Case Study #4: Rochester Childfirst Network's Use of Linked Data to Support Classroom Teaching

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Rochester Childfