Dr. Susan S. McKinney Secondary School of the Arts

FINAL REPORT

New York City Department of Education External School Curriculum Audit | August 2011

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Introduction

About This Report

This final report is the result of an external school curriculum audit (ESCA) of Dr. Susan S. McKinney Secondary School of the Arts conducted by Learning Point Associates, an affiliate of American Institutes for Research. This audit was conducted in response to the school being identified as in need of improvement under the New York State Education Department differentiated accountability plan, pursuant to the accountability requirements of the Elementary and Secondary Education Act, as reauthorized by the No Child Left Behind (NCLB) Act. The utilized ESCA process was developed for and carried out under the auspices of the New York City Department of Education (NYCDOE) Office of School Development, within the Division of Portfolio Planning.

About McKinney Secondary School of the Arts

Located in New York City, in Brooklyn, McKinney Secondary School of the Arts (K265) is a secondary school with 521 students in Grades 6-12. The school population comprises 75 percent Black, 22 percent Hispanic, 1 percent White, and 2 percent Asian students. The student body includes 2 percent English language learners and 19 percent special education students (Special Education Service Delivery Report[1]). Boys comprise 38 percent of students, and 62 percent are girls. The average attendance rate for the 2009–10 school year was 81 percent. Seventy-two percent of the student population is eligible for free lunch, and 10 percent of students are eligible for reduced-price lunch.[2]

McKinney Secondary School of the Arts provides learners at the secondary school level with a comprehensive and Advanced Placement curriculum with a special emphasis on courses in the performing and visual arts. The school operates an Advancement Via Individual Determination (AVID) program and obtained national certification in 2006. In addition, the school collaborates with numerous community-based organizations and institutes of higher education to provide students with enriching learning experiences and academic and social supports.

The mission statement of McKinney Secondary School of the Arts states that the school strives:

> To engage in a rigorous arts curriculum that prepares students academically and socially for success in college, the world of work and develops their civic engagement at both

[1] http://schools.nyc.gov/documents/teachandlearn/sesdr/2010-11/sesdr_K265.pdf. Accessed July 15, 2011.
[2] Accountability and Overview Report 2009–2010, https://www.nystart.gov/publicweb-rc/2010/b1/AOR-2010-331300010265.pdf. Accessed July 15, 2011.

the school and community level.

Audit Process at McKinney Secondary School of the Arts

The ESCA approach utilized at the high school level examines six topic areas: student engagement, academic interventions and supports, support for incoming students, classroom instruction, professional development, and courses and extracurriculars. Data were collected at the school level through teacher surveys, administrator interviews, classroom observations, and an analysis of documents submitted by McKinney Secondary School of the Arts, during the months of April and May 2011. From these data, Learning Point Associates prepared a series of reports for the school's use.

These reports were presented to the school at a co-interpretation[SM] meeting on June 8, 2011. During this meeting, 11 stakeholders from the McKinney Secondary School of the Arts community read the reports. Through a facilitated and collaborative group process, they identified individual findings, then developed and prioritized key findings that emerged from information in the reports.

The remainder of this report presents the key findings that emerged from the co-interpretation process and the actionable recommendations that Learning Point Associates developed in response. Please note that there is not necessarily a one-to-one connection between key findings and recommendations; rather, the key findings are considered as a group, and the recommended strategies are those most likely to have the greatest positive impact on student performance at McKinney Secondary School of the Arts.

Key Findings

After considerable thought and discussion, co-interpretation participants determined a set of key findings. These key findings are detailed in this section. The wording of the key findings below matches the wording developed and agreed upon by co-interpretation participants at the meeting.

Critical Key Findings

CRITICAL KEY FINDING 1

According to the survey and observations, there are students who are not actively engaged in classroom discussions and activities.

Classroom observation data indicate that students did not display sustained active engagement throughout the 34 observation periods, with levels of active student engagement varying within and across classes. Participants noted that much of the observed classroom activity was teacher-directed with few opportunities for student choice, responsibility, leadership, or meaningful peer-to-peer interactions. In addition, 40 percent of survey respondents indicated their students take part in recording, representing, and analyzing data on a daily basis. However, co-interpretation participants felt this percentage should be higher.

CRITICAL KEY FINDING 2

Based on classroom observation data, teachers do not consistently reflect the use of higher-order questions, to expand student understanding.

Critical Key Finding 2 is supported by information from observations. The data indicate that for the majority of classrooms observed, instruction sometimes focused on meaningful discussions of broad concepts but more frequently emphasized discrete facts with limited attempts to make connections between the material and real-world applications. Communication of the essential attributes or examples of a concept or procedure through discussion or materials was intermittently evident. Teachers sometimes addressed student confusion and misconceptions but did not do so consistently. These qualities were evident throughout five observations (15 percent of the total) in sufficient depth; however, such evidence was not the norm across all observation cycles. Participants also noted the lack of opportunities for students to engage in higher-order thinking skills in one-third of the observed classes. In these classes, instruction was most likely to take the form of a teacher-centered lecture. Co-interpretation participants connected this key finding to observation data indicating that characteristics associated with regard for adolescent perspective were infrequently present. This means that opportunities for student autonomy and leadership were limited; also limited were teacher attempts to connect material with students' lives and opportunities for meaningful peer interactions and discussions. Lastly, it was noted that in one-third of the classrooms observed, there were few if any examples of teachers providing quality feedback to students.

CRITICAL KEY FINDING 3

Staff are provided with handbooks and other materials that guide their instructional strategies and are embedded in the syllabi.

Critical Key Finding 3 is supported by information from documents provided by the school. Staff handbooks delineate instructional strategies intended to promote higher-order thinking, problem-solving skills, and cooperative learning. The staff at McKinney Secondary School of the Arts have worked over several years to develop syllabi for all courses, but did not provide the auditors with an articulated scope and sequence of courses or learning objectives. The learning strategies were not explicitly stated in the course syllabi; however it was acknowledged during co-interpretation that assignments and projects described in the syllabi may embody the articulated strategies.

Positive Key Findings

POSITIVE KEY FINDING 1

According to documents and interviews, incoming sixth and ninth grade students' prior academic and social data are utilized to place students in appropriate courses and social services.

Positive Key Finding 1 is supported by information from interviews and documents provided by the school. Interviewees described how data about incoming students is accessed and utilized to identify students in need of academic supports or attendance interventions. Diagnostic assessments are administered during orientation sessions to place students in appropriate courses. Interviewees explained that during orientation sessions, parents are provided with information about academic supports and monthly Parent Academies hosted by the school. Parents and teachers utilize data management systems such as Achievement Reporting and Innovation System (ARIS) and Teacher Ease to monitor and assist students, and facilitate communication between home and school. Available academic and social supports for all students include AVID strategies, Cornell note taking, guidance course work, and college and financial planning.

POSITIVE KEY FINDING 2

The majority of teacher survey respondents stated that they strongly agreed that professional development has been closely connected to schoolwide goals. Professional development has helped them to develop standards-based lessons and improve differentiated instruction.

Positive Key Finding 2 is supported by information from the teacher survey. The survey was completed by 29 classroom teachers, five of which were arts instructors. Most survey respondents agreed (59 percent) or strongly agreed (31 percent) that professional development they experienced since the 2009–10 school year has been closely related to the school's goals. In fact, a majority of teachers agreed that professional development has (a) been sustained and coherently focused, (b) included enough time to think carefully about and try new ideas, and (c) included opportunities to work productively with colleagues. The survey also inquired about the usefulness of select topics of professional development. The two topics rated "very helpful" by the greatest number of respondents were *developing standards-based lessons* and *differentiated instruction.*

POSITIVE KEY FINDING 3

Based on the teacher survey, most teachers reported modifying lessons to differentiate instruction and receiving direct support to improve instruction and to meet the varying needs of their students with disabilities.

Nearly all teachers who instruct students with disabilities reported in the teacher survey that they use modified or different materials to support instruction for these students. A majority of survey respondents indicated that collaboration between special education and general education teachers occurs informally or during common planning and professional development time. Survey respondents were most likely to report that they receive direct support to improve instruction for students with disabilities from a building leader who focuses on special education, veteran teachers, or other colleagues of their choosing. Still, at the time the survey was administered, the majority of respondents indicated they look at the individualized education program (IEP) for students with disabilities only a few times a semester. Co-interpretation participants discussed this finding and shared that in the months since the survey, the staff at McKinney Secondary School of the Arts had been working to more effectively use data to serve students with disabilities, including referencing IEPs.

Recommendations

Overview of Recommendations

The McKinney leadership team has worked to foster a coherent and sustained focus on instructional strategies that promote higher-order thinking and problem solving skills. The instructional staff have devised the acronym ARUBA to refer to: AVID program, Rigor, Understanding by Design, Balanced Literacy, and Assessment. This strategy encapsulates the driving philosophy behind curriculum and instruction at McKinney Secondary School of the Arts. Job-embedded professional learning structures are in place to support this focus. Still, findings from the audit process point to a need for more consistent implementation of instructional strategies.

The school community has engaged in ongoing efforts to define and document course content through the development of course syllabi. The syllabi articulate the learning activities and objectives for each class offered by McKinney Secondary School of the Arts; other documents provide teachers with guidance on instructional strategies. This point was identified as a critical key finding; however, a specific recommendation addressing this issue is not included, primarily because the critical key finding is based on positive evidence from submitted documents and a statement from the auditors that evidence of a full scope and sequence of curriculum was not submitted for review. Interviewees and co-interpretation participants did discuss ongoing efforts to refine and develop the syllabi. This initiative is akin to diary mapping. Best practices in curriculum development point toward next steps: building consensus among grade-level and department teams to articulate the scope and sequence of learning experiences for subject areas.

The sustained focus on improvement priorities, structures for job-embedded professional learning, and the ongoing development of syllabi and curriculum are characteristics that provide McKinney Secondary School of the Arts with a sound foundation upon which to build as it moves forward with continuous improvement. The recommendations in this report likely complement the current foci for improvement at the school. Therefore, alongside the recommendations, the school is encouraged to consider the stages of implementation (see the following page) to determine where current practices fall on the continuum and to identify steps that will deepen implementation and ensure consistent use of instructional strategies.

THE THREE RECOMMENDATIONS

With these issues in mind, Learning Point Associates auditors developed the following three recommendations:

1. Initiate a schoolwide process for increasing student engagement and creating a sustainable and supportive learning environment. The aim is to enhance participation, reduce boredom, and increase student achievement in academic and social skills.
2. Continue to work toward more consistent implementation of instructional strategies that increase opportunities for higher-order thinking, analysis and problem solving, and deep content understanding.
3. Implement instructional strategies that encourage high-quality instructional feedback between the teacher and students or among students.

