Overcoming Barriers to the Effective Implementation of Educational Information Systems

New York City’s Achievement Reporting and Innovation System (ARIS)

James S. Liebman
Simon H. Rifkind Professor
Columbia Law School

Educational Information Systems for Innovation and Improvement Workshop, October 14, 2010
Building K-12 Learning Organizations

**EMPOWER**
- Devolve Authority to Principals, Ending Program Mandates and Categorical Grants
- Distribute Instructional Leadership within Schools
- Fund Schools Per Pupil, Weighted to Need
- Administer Schools thru Self-Affiliated Clusters
- Replace Supervisors with Accountable Facilitators
- Manage Portfolio of Schools

**ENABLE**
- Frequently Assess Student Learning, Strengths and Weaknesses
- Provide Data to Educators and Parents, with Multiple Diagnostic Comparisons
- Train Educators to Work in Teams to Diagnose and Cure Instructional Failure
- Distribute Knowledge Horizontally (Small Innovation) and Conduct R&D (Big Innovation)

**EVALUATE**
- Rate Schools and Educators Based on Student Learning, Given Student Challenge (Lagging)
- Qualitatively Review Schools and Educators Based on Strategic Use of Available Tools (Leading)
- Survey Parents/Students/Teachers on School’s Learning Conditions & Central Support (Leading)
- Align to State and Federal Metrics

**ENFORCE CONSEQUENCES**
- Compensate and Reward Schools, Principals, Teams and Teachers Based on Student Learning Gains and Strategic Use of Available Resources
- Close or Redesign Schools, Counsel Out Teachers, and Deny Tenure Based on Evidence of Chronic Failure
- Align All Measures of Success and Forms of Recognition to Evaluation Measures
# Building K-12 Learning Organizations

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After Stagnating, NYC’s Graduation Rate Has Increased

Percent of Students in a Cohort Graduating from High School in 4 Years

1986-1992: + 9%
1992-2002: + 0%
2002-2009: + 33%

NYC Calculation Method
NY State Calculation Method
Federal Calculation Method (includes students who transfer out)
Changing the Way New York City Schools Work

Achievement Reporting and Innovation System

Parent Link
- Translation
- Walkthroughs
- Student Profile

My Students
- Student Profiles
- Views (Class, Grade, and School)

Reports
- Graphical Information
- Pre-defined & Custom

Connect
- Communities
- Resources
My Students: 3-8 English Language Arts Fixed View

Attendance
NY State ELA Test
Views
Filters
Acuity
Performance Series
## My Students: High School Graduation Req’ts Fixed View

### HS Graduation Requirements

**School:** Kerk Groll School (2)  
**Class:** Class 305  
**Teacher:** Gwen Lyons  
**Filter:** All Students

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Aggregate Data

The Aggregate School View displays key performance metrics and some administrative information for educators who work with multiple schools.

Principals see similar data for their own school. Teachers can see their own classes.
### Customized Reports

#### Pop Comparison Chart: Math NYS Tests by Class

For Robert W. Wilson Middle School

<table>
<thead>
<tr>
<th>Population</th>
<th>Time</th>
<th>Measure</th>
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<tr>
<td>Network: Empowerment Network 1</td>
<td>Enrollment at end of selected school year</td>
<td>Math NYS Tests Overall</td>
</tr>
<tr>
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<td>(Annual) 07 - 08</td>
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<tr>
<td>Teacher: 3 Teachers</td>
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<tr>
<td>Class: 10 Classes</td>
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<td>Grades: Gr. 7, Gr. 8</td>
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<td>Subjects: Math</td>
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<tr>
<td>Filter: 504 Status Value: No</td>
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</table>

#### Graphs

- **7 MATH - 01**: 13% Level 1, 13% Level 2, 52% Level 3, 23% Level 4
- **7 MATH - 02**: 11% Level 1, 38% Level 2, 46% Level 3
- **7 MATH - 03**: 11% Level 1, 31% Level 2, 29% Level 3, 29% Level 4
- **8 MATH - 01**: 26% Level 1, 42% Level 2, 14% Level 3, 32% Level 4
- **8 MATH - 02**: 26% Level 1, 31% Level 2, 31% Level 3, 16% Level 4
- **8 MATH - 03**: 8% Level 1, 47% Level 2, 26% Level 3, 33% Level 4
- **ALG - 01**: 34% Level 1, 47% Level 2, 21% Level 3, 26% Level 4
- **ALG - 02**: 13% Level 1, 29% Level 2, 31% Level 3, 27% Level 4

### Notes

- **Class** can include homerooms (official classes), course sections, and groups created in ARIS.
- **DOE Employees** may access and use individual student data only for legitimate educational purposes, and are required to maintain strict confidentiality of such data.
- Populations with no data are not included.

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**Page 1 of 2**
• Key knowledge is developed locally in individual schools in response to problems presented by individual students and groups of students.

• Connect enables collaboration through web 2.0 tools (wikis, blogs, discussion forums, communities) so that educators can share and refine best practices – describe what worked (or did not) when they tried to solve a similar problem. Provides:
  – The framework for ongoing sharing of outcomes and learning across teams, across schools, and across the city.
  – A forum for discussion of instructional practices, through public and private communities
  – A library of instructional resources, many tagged to specific state standards.
ARIS Parent Link: Log In

Parents can log on at: www.arisparentlink.org
ARIS Parent Link: Welcome

Ortiz, Manuel Jose

Student Info:
ID: 15936
Grade: K
Date of Birth: 9/1/99
Class: BM9 (Generic, Calia)
School: 3-8 Assessment And Credit School

What is Manuel learning?
The New York State standards describe what your child is expected to learn this year. You can view the New York State ELA standards here.

