Dakota Department of Public Instruction (NDDPI) publishes estimated federal Title I program allocations in early March of each fiscal year. However, the NDDPI has still not received our estimated state allocation.

In visiting with USDE staff, they are hoping to provide states with an estimated state Title I allocation this week. Stephanie Gullickson, the department’s grants manager, will then generate school district estimated Title I allocations for the 2012-2013 school year. We anticipate that the estimated federal Title I allocations will be posted by mid May 2012. School personnel will receive an email notification once the estimated allocations have been posted on the department’s website.



If you have any questions, please communicate with your Title I contact person or Laurie Matzke at lmatzke@nd.gov or (701) 328-2284. You can find your district’s assigned Title I contact person at www.dpi.state.nd.us/title1/require/list.pdf.

Information on Coding for Title I

We have been conducting our yearly monitoring review of Title I ledgers and have some updates to share regarding coding issues.

Coding Periodicals

In the past, we have always stated in our Title I fiscal guidance that expenditures for subscription fees for magazines and newspapers were to fall under object code 800-Dues, Memberships, and Registration Fees. However, during the recent monitoring review for the 2011-2012 school year, it was brought to our attention by a school district that the NDFARMS guideline actually lists periodicals (e.g., magazines and newspapers) under object code 600-Materials and Supplies. Periodicals are listed specifically as object code 650 in the NDFARMS. Therefore, we are asking school districts to make this adjustment from object code 800 on your Title I ledger to object code 650 or 600.

Coding Unobligated Funds

We have had a number of inquires as to the object code to be used for Unobligated Set-aside Funds. Unobligated Set-aside funds should be listed as object code 950 on the Title I ledger. Keep in mind that any Title I funds listed under object code 950-Unobligated Set-aside Funds cannot actually be expended on this line. In order to use these funds, you would need to submit a budget revision and move the funds to the appropriate object code based on what the funds are being utilized for.

We apologize for the confusion regarding these coding issues and appreciate your patience as we work to make the coding in Title I consistent with the coding in the NDFARMS guideline.

If you have questions, please contact the state Title I office.

Title I School Improvement Project

The state Title I office recently contracted with distinguished educators to create a toolbox of exemplary school improvement practices and strategies.

We would like to recognize and highly commend the eleven educators who helped create this toolbox of resources. Their knowledge and commitment enabled the department to generate this toolbox to be shared with other educators.

Marcia Bartok	Principal	Williston Public School District
Cindy Cook	Principal	Minot Public School District
Billy Demaree	Consultant	SSOS Team
Tricia Erickson	Principal	Fargo Public School District
Deb Follman	Principal	Devils Lake Public School District
Andree Hayes	Teacher	West Fargo Public School District
Jeff Johnson	Principal	West Fargo Public School District
Ali Parkinson	Principal	Grand Forks Public School District
Peg Portscheller	Consultant	SSOS Team
Missy Slaathhaug	Consultant	SSOS Team
Mary Stammen	Special Education Director	Griggs/Steele/Trail Special Education Unit

Outlined below are the school improvement topics for the 34 proposals that have been created to date. These documents outline a specific school improvement activity, provide the supporting research, and offer a sample budget for schools and districts to reference while developing their own school improvement initiatives.

The documents are currently being formatted and proofread and will be posted as they become available. A new link is being created on the Title I website located under “Key Title I Issues” at www.dpi.state.nd.us/title1/index.shtm.

Afterschool Reading Program for Students in Grades 4-5	Fix-It Shop “Standard Protocol for Behavior Problems”	Increasing Reading Skills Across All Contents
Becoming a Data Driven School-Have a Data Process	Co-teaching Small Group Model in Grades 1-3	Individual Learning Plans for all Non-Proficient Students
Increasing Attendance in Schools with Low Socio-Economic Families	Schoolwide Implementation of Effective Instructional Strategies	Improving Reading Comprehension for Students in Poverty
Daily Five & Café: A Structure to Meet the Needs of All Students	Incorporating a Guided Reading Approach	Effective Guided Reading Instruction for K-5 Students
Daily Intervention Block	Introduction to Kindergarten	Professional Learning Visit
Summer School: Developing a Literacy Intervention Framework Model	Grade, Classroom, and Student Goal Setting Process Using MAP Data and Additional Supporting Data Sets	Utilizing MAP Data to Drive Instruction – Understanding and Using MAP Data
Leveled Literacy Intervention: A Tool for Tier 2 and Tier 3 Instruction	Setting Up Exemplary Before/After School Reading Program	Discriminating Between “Need to Know” and “Nice to Know” Benchmarks
Strengthening Students’ Academic Language Skills	Strengthening High School Academic Language Skills	Strengthening Students’ Academic Language Skills
RTI Model “Problem Solving”	RTI Model “Standard Protocol”	RTI in a Collaborative Environment
Powerful Professional Development	The Power of Deep Planning and Mapping of Standards	The Power of Vocabulary in Student Learning
The Role of the Reading Coach	The Role of the Math Interventionist	Working with ELLs: Interpreting and Using ACCESS Test Scores and WiDA Resources
Designing Engaging Work		

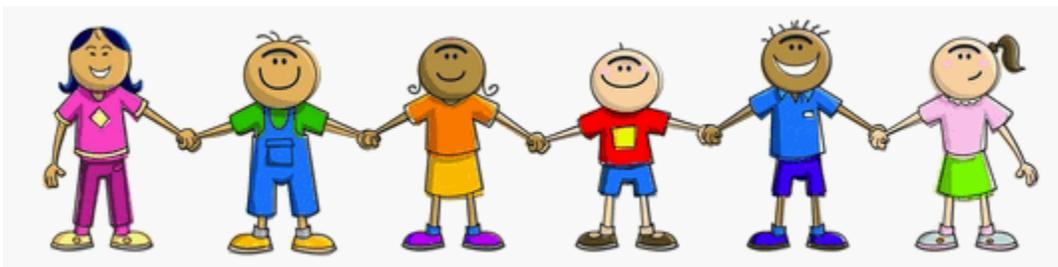
IDEA Update

This month's update concludes with a review of three articles related to reading informational text in the March issue of *Education Leadership*, Reading: The Core Skill.

Thomas Newkirk's article, "How We Really Comprehend Nonfiction," challenges the way current informational textbooks are written and taught. Newkirk argues that narrative is the key to engaging readers in nonfiction. Like fiction, informational writing must satisfy the human craving for narrative; it must establish a set of expectations to assist the reader's engagement with and comprehension of the text. The most common nonfiction reading, textbooks, do not engage students because they have been developed to cover multiple topics broadly or they have become glorified dictionaries. Well written informational texts engage readers by outlining the conflicts and posing topic-related questions, presenting multiple perspectives or solutions to the conflicts or questions associated with the topic, and/or the weaknesses/strengths of arguments posed by people in the field. Good non-fiction narrative writing, like fictional narrative, leaves the reader with lasting themes and feelings when they finish reading.

In "The Challenge of Challenging Text," Shanahan, Fisher and Frey analyze a set of factors that increase the complexity of informational text and the accompanying comprehension difficulties. According to their research, more factors than vocabulary deficits and increased sentence complexity contribute to student comprehension difficulties. Their research suggests that domain specific words used to describe central concepts, the general academic terms surrounding the domain words and the text's sentence structure create the comprehension challenges. Writers of informational texts use long, dense sentences to convey multiple concepts and interrelationships to the reader. Unfortunately what these sentences do is tax the reader's working memory and limits his/her comprehension. Students must be taught how to tease out the individual concepts and ideas and as well as the meaning hidden within the text's complex sentences. In addition, explicit instruction should be given on the rhetorical elements of coherence (understanding pronoun referents, connecting related ideas), and organization (temporal, compare-contrast, problem-solution). Verifying that students have the requisite background knowledge (developmental, experiential, and cognitive factors) facilitates comprehension. Increasing a student's motivation and comprehension of challenging texts can be done by ensuring they have an established purpose for reading (what they will learn from the text) and engaging texts that support and improve reading skills (fluency, decoding, vocabulary and how to make connections between the words and ideas contained in the text).

In "Making Textbook Reading Meaningful," Guthrie and Klauda discuss the challenges textbooks create for middle school students. Students at this level need instruction in the value of textbooks as well as strategies for extracting meaning and information from them. The boredom these students experience when reading textbooks can be attributed to their immature or absent higher order literacy skills, and/or their limited ability to synthesize information from multiple disconnected sections of text. Middle school content literacy instruction should be focused on assisting students with developing dedication; a factor research suggests has more to do with achievement than IQ. Teachers can support this development by having students set and achieve individual reading goals using multiple informational texts related to a single topic. Exposure to multiple texts increases more than student reading competence, it develops higher order reasoning skills and the ability to integrate multiple sources of information. Student motivation and comprehension can be increased by differentiating access to informational text, allowing student choice, and use of strategies incorporating social interaction, like paired discussions or collective reasoning activities.



Monthly Featured Articles

Secondary Transition News You Can Use

- Leadership Skill Training Opportunity for Your Students:

2012 North Dakota Transition and Youth Leadership Conference: “Nothing about Us without Us”

July 15-16, 2012, Radisson Hotel, Bismarck, ND

Featuring: Career Dash, Climb Theatre, Resource Roundup, Education Panel and more

- ✓ For all youth 14-26
- ✓ For families and professionals

Save the Date cards are being sent to Special Education units. For further information, please contact Lyne Schumaker at (701) 222-1223 or 1-800-484-2263.

- Professional Development Training and Interagency Collaboration:

Save the Date for the 2013 Secondary Transition Interagency Conference:

April 10-11, 2013, Doublewood Inn and Conference Center, Bismarck, ND.

- Resource to Assure Compliance to Indicator 13 Transition Requirements:

A new guide, *Secondary Transition: Tips for Compliance to Indicator 13*, was recently developed by the NDDPI Special Education office for case managers of students on transition IEPs. An electronic version of this document was recently sent to all Special Education unit directors and program coordinators for disbursement to case managers. The guide can also be downloaded from the NDDPI Secondary Transition website at www.dpi.state.nd.us/transition/tip.pdf.

Randomly selected transition IEPs will be reviewed by the NDDPI Special Education office this summer for compliance to Indicator 13. Please contact Gerry Teevens at gteevens@nd.gov with questions.

Interactive Media: Preschool - Elementary Best Practices and Resources Available

Did you recently purchase new technology and/or interactive media for your library, classroom, or preschool program? As you may have discovered, there are a wealth of resources available for teachers and librarians to filter through. Highlighted below are two links that offer best practice, guidance, and further links to educators working with young children in a technological way.

The National Association for the Education of Young Children (NAEYC) has recently published a joint position statement with the Fred Rogers Center for Early Learning and Children’s Media at St. Vincent’s College. The position statement, titled *Technology and Interactive Media as Tools in Early Childhood Programs Serving Children from Birth through Age 8*, was recently adopted January 2012 and can be found at www.naeyc.org/files/naeyc/file/positions/PS_technology_WEB2.pdf on the NAEYC website.

A second highlighted technology resource is available at the Children’s Technology Review (CTR) site, found at <http://childrenstech.com/>. The CTR site offers consumer reviews and publishes the latest trends in children’s interactive media. Blogs, articles, and consumer information for educators and library media personnel are included throughout this site, offering the latest information to incorporate into your program and classrooms.



STEM Research Brief

Acquiring the skills and knowledge associated with science, technology, engineering and mathematics (disciplines collectively known as STEM) is increasingly important preparation for life and work in the 21st century. Yet education assessments suggest that American students are not adequately prepared for STEM careers. What's more, interest in these fields appears to be declining even as demand for STEM-capable employees increases. A lack of engagement in STEM narrows students' future career options and limits their decision-making capacity as citizens and consumers.

Although no single institution can dramatically alter these trends, out-of-school time programs such as 21st CCLC offer the potential to increase student interest and expertise in STEM. Compared with the regular school day, such programs offer students more informal learning environments with extended time for exploration. These conditions are conducive to offering high-interest, high-quality, STEM activities that can complement or supplement more formal academic studies.