These three recommendations are discussed on the following pages. Each recommendation provides a review of research, specific actions the school may wish to take during its implementation process, examples of real-life schools that have successfully implemented strategies, and online resources for additional information. All works cited, as well as suggestions for further reading, appear in the References section at the end of this report.

Please note that the order in which these recommendations are presented does not reflect a ranking or prioritization of the recommendations.

Stages of Implementation

Implementation is a process, not an event. Research suggests that full implementation can take several years. A meta-analysis of cross-industry program implementation studies identifies the following stages of the implementation process:

Exploration and adoption: This stage is about awareness and acquisition of knowledge about a practice or program. The purpose of exploration is to assess the potential match between community needs, evidence-based practice, program needs, and community resources, and to make a decision to proceed (or not) (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005, p. 15). This stage may also include an examination of readiness to act and preparation of the organization and staff.

Program installation: This stage is about considering the needed elements to support a new program or practice. The innovation may require a change in operating norms. Leaders will want to consider structural supports including funding, human resources, policies, and frameworks for reporting and outcome expectations. Leaders will also want to consider what additional supports or changes to structures are needed to support effective implementation.

Initial implementation: Fixsen et al. (2005) write, "During the initial stage of implementation the compelling forces of fear of change, inertia, and investment in the status quo combine with the inherently difficult and complex work of implementing something new" (p. 16). The unwavering support of leaders is crucial at this stage as it is at this point that practitioners can become overwhelmed with new expectations layered on top of existing demands and cease their attempts at implementation.

Full operation: This stage can be defined as when "new learning becomes integrated into practitioner, organizational, and community practices, policies, and procedures (Fixsen et al., 2005, p. 16). Over time the innovation becomes the normal operating procedure and the structural supports, systems, and policies are aligned to the new way of working and communicating. It is at this stage that practitioners can expect to observe the beneficial outcomes of the new practice or program.

Innovation: The unique communities, needs, and circumstances of organizations may require that modifications are needed to realize the greatest impact of a newly introduced program or practice. However, some changes may actually be considered "program drift or threats to fidelity" (Fixsen et al., 2005, p. 17). This can be avoided by first implementing the program or practice with fidelity and then developing modifications. It was noted that programs taking this approach to adapting programs were more successful than those that did not move through full operation (Fixsen et al., 2005, p. 17).

Sustainability: This aspect of implementation is important to consider throughout each stage to ensure long-term survival of the program or practices. A myriad of potential changes in staff, leadership, funding streams, or shifting priorities and politics can derail implementation efforts. School leaders, staff, and stakeholders will want to maintain awareness of potential changes and their subsequent impact on implementation and sustainability.

Recommendation 1: Student Engagement

Initiate a schoolwide process for increasing student engagement and creating a sustainable and supportive learning environment. The aim is to enhance participation, reduce boredom, and increase student achievement in academic and social skills.

LINK TO RESEARCH

Student engagement provides an essential foundation for increasing achievement levels. "Educators must work to build engagement levels if they hope to support students in meeting higher standards" (Learning Point Associates, 2005, p. 2).

Literature about middle school reform acknowledges the importance of an academically challenging and supportive environment to engage young adolescent learners. Student motivation, a meaningful curriculum, and student choice also are important factors for engaging middle-level learners (Caskey & Anfara, 2007; Learning Point Associates, 2005; Newmann, Marks, & Gamoran, 1995).

In a report on the 2009 High School Survey of Student Engagement (HSSSE), which was taken by 42,754 students, Yazzie-Mintz (2010, pp. 2–3) describes a spectrum of student disengagement—from temporary boredom to dropping out—and attributes this disengagement to the following: uninteresting and irrelevant material, work being too challenging or not challenging enough, no interaction with the teacher, not liking the school or the teacher, not seeing value in the assigned work, adults at the school not caring about the student, safety and bullying concerns, schoolwork not connecting to real world or real work, feeling little connection with any adult at the school, teacher favoritism, ineffective instruction or instructional methods, feeling unheard and not responded to or respected, and feelings of frustration and disconnection.

When students feel marginalized or alienated at school, they lose interest and become disengaged. Yazzie-Mintz (2010, p. 17) concludes that there are considerable gaps not only in academic achievement but also in student engagement and suggests the integration of engagement data with academic data as a useful tool for school planning and decision making.

Factors that would increase student engagement, according to the surveyed students (Yazzie-Mintz, pp. 18–23) are as follows: supportive and nurturing schools; increased individualization; classes that are more fun as well as interactive, experiential, and relevant; a schoolwide belief in relationships, respect, and responsibility; coaching and modeling for the staff of good student engagement practices; reflection on and response to student ideas; adult understanding of student skills, strengths, and interests and having these qualities inform instruction; experiential learning and interdisciplinary studies; and opportunities for students to work together on finding solutions to real-world problems and issues.