- Summary of important skills that grade children are expected to learn in English Language Arts this year.

How is Manuel doing?
In APL, you can see the same information that your child’s teacher sees in the ARIS student profile. For recent scores, you can also view a walkthrough to learn how your child is doing in English Language Arts this year. In APL, you can see the same information that your child’s teacher sees in the ARIS student profile.

- Acuity Instructionally Targeted Assessment: English Language Arts
- Acuity ITA: English Language Arts
- Acuity Predictive Assessment: English Language Arts
- Grade 3-8 New York State Test: English Language Arts

How can I help my child learn?
Families are important partners in the education of their children. Ask your child’s teacher what you can do at home to help your child develop in English Language Arts. Each walkthrough in APL ends with a list of steps you can take at home to help your child develop skills in English Language Arts.
ARIS Parent Link: Customized Walkthroughs

What is this assessment?

How does this assessment help you teach my child?

How did my child do on this assessment?

How can I help my child succeed?
Creating Data Systems: Management Risks

• Quality of Vendor
  – Shared vision with business owner
  – Product management (commitment to user perspective)
  – Project management (weaker than you think)
  – Trust but verify

• Internal Partners
  – Shared vision, commitment, question-answering vs. problem-solving mode
  – Business vs. technology perspective
  – Careful documentation of expectations, dependencies

• Capturing the User Perspective
  – Crucial but demonstrable only through actual use
  – Monitor what users are doing “in the meantime”
  – One thing leads to another / what have you done for me lately (ARIS Local)

• Data Sources: Each One is a War

• Deployment
  – Don’t underestimate: it’s not the end; it’s the beginning
  – Design it to learn from it, despite the chaos; listen carefully to complainers

• Security
Protecting Individual Student Data

The ability to log in to ARIS does not automatically provide access to private student-level data. Federal law limits who may view that information.

Teachers automatically have access to information on the students enrolled in their classes.

Principals automatically have access to information on students enrolled in their school.

A principal can grant school staff members access to student-level information if there is a legitimate educational need.

Central office may grant central staff member access to certain students’ information if there is a legitimate educational need.

Parents’ and guardians’ school provides them with notification of their child’s unique I.D. and, in a separate circulation, with a temporary password. When they log in the first time, they are urged to change the password.

Aggregate data for all classrooms, schools, networks, the district as a whole (exclusive of cells with 5 or fewer students) is available to all educators for comparative purposes.
Using Data Systems: Consumer-Related Risks

<table>
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<th>Response</th>
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<td>Inquiry Teams</td>
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| Teachers *Won’t* Use the Data (Accountability/Consequences Vs. Empowerment/Enablement) | • Clearly Delineate Summative and Formative Data  
• Find the Right Balance (and Repeat)  
• Use Data → Believe in Data → Add Data |
| Parents Can’t Use the Data                     | Data-Informed Parent/Teacher Conferences                                                 |
| The Public Won’t Tolerate the Cost             | • Teacher and Parent Satisfaction  
• In the Meantime, Public Information                                                     |
Factors affecting data-informed inquiry and improvement:

• Quality of data (but using it is the only way to improve it – data specialists)

• Teacher access to the data – ability to navigate the new system; ability to record local data and “mix and match” it with central data

• Teacher ability to interpret data and diagnose student needs

• Teacher ability to diagnose the conditions of learning that led to those needs and “prescribe” an instructional change strategy

• Teacher ability to seek out additional resources (e.g., colleagues, research, instructional resources)

• Teacher ability to monitor and evaluate whether treatments and resources are effective, and modify them as needed

• Teacher ability to use the new information generated to re-diagnose the instructional barriers to the students who do not respond to treatment

• Teacher ability to analyze larger systems that produced the conditions of learning and to design and implement system-level change strategies

Enabling Educators to Use Data: Inquiry Teams

- Principal's buy-in and launch
- School-wide self-assessment and goal-setting
- Teacher team formation: vast majority of teachers on teams with regular meeting times
- Structured support for teacher team facilitators

Set-up

- Examining student work/data
- Engaging external resources
- Reflecting on teacher teams' results and considering school-wide change (teachers assume leadership role)
- Analyzing school capacity and planning for school-wide change

Instructional inquiry cycle (multiple teams)

- Revise and repeat inquiry cycle
- Monitor student progress with common assessments
- Defining instructional strategy and setting goals
- Taking action: implement instructional strategy

Take action to build teacher and school capacity

School-wide inquiry cycle

- Share and celebrate work
ARIS Data Warehouse And Content Repository

ARIS provides one place where all critical data and knowledge resources can be easily viewed and used by all DOE educators.

ARIS uses nightly feeds from all DOE academic data systems to generate up-to-date reports that identify student needs and facilitate daily planning.

By organizing data and sharing quality content, ARIS saves teacher time in compiling information from multiple sources, preparing their classes and meeting the challenges that particular students present.

By making it easy for educators to contribute content, work together to design solutions, and comment on the quality of available instructional resources, ARIS expands teachers’ knowledge base and role in the leadership of our schools.