This research brief examines the literature on STEM education in out-of-school settings. It concludes with a discussion of the challenges of providing students with expanded opportunities to deepen their interest and expertise in these critical disciplines through out-of-school time learning experiences. According to Public Agenda's *Reality Check 2006*, approximately 45 percent of students would be "really unhappy if [they] ended up in a job or career that required doing a lot of math and science" (p. 10). Students also state that the science and math taught in school have little to do with their lives outside school (Bouillion & Gomez, 2001; Zacharia & Calabrese Barton, 2003).

A Double Bind: Low Achievement and Low Interest in STEM

American students are lagging in their academic performance in math and science. The 2007 ACT College Readiness Report points out that only 43 percent of graduating seniors are ready for college math and just 27 percent are ready for college science. In 2005, only 29 percent of fourth- and eighth-grade students and only 18 percent of 12th-grade students performed at the Proficient level on the National Assessment of Educational Progress (Grigg et al., 2006).

There is also an apparent "interest gap" when it comes to STEM-related fields. The President's Council of Advisors on Science and Technology points to evidence suggesting that "many of the most proficient students, including minority students and women, have been gravitating away from science and engineering toward other professions" (2010, p. 2).

The Out-of-School Time Opportunity

Students spend twice as many waking hours outside of school as in it. Out-of-school time programs offer the potential to supplement learning from the school day and to provide targeted assistance to students who need help beyond what they can receive in the classroom, according to *Structuring Out-of-School Time to Improve Academic Achievement* (Beckett et al., 2009), a research-based practice guide from the What Works Clearinghouse. The guide states that academically oriented out-of-school experiences offer promise to close the achievement gap; however, such experiences must be carefully orchestrated to engage students and facilitate learning. Coordinating out-of-school time programs with the learning activities of the regular school day leads to a shared mission of improving academic performance.

Out-of-school time programs afford a special opportunity to expand science learning experiences for millions of children, according to *Learning Science in Informal Environments*, a report from the National Research Council. Out-of-school programs that emphasize science "can make important contributions to students' understanding of scientific and mathematical concepts, their ability to think scientifically, and their use of scientific language and tools. They also can be effective in improving students' attitudes toward science and toward themselves as science learners" (National Research Council, 2009, p. 294).

Effective out-of-school time programs incorporate key principles of informal learning. According to *Surrounded by Science* (Fenichel & Schweingruber, 2010, p. 5), effective informal learning environments:

- Engage participants in multiple ways, including physically, emotionally and cognitively.
- Encourage participants to have direct or media-facilitated interactions with phenomena of the natural world and the designed physical world in ways that are largely determined by the learner.
- Provide multifaceted and dynamic portrayals of science.
- Build on the learner’s prior knowledge and interest.
- Allow participants considerable choice and control over whether and how they engage and learn.

Increasing STEM opportunities for students in out-of-school settings is one of the key recommendations of the President’s Council of Advisors on Science and Technology. The Council concludes that “students need opportunities to establish deeper engagement with and to learn science and mathematics in non-standard, personal, and team-oriented ways that extend beyond the curriculum and the classroom. This is especially vital for identifying and nurturing high achievers and future STEM innovators” (2010, pp. 7-8).

Some 8.4 million children in the United States regularly participate in afterschool programs, and such programs offer a unique opportunity to engage children in hands-on, experiential science learning. “Programs can meet their youth development goals by getting kids excited by science. Many education leaders recognize the potential of these programs to combine cognitive, social, and emotional development in ways consistent with the best advice from learning research” (The After-School Corporation, 2010, p. 2).

Out-of-school time programs also offer promise to increase interest in STEM among populations currently underrepresented in scientific and technical fields. African Americans, Native Americans and Hispanics make up 28.5 percent of the U.S. population, yet they represent only 9.1 percent of college-educated Americans in the science and engineering workforce (Committee on Underrepresented Groups and the Expansion of the Science and Engineering Workforce Pipeline et al., 2010).