Students need to build a sense of self-efficacy (Alvermann, 2003) in an inclusive environment in which they can achieve competence. They should be engaged in authentic and personally meaningful work, using a culturally relevant curriculum with an appropriate level of difficulty and challenge—one that requires problem solving (Voke, 2002). In addition, Gordon (2006)

QUICK LINKS: Online Sources for More Information

Center for Mental Health in Schools (Website)
http://smhp.psych.ucla.edu/

Collaborative for Academic, Social, and Emotional Learning (Website)
http://www.casel.org

Illinois Learning Standards for Social/Emotional Learning (Website)
http://isbe.state.il.us/ils/social_emotional/standards.htm

Morningside Center for Teaching Social Responsibility (Website)
http://www.morningsidecenter.org

suggests the recognition and leveraging of individual student strengths and recalls a typical student response from the 2005 Gallup Youth Survey (pp. 77–80):

> "My teacher understood the way that I learned and worked. I was never criticized for my ideas or feelings, but I was met with questions and ideas that could change the way I looked at something." —Jessica, 17, Waverly, IA (p. 77)

A rubric titled the "Partnership Guide for Culturally Responsive Teaching" (Ginsberg & Wlodkowski, 2000, pp. 185–187) offers a list of engagement activities (establishing inclusion, developing a positive attitude, enhancing meaning, and engendering competence) and assessment tools. The Executive Summary of *Engaging Schools* (National Academy of Sciences, 2003) provides 10 recommendations for reaching "the goals of meaningful engagement and genuine improvements in achievement" for high school students (pp. 4–9). Easton (2008) discusses engaging struggling high school students by using experiential learning, essential questions, and a whole-child perspective in curriculum development, instructional strategies, professional development, and teacher evaluations. "If there is a secret to motivation in the classroom," says Gordon (2006, p. 80), "it lies in the interaction between the teacher and the student."

"There is a growing consensus that whatever else is done, schools must also become places where it is easier for students and teachers to know one another well and for students to connect to the school and its purposes, says Sergiovanni (2000. p. 58). "Schools in other words must be caring and learning communities."

IMPLEMENTATION CONSIDERATIONS: WHOLE-SCHOOL PRACTICES

Incorporating student engagement practices should be part of the annual school improvement process. Whole-school practices such as building a safe and supportive school environment are part of this process. Students can learn effectively only in environments in which they feel safe and supported and where their teachers have high expectations for their learning. Implementation of a schoolwide positive behavior plan that is based on prosocial values, social competencies, incentives, and positive peer relationships will lay the foundation for classroom-level work and must occur before the classroom work can begin.

IMPLEMENTATION CONSIDERATIONS: CLASSROOM PRACTICES

Keeping adolescent students focused and engaged in the classroom is quite a challenge amid the entire complex changes—physical, intellectual, emotional, and social—that they experience during this phase of their lives.

1. **Relate lessons to students' lives.**

   A relevant curriculum relates content to the daily lives, concerns, experiences, and pertinent social issues of the learners. Teachers can gain insight into student concerns by taking periodic interest inventories, through informal conversations, and from classroom dialogue (Learning Point Associates, 2005). These issues and topics then can be incorporated into units, lesson plans, and further classroom discussions.

2. **Make the learning authentic.**

   Newmann et al. (1995) advocate for authentic instructional practices to engage learners and offer three criteria for authentic instructional practices: construction of knowledge, disciplined inquiry, and value beyond the school.

   The first criterion for authentic instructional practices is to facilitate the construction of knowledge by acknowledging students' existing understanding and experience. Identifying students' preconceptions and initial understanding is critical to the learning process. "If students' preconceptions are not addressed directly, they often memorize content (e.g., formulas in physics), yet still use their experience-based preconceptions to act in the world" (Donovan & Bransford, 2005, p. 5).

   The second criterion for authentic instructional practices is to facilitate disciplined inquiry through structured activities; the inquiry process is critical to the construction of knowledge (Marzano, 2003; Newmann et al., 1995). This process consists of building on the learner's prior knowledge to develop a deeper understanding, integrating new information, and using the knowledge in new ways.

   The third criterion for authentic instructional practices is value beyond school (Newmann et al., 1995). This criterion may entail connecting content to personal or public issues as well as the demonstration of understanding to an audience beyond the school. Examples of such activities include writing persuasive letters to the city council to advocate for a skate park, interviewing community elders for an oral history project, or communicating the impact of a development project using scientific concepts.

3. **Give students choices.**

   Finally, providing choice in classrooms will engage learners. Providing opportunities for students to select a topic or text acknowledges young adolescents' need to exercise more decision-making power. Giving students ownership in their learning process increases motivation and keeps interest levels high. Students who have a strong interest in a specific subject may wish to pursue an independent project. These projects may be used as a differentiated way to explore the curriculum.

Regard for Adolescent Perspectives in the Classroom

Following are some suggestions for showing regard for adolescent perspectives. These ideas are based on the work of Smutny, Walker, and Meckstroth (1997) and Tomlinson (1999).

- Independent projects will extend learning beyond the curriculum in the textbook and develop enthusiasm, commitment, and academic skills in addition to allowing students to develop deeper relationships with subject matter.
- "Brainstorming with…children on what kinds of projects they could do may also generate ideas teachers may never have thought of on their own" (Smutny, 2000, p. 7).
- Surveying students' interests in the beginning of the school year will give teachers direction in planning activities that will "get students on board" from the start.
- Surveying again at key points during the year will inform teachers of new interests that develop as their students grow.
- Interest centers are designed to motivate students' exploration of topics in which they have a particular interest. They are usually comprised of objects that students can explore, such as shells, leaves, maps, or projects, and are centered around broad topics. Students can choose from the menu and note their choices accordingly. Teachers decide how many items on the menu (minimum) that each student is required to complete. This is adjusted to meet instructional needs on an individual basis.

Examples of Student Engagement

The National Center for School Engagement (2007) compiled the following examples of student engagement best practices from school districts across the United States:

- **Factor in Math Fun:** In Oswego, New York, a Factoring Fan Club was created for 9th grade math students to get them excited about factoring, to keep it fresh in their minds, and to be "good" at factoring. Source: Oswego School District, Oswego, NY
- **Celebrate Pi Day on 3/14:** This event was created to help students enjoy math by offering a fun-filled day honoring pi. Events included a pie eating contest, measuring the diameter and circumference of round objects to calculate pi, and other games related to circles. Source: Independence School District, Independence, VA
- **Mobilize Community:** Community Now! is an asset-based community development tool of the Connection Institute. It uses asset-based language and planning to bring the community together to discover what values the community shares as a whole. It then works to mobilize community members around its assets and shares values to become proactive in its planning rather than reactive. Source: Kittery Children's Leadership Council, Kittery, ME
- **Collaborate With Higher Education:** In Mesquite, Texas, a local college delivers 3.5 hours of continuing education courses ("Educational Opportunities") to truant students and their families. The curriculum includes the negative consequences associated with poor school attendance and the positive consequences associated with scholastic achievement. Discussion of transition from high school to college is discussed and a tour of the college is provided. Source: Dallas Independent School District, TX
- **Offer Incentives:** As a reward, a lunchtime soccer game is organized for students with good attendance by school staff. Source: Summit School District, Frisco, CO
- **Support Positive Behavior:** Jacksonville School District adapted the principles of *Got Fish?* (a book to build business morale) for the classroom. Principles include: being there, play, choosing your behavior, and make their day. Students are recognized when observed "living" each of the principles. Source: Jacksonville School District, Jacksonville, FL
- **Create Student-Generated Classroom Rules:** In Eugene, Oregon, students create a list of classroom rules to be followed. Each student signs off on the rules and is held accountable by fellow students. In addition, they developed their own "honor roll" in which students are recognized for doing their best, following directions, and not talking out more than 3 times a day. Source: Linn Benton Lincoln Education Service District, Eugene, OR
- **Facilitate Positive Student-Teacher Connections:** Some schools in Oregon encourage students to sign up for a one-on-one lunch with their teacher during school time. The teacher uses this time to get to know the student and offers them encouragement and praise. Children and youth benefit when their teachers demonstrate that they care about student well-being in addition to academic success. Source: Linn Benton Lincoln Education Service District, Eugene, OR

Recommendation 2: Instructional Rigor

Implement instructional strategies that increase opportunities for higher-order thinking, analysis and problem solving, and deeper content understanding.

LINK TO RESEARCH

Instruction that pushes students to engage in higher-level thinking leads to deeper learning for students (Marzano, Pickering, & Pollock, 2001; Newmann, Bryk, & Nagaoka, 2001; Pashler et al., 2007). Too often, particularly in schools where students are struggling, instruction focuses on lower-level thinking skills, basic content, and test preparation. Teachers of struggling student groups or tracks usually offer students "less exciting instruction, less emphasis on meaning and conceptualization, and more rote drill and practice activities" than do teachers of high-performing or heterogeneous groups and classes (Cotton, 1989, p. 8). Yet this focus on basic skills does not necessarily improve student achievement.

Several research studies were completed from 1990 to 2003 "which demonstrated that students who experienced higher levels of authentic instruction and assessment showed higher achievement than students who experienced lower levels of authentic instruction and assessment" (Newmann, King, & Carmichael, 2007, p. vii). These results included higher achievement on standardized tests (Newmann et al., 2001). It is also important to note that these results "were consistent for Grades 3–12, across different subject areas (mathematics, social studies, language arts, science), and for different students regardless of race, gender, or socioeconomic status" (Newmann et al., 2007, p. vii).

Teachers need to provide structured opportunities and time for students to take on higher-level cognitive work (Tomlinson, 2003). In discussing the *gradual release of responsibility model,* Fisher and Frey (2008) state that "the cognitive load should shift slowly and purposefully from teacher-as-model, to joint responsibility, to independent practice and application by the learner" (p. 2). This process allows students to become what Graves and Fitzgerald (2003) call "competent, independent learners" (p. 98).

There are several steps to ensure that students are being asked to complete this type of intellectually challenging work, which increases test scores and improves performance on authentic assessment measures as well. Newmann et al. (2001) define *authentically challenging intellectual work* as the "construction of knowledge, through the use of disciplined inquiry, to produce discourse, products, or performances that have value beyond school" (p. 14).

Daggett (2005) agrees, stating that all students should be pushed "to achieve academic excellence, which ultimately boils down to applying rigorous knowledge to unpredictable, real-world situations, such as those that drive our rapidly changing world" (p. 5). Disciplined inquiry, which occurs in the classroom, requires that students "(1) use a prior knowledge base; (2) strive for in-depth understanding rather than superficial awareness; and (3) express their ideas and findings with elaborated communication" (Newmann et al., 2001, p. 15).