Although math, science, and engineering fields were once dominated by males, the gender gap is closing. Women now earn nearly half the bachelor’s degrees in math. Still, women continue to be underrepresented in math, science and engineering-related careers. Overall, more women than men graduate from college with a bachelor’s degree; however, men earn a higher proportion of degrees in many science and engineering fields of study (National Science Foundation, 2011). Women’s participation in STEM-related college majors is lowest in the fields of engineering and computer sciences, according to National Science Foundation data.

Out-of-school time programs that focus on girls’ involvement in STEM can play an essential role in improving female representation in these traditionally male-dominated fields, according to the Harvard Family Research Project. A research update from the project states that out-of-school time programs offer girls a nonthreatening and nonacademic environment for hands-on learning that is collaborative, informal and personal (Chun & Harris, 2011).

STEM in Out-of-School Settings

A common goal of afterschool programming is to offer students activities that are simultaneously fun and academically enriching. According to a review of high-functioning afterschool programs (Huang et al., 2010), a number of strategies promote academic and social learning. These include cross-content integration, diversity of activities, real-world examples, dialogic and cooperative learning, culturally significant programming, special consideration for the students’ activity preferences, and the incorporation of enrichment and recreational activities. To facilitate learning, motivation and engagement across academic areas, including science and math, high-quality afterschool programs do the following:

- Make learning fun.
- Offer diverse activities.
- Use real-world and relevant examples.
- Use field trips, student performances and exhibitions to advance learning.

According to Huang and colleague, additional insights about quality programs come from the *Afterschool Training Toolkit*, a product of the National Partnership for Quality Afterschool Learning. As part of the product development process, research teams reviewed literature and conducted observations in 53 afterschool programs to determine best practices for supporting academic instruction in specific disciplines, including math, science and technology. Following are their research-based guidelines for encouraging high-quality afterschool programming in each of these disciplines.

Science: Afterschool offers a particularly appropriate venue for inquiry learning about science. With longer blocks of time and more flexibility than in regular classrooms, students can explore science concepts more deeply during out-of-school learning. Researchers (Falkenberg, McClure, & McComb, 2006) found that quality science activities in afterschool settings engage students in these activities:

- Investigating science through inquiry.
- Exploring science through problem- and project-based learning.
- Integrating science with other content areas.
- Tutoring in science for content and skill development.
- Learning with families and using community resources.



Math: Practices that support students' social, emotional and physical development provide the relevant link between successful afterschool programming and effective instruction in mathematics. Briggs-Hale et al. (2006) found that quality math activities in afterschool settings have the following characteristics:

- *Encourage problem solving.* Help students pursue solutions to intriguing problems using what they know about mathematics facts, skills and strategies, and encourage students to ask questions and use thinking skills.
- *Develop and support "math talk."* Encourage students to use language to express their ideas, build on ideas together, and share strategies and solutions.
- *Emphasize working together.* Encourage students to discuss concepts, compare ideas, justify methods and articulate thinking so that they gain awareness of the different strategies individuals apply to problem solving.

Technology: Using technology regularly in afterschool programs to support learning leads to improved motivation, attitudes and academic achievement (Huang et al., 2010). Quality technology activities in afterschool settings help students with the following (Heath, 2007):

- Developing self-expression and creativity.
- Gathering and sharing information.
- Finding and solving problems.
- Living and working with technology.
- Learning in virtual spaces.
- Building skills and understanding.



Engineering: Introducing engineering concepts to K-12 students during out-of-school programs is a relatively new approach and does not yet offer a research base comparable to those of math, science and technology. However, findings are emerging about promising programs that engage students in engineering or design challenges.

Design It! Engineering in After School Programs (Design It!) is a program that challenges students to build working models of small, functional toys and machines as an introduction to engineering concepts. *Design It!* was developed as a collaboration project between six urban science centers and more than 30 community-based afterschool programs. According to a report about lessons learned from the *Design It!* pilot, these hands-on, inquiry-based activities "offer a context for children to develop basic skills, general problem-solving strategies, and social development, which is applicable to their performance in school as well as their later involvement in the working world" (Coltin & Gannett, 2002, p. 9).

FIRST® robotics programs challenge student teams to construct and program robots for competitions. Professional engineers typically provide mentoring and technical assistance. A survey of competition participants (Center for Youth and Communities, Brandeis University, 2005) found that, compared to non-FIRST® students with similar backgrounds and academic experiences, FIRST® participants exhibited these benefits:

- More than three times as likely to major specifically in engineering.
- Roughly 10 times as likely to have had an apprenticeship, internship, or co-op job in their freshman year.
- Significantly more likely to expect to achieve a postgraduate degree.
- More than twice as likely to expect to pursue a career in science and technology.
- Nearly four times as likely to expect to pursue a career specifically in engineering.
- More than twice as likely to volunteer in their communities.

Challenges and Implications

Many out-of-school providers already recognize the value of STEM programming to help students increase academic achievement. More than 90 percent of 21st CCLC programs offer some STEM activities, affording more time for young people to engage in science and math activities after school (Learning Point Associates, 2006). Despite the promise of promoting STEM education during out-of-school time, however, there are barriers to capitalizing on this opportunity.

A key concern is the need for ongoing staff development. Staff for out-of-school STEM programs requires not only skills and experience in youth development, but also technical skills and expertise related to STEM content (Chun & Harris, 2011). Most afterschool staff has little or no content background or teaching experience in STEM. More than three-fourths of afterschool programs do not have a dedicated science person on staff; in fact, most science activities at such programs are conducted by youth workers with little to no science background (Freeman, Dorph, & Chi, 2009). More than half of the staff who lead science activities are not offered any professional development related to these activities.

A variety of obstacles can get in the way of providing quality STEM programming in out-of-school settings. These include:

- *Capacity.* Many programs offer only limited opportunities for participants to engage in high-quality STEM learning opportunities.
- *Commitment.* Many providers are reluctant to tackle STEM due to lack of staff buy-in, comfort with science content, and availability of training and materials.
- *Sustainability.* Stable funding (for supplies as well as ongoing staff development) is needed to ensure continued growth and long-term sustainability of afterschool STEM.
- *Perception.* The afterschool space is not seen as a vital partner in STEM education.
- *Time and attention.* STEM programming often must compete with other activities for resources, staff time and student interest (Afterschool Alliance, 2010; Chun & Harris, 2011).

Developing partnerships with organizations and personnel who bring scientific and technical content expertise are strategies that can help close the STEM gap in out-of-school programs so that more students can gain access to high-interest learning opportunities.

There are challenges to assessing the impact of learning through informal experiences. For example, defining learning goals can be difficult when activities are deliberately learner centered; assessment tools often used in formal education, such as tests, are not appropriate for out-of-school programs (Fenichel & Schweingruber, 2010). Despite these challenges, the promise of out-of-school time learning in STEM is drawing increasing interest from researchers, which should yield important insights to inform future program development.

Upcoming Events

× **2012 Parent Involvement Conference**

April 26–28, 2012 in Fargo, ND

For more information, please visit <http://pathfinder-nd-org/conference>

× **IRA 57th Annual Convention**

April 29–May 2, 2012 in Chicago, IL

For more information, please visit www.reading.org

× **2012 Title I/Special Education Summer Reading Training**

June 13-14, 2012 at the Best Western Ramkota in Bismarck, ND

Registration information will be posted at www.dpi.state.nd.us/title1/events.shtm when it becomes available

× **2012 Title I, Special Education, and 21st CCLC Fall Conference**

October 10-12, 2012 in Bismarck, ND

Registration information will be posted at www.dpi.state.nd.us/title1/events.shtm when it becomes available



Title I To Do List

Teachers

- Conduct an Annual Review Meeting.
- Notify parents of the results of the Annual Review Meeting through a newsletter, sending minutes, etc.
- Maintain and finalize portfolios for all Title I students.
- Send home information to Title I parents as to how they can support their child's education at home, at school, and over the summer.
- Prepare final progress reports on the achievement of all Title I students. Distribute these progress reports to Title I parents.
- Conduct student selection process for the following school year (if applicable).
- Complete and submit Title I Personnel Report (SFN 7357) to the Title I office by May 17, 2012.