QUICK LINKS: Online Sources for More Information

Doing What Works: Providing Research-Based Education Practices Online (website)
http://dww.ed.gov/

Organizing Instruction and Study to Improve Learning (publication)
http://ies.ed.gov/ncee/wwc/pdf/practiceguides/20072004.pdf

IMPLEMENTATION CONSIDERATIONS

1. **Cultivate schoolwide high expectations for students.**
   - Align instruction with the New York State P–12 Common Core Learning Standards. According to New York City Department Of Education (2011), schools in New York City are set to have fully adopted the P–12 Common Core Learning Standards for students to take aligned assessments during the 2014–15 school year. These standards are internationally benchmarked and rigorous; they clearly explain what students at each grade level are expected to know and be able to do. Some schools were involved in pilot programs in 2010–11.
   - Develop a shared understanding of instructional rigor through collaborative curriculum planning, design, and/or redesign. When developing or revising curriculum maps, identify opportunities for formative assessment tasks that encourage higher-level thinking for each unit of study.
   - Through teacher collaboration, develop common student assignments that ask students to perform rigorous and authentic tasks.
   - Through teacher collaboration, develop common student assessments that include rigorous and authentic summative assessment tasks.
   - Monitor implementation of expectations through classroom observations, lesson plan review, and student achievement results on common formative assessments.

2. **Provide professional development for teachers on instructional strategies that push students to engage in higher-order thinking.**
   - Provide ongoing professional development for teachers that describes the importance of pushing students to do higher-level thinking and provides strategies for how to do so. This training may be provided through ongoing professional development sessions and/or support of an instructional coach.
   - Create clear expectations regarding how teachers should implement this professional development in the classroom (e.g., one strategy utilized each day as reflected in lesson plans, authentic assessments at the end of each unit).
   - Identify how this professional development can be incorporated into scheduled teacher collaboration sessions.
   - Monitor implementation of professional development through classroom observations, lesson plan review, and student achievement results on common formative assessments.

3. **Develop examples of authentic intellectual work.**

   The following example can be used to help school leaders and teachers understand what authentic intellectual work might look like.

Examples of High-Scoring and Low-Scoring Measures of Authentic Intellectual Work

The research report *Improving Chicago's Schools: Authentic Intellectual Work and Standardized Tests: Conflict or Coexistence?* by Newmann et al. (2001) provides examples of two sixth-grade writing assignments: one that scored high and one that scored low on measures of authentic intellectual work. The authors conclude each example with a commentary of why the assignment received the score that it did.

High Scoring Writing Assignment

Write a paper persuading someone to do something. Pick any topic that you feel strongly about, convince the reader to agree with your belief, and convince the reader to take a specific action on this belief.

Commentary

In this high scoring assignment, demands for construction of knowledge are evident because students have to select information and organize it into convincing arguments. By asking students to convince others to believe and act in a certain way, the task entails strong demands that the students support their views with reasons or other evidence, which calls for elaborated written communication. Finally, the intellectual challenge is connected to students' lives because they are to write on something they consider to be personally important.

Low Scoring Writing Assignment

Identify the parts of speech of each underlined word below. All eight parts of speech—nouns, pronouns, verbs, adjectives, adverbs, prepositions, conjunctions, and interjections—are included in this exercise.

1. My room is arranged for comfort and efficiency.
2. As you enter, you will find a wooden table on the left.
3. I write and type.
4. There is a book shelf near the table.
5. On this book shelf, I keep both my pencils and paper supplies.
6. I spend many hours in this room.
7. I often read or write there during the evening...

Commentary

This assignment requires no construction of knowledge or elaborated communication, and does not pose a question or problem clearly connected to students' lives. Instead it asks students to recall one-word responses, based on memorization or definitions of parts of speech.

Further examples of authentic intellectual instruction, teachers' assignments, and student work can be found in Newmann, King, and Carmichael, 2007.

DOING WHAT WORKS: Examples From Real Schools

Perrysburg High School

Perrysburg High School in Perrysburg, Ohio serves students in grades 9–12. Perrysburg is a suburb of Toledo, OH.

Perrysburg is the sole high school in the Perrysburg Exempted Village District in Wood County. Nate Ash teaches physics to eleventh and twelfth graders. Ash has taught professional development programs at the Northwest Ohio Center of Excellence in Science and Mathematics Education, and at Bowling Green State University in Ohio. He acts as a mentor to new science teachers.

Ash teaches physics using an inquiry approach. Students do lab activities and solve problems together to understand key concepts in physics. In each lesson he poses higher-order questions to help his students build explanations: How do you know that? What would happen if we changed this variable? How is this similar or different? Ash uses whiteboards in a number of ways: for group problem solving, representing a phenomenon with pictures, and student presentations.

Each new unit/topic is introduced with a hands-on activity. Ash presents a physical situation to students, has them manipulate the variables, and then narrows down their list of variables to design an experiment. Every experiment is introduced with an open-ended question (What would happen if…? What happens when…?). Students work in small groups to describe what happens with graphs, pictures, mathematical equations, and written expression. When they are finished, students present their work to the class in "whiteboard sessions."

Ash explains how the whiteboard sessions give important insights into student thinking: "We can really see if the students understand on every different level how that problem works or how that situation works. And if there is a disjoint between any of those representations, that gives us someplace to go, that gives us something to talk about, something to work through."

Students appreciate being in charge of their own learning, having the opportunity to challenge their peers, and develop critical thinking skills as they explain their ideas in front of a group. As Ash says, "Students really like this approach because, instead of just giving them the answer, it gives them a chance to explain to each other what's going on. And I like it because all the times that I have done physics problems on the board and gone through the answers, I got pretty good at doing physics problems but my students never got any better at all." Ash has found that with this approach his students are no longer trying to find equations that fit the problems, but working to develop a deep understanding of the underlying concepts.

Description excerpted from the Doing What Works Website at http://dww.ed.gov/media/CL/OIS/TopicLevel/case_perrysburg_52708rev.pdf.
This information is in the public domain.

Recommendation 3: Instructional Feedback

Implement instructional strategies that encourage high-quality instructional feedback between the teacher and students or among students.

LINK TO RESEARCH

A meta-analysis of research conducted on instructional feedback, entitled *The Power of Feedback,* found feedback to be one of the most powerful influences on learning and achievement (Hattie & Timperley, 2007). The authors note that "feedback is conceptualized as information provided by an agent (e.g., teacher, peer, book, parent, self, experience) regarding aspects of one's performance or understanding" (p. 81).

Many teachers spend a considerable proportion of their instructional time in whole-class discussions or question-and-answer sessions, but these sessions tend to rehearse existing knowledge rather than create new knowledge for students. Furthermore, teachers generally listen for the "correct" answer instead of listening for what they can learn about the students' thinking (Davis, 1997).

Research indicates that (a) telling students that answers are right or wrong has a negative effect on achievement; (b) providing students with correct answers has a moderate effect; (c) explaining what is correct and what is not correct has a greater effect (Marzano, et al., 2001).

According to the *Classroom Assessment Scoring System–Secondary,* when properly implemented, instructional feedback "expands and extends learning and understanding and encourages student participation" (Pianta, Hambre, Haynes, Mintz, & La Pero, 2007, p. 49). Feedback needs to provide information specifically relating to the task or process of learning that fill a gap between what is understood and what is aimed to be understood (Sadler, 1989). Feedback itself can "take on the form of new instruction, rather than informing the students solely about correctness" (Kulhavy, 1977, p. 212). Through feedback, teachers provide students with opportunities to obtain a deeper understanding of material and concepts through back and forth exchanges called "feedback loops" and by providing additional information; opportunities to explain their thinking and rationale for response and actions; opportunities to perform at higher levels than they would be able to perform independently through scaffolding; and opportunities for increased student involvement and persistence through encouragement and affirmation (Pianta et al., 2007, p. 49).

IMPLEMENTATION CONSIDERATIONS

There are many ways in which teachers can deliver feedback to students and for students to receive feedback from teachers, peers, and other sources. For students, it means gaining information about how and what they understand and misunderstand, finding directions and strategies that they must take to improve, and seeking assistance to understand the goals of the learning (Bangert-Drowns, Kulik, Kulik, & Morgan, 1991).

QUICK LINKS: Online Sources for More Information

Organizing Instruction and Study to Improve Student Learning (Publication)
http://ies.ed.gov/ncee/wwc/pdf/practiceguides/20072004.pdf

Focus on Effectiveness (Website)
http://www.netc.org/focus/strategies/

Using Higher-Order Questions to Encourage Explanations (Website)
http://dww.ed.gov/How-to-Organize-Your-Teaching/Higher-Order-Questions/see/?T_ID=19&P_ID=43

Doing What Works, Sample Essential Questions by Grade Level (Publication)
http://dww.ed.gov/launcher.cfm?media/CL/OIS/HQ/See/584_hq_mats_essential_questions.pdf

Doing What Works, Student Work: Explanation of Math Answer (Publication)
http://dww.ed.gov/launcher.cfm?media/CL/OIS/HQ/See/585_hq_mats_student_explanation-1.pdf

Doing What Works, Lesson Plan: Socratic Seminar Planning Form (Publication)
http://dww.ed.gov/launcher.cfm?media/CL/OIS/HQ/See/583_hq_mats_seminars.pdf

Good Feedback

- Clear and unambiguous
- Specific
- Supportive, formative, and developmental
- Timely
- Understood

1. **Provide teachers with ongoing professional development opportunities for teachers to learn to respond effectively during whole class discussions and when providing feedback to individual students and small groups.**
   - **Workshops** – Identify workshops and other professional learning opportunities for teachers to learn the value of feedback. Focus professional development on building opportunities for student explanations in the classroom.
   - **Peer observations** – Support teacher collaboration by giving them tools designed to help them reflect on a peer's practice. Observations should focus on the use of questioning and feedback in classroom discussions and give each other feedback on the questions they ask and the kinds of student responses generated.
   - **Discuss classroom examples** – Provide examples for teachers to discuss how teachers help students to make their thinking visible and get feedback on their explanations. Discuss the strengths and weakness of instructional approaches used to encourage explanations.

2. **Provide opportunities for teachers to incorporate instructional strategies that facilitate high quality feedback into curriculum documents and lesson plans.**

   Include these recommendations from the Teaching Center (2009):

   - **Include notes of when they will pause to ask and answer questions.** Asking questions throughout the class will not only make the class more interactive, but also help teachers measure and improve student learning.
   - **Ask a mix of different types of questions.** Use *closed questions,* or questions that have a limited number of correct answers, to test students' comprehension and retention of important information. Also ask *managerial questions* to ensure, for example, that your students understand an assignment or have access to necessary materials. *Open questions,* which prompt multiple and sometimes conflicting answers, are often the most effective in encouraging discussion and active learning in the classroom.
   - **Wait for students to think and formulate responses.** Waiting 5–10 seconds will increase the number of students who volunteer to answer and will lead to longer, more complex answers. If students do not volunteer before 5 seconds have passed, teachers should refrain from answering their own question, which will only communicate to students that if they do not answer, teachers will do their thinking for them. If the students are unable to answer after sufficient time for thinking has passed, rephrase the question.