Schoolwide Team

- Schoolwide planning year teams must view the *NDMILE Schoolwide Implementation WebEx*, information coming soon to participating schools.
- Conduct and document an annual assessment of parental involvement.
- Conduct and document the Title I schoolwide annual review to evaluate effectiveness of schoolwide plan.
- NDMILE – Assess, Plan, and Monitor School Plan according to "Crosswalk of NCLB Schoolwide Plan Components and NDMILE KEY Indicators".
- NDMILE – Finalize Title I Schoolwide Supplemental Report.
- NDMILE – Next submission due date is May 31, 2012.

Title I Staff	Office Fax (701) 328-0203	Toll Free (888) 605-1951
Laurie Matzke, Director Email: lmatzke@nd.gov Phone: (701) 328-2284	Ann Ellefson , Assistant Director Private School Programs Email: aellefson@nd.gov Phone: (701) 328-2488	Stefanie Two Crow , Assistant Director Schoolwide Programs Email: sttwocrow@nd.gov Phone: (701) 328-2292
Jacki Harasym , Assistant Director Title I, Homeless, Special Education and N&D Program Email: jharasym@nd.gov Phone: (701) 857-7770	Tara Bitz , Assistant Director Early Childhood Education and Early Reading First Email: tbitz@nd.gov Phone: (701) 328-4646	Lodee Arnold , Assistant Director Schoolwide Programs and Title III-ELL Email: laarnold@nd.gov Phone: (701) 328-1876
Kerri Whipple , Assistant Director Title III-ELL Email: kwhipple@nd.gov Phone: (701) 298-4638	Dale Patrick , Assistant Director Even Start Email: dpatrick@nd.gov Phone: (701) 328-1644	Josh Sharp Program Administrator 21 st Century Email: jsharp@nd.gov Phone: (701) 328-2285
Sandy Peterson Program Administrator Migrant Education and Title I Credentials Email: smpeterson@nd.gov Phone: (701) 328-2170	Mary Neigum Fiscal Officer Email: mneigum@nd.gov Phone: (701) 328-2281	Patty Carmichael Administrative Assistant Email: pcarmichael@nd.gov Phone: (701) 328-3264
Lauri Nord Administrative Staff Officer Email: lnord@nd.gov Phone: (701) 328-2282	Jill Frohlich Administrative Assistant Email: jmfrohlich@nd.gov Phone: (701) 328-2254	Cathy Ebert Administrative Assistant Email: cmebert@nd.gov Phone: (701) 328-2824

Special Education Staff	Office Fax (701) 328-4149	TDD (701) 328-4920
Dr. Alison Dollar, Director Email: adollar@nd.gov Phone: (701) 328-2277		
Brenda Oas Assistant Director Email: boas@nd.gov Phone: (701) 328-2277	Gerry Teevens Assistant Director Email: gteevens@nd.gov Phone: (701) 328-2277	Dr. D. Guy McDonald Special Education Manager Email: dgmcdonald@nd.gov Phone: (701) 328-2277
Dr. Lynn Dodge Special Education Coordinator Email: ldodge@nd.gov Phone: (701) 328-4564	Kathy Smith IDEA B Grants Manager Email: kasmith@nd.gov Phone: (701) 328-2615	Nancy Skorheim Assistant Director Email: nskorheim@nd.gov Phone: (701) 328-2277
Bob Rutten Special Education Coordinator Email: brutten@nd.gov Phone: (701) 328-2277	Mary McCarvel-O'Connor Assistant Director Email: moconnor@nd.gov Phone: (701) 328-4560	Steve Bourgois Assistant Director Email: stebourgois@nd.gov Phone: (701) 328-3426
LaDawn Eisenbeis Administrative Assistant Email: lreisenbeis@nd.gov Phone: (701) 328-2277	Michelle Souther Office Manager Email: msouther@nd.gov Phone: (701) 328-2652	Colleen Schneider Administrative Assistant Email: cischneider@nd.gov Phone: (701) 328-3217