- **Do not interrupt students' answers.** Often, teachers find themselves wanting to interrupt because they think they know what the student is going to say, or simply because they are passionate about the material. Teachers should resist this temptation. Hearing the students' full responses will allow them to give them credit for their ideas and to determine when they have not yet understood the material.
- **Show interest in students' answers, whether right or wrong.** Teachers should encourage students when they are offering answers by nodding, looking at them, and using facial expressions that show they are listening and engaged.
- **Develop responses that keep students thinking.** For example, ask the rest of the class to respond to an idea that one student has just presented, or ask the student who answered to explain the thinking that led to her answer.
- **If a student gives an incorrect or weak answer, point out what is incorrect or weak about the answer, but ask the student a follow-up question that will lead that student, and the class, to the correct or stronger answer.** For example, note that the student's answer overlooks the most important conclusion of the topic being discussed, teachers should then ask that same student to try to recall what that conclusion is. If he or she does not recall the conclusion, open this question up to the class.
- **Follow a yes-or-no question with an additional question.** For example, follow up by asking students to explain why they answered the way they did, to provide evidence or an example, or to respond to a yes-or-no answer given by another student. It's insufficient and shortsighted to rely on quick, right answers as indications of students' knowledge of subject matter. Probe children's thinking when they respond. Ask: Why do you think that? Why does that make sense? Convince us. Prove it. Does anyone have a different way to think about the problem? Does anyone have another explanation?

DOING WHAT WORKS: Examples From Real Schools

Using Instructional Feedback to Promote Learning

In February 2010, the Bill and Melinda Gates Foundation issued a report: *Small High School at Work: A Case Study of Six Gates-Funded Schools in New York City,* a case study of six public high schools. Guided by the research literature on effective school (and instructional) practices, the report documents evidence and examples of high-quality instruction that promotes student learning and engages students in a deep understanding of material. Recommended tactics include metacognitive skill-building, frequent assessment and feedback, and quality questioning techniques. Danielson's (2007) framework for teaching identifies the quality of teacher questions as one component of rigorous instruction. Students must be encouraged to both ask and answer challenging questions. These questions should require students to justify their arguments and responses, pressing for clarification and explanations when needed.

QUALITY QUESTIONING TECHNIQUES AND FEEDBACK LOOPS

An 11th grade social studies class at School 6 was studying the Progressive Era. Following an introduction to relevant vocabulary, students analyzed a political cartoon that represented President Theodore Roosevelt as a lion tamer. The teacher posed several questions about the cartoon to the whole class. In the example below, the teacher frequently probed students and asked students to elaborate on their answers by providing specific examples. The responses elicited debate as to whether the President would be able to control the trusts or not.

"What might President Roosevelt's personality be like based on what you see in the cartoon?"

> "He looks serious."
>
> "He looks powerful."
>
> "He looks strict."
>
> "He looks fearless."

"Does the cartoonist seem to believe that President Roosevelt will be able to control the trusts?"

> "He has a whip. I think so…"

"Why do you think this?"

> "I don't know because the big business have the money and the power."
>
> "Yeah, but they have a monopoly and the businesses use their power over people who have no rights."
>
> "The President will free the people from big business and create rights to protect the people."

MODELING COMPLEX THINKING AND PROCESSING

Teachers model complex thinking by demonstrating the process and steps they use to analyze and synthesize information and to solve problems.

A 10th grade English teacher at School 3 verbalized her thought process on a reading-response assignment she had given: "Ask a question of your text and explain your thought process." The question the teacher asked of *Catcher in the Rye* was, "Will Holden ever be happy?" She explained, "My thought process was, I am wondering this because he seems totally depressed and has no goals or hope." Later in the period, the teacher modeled inference making. As she read aloud from the text, she stopped to point out when she was making an inference: "I'm going to model what inference is because we are working on finding quotes to support our statements: I'm going to infer that Holden is sweaty because he is nervous.... I'm going to infer that Holden is good at heart; he gives the benefit of the doubt. You can point to these lines [in the book] as evidence."

DOING WHAT WORKS: Examples From Real Schools *(continued)*

ENCOURAGING METACOGNITION

Metacognitive skills include noticing when one doesn't understand something and taking steps to remedy the situation, and formulating questions.

In an 11th – 12th grade mathematics class at School 3, the teacher encouraged students to make internal thought processes overt: "How did you solve this equation?" "Does anyone else have another way to solve the equation?"

At School 5, in an 11th grade English class, the teacher modeled and encouraged metacognitive behavior: "Check your notes. Do you think you took good notes on this topic?...I see that some of us take notes during the video and some of us take notes later as we discuss with group-mates. It would be helpful to take notes as you go to help you remember."

The 9th grade English teacher at School 2, asked one group of students to listen to another group have a discussion about the merits of wearing school uniforms. The listeners were asked to write down comments or questions about the other group's discussion. After 10 minutes, the listener group asked questions and made comments about the discussion. The teacher encouraged the listeners to attend to the justifications and evidence students presented to support their opinion. She also commented on and asked students about the quality of the arguments.

Adapted from pages 50–57 of *Small High Schools at Work: A Case Study of Six Gates-Funded Schools in New York City.*
Cheri Fancsali, Reva Jaffe-Walter, Vernay Mitchell-McKnight, Nancy Nevarez, Eliana Orellana, and Lea Williams Rose, available online at http://www.aed.org/Publications/loader.cfm?url=/commonspot/security/getfile.cfm&pageid=35987
This report was published in 2010 by The Academy for Educational Development and is in the public domain.

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0915_08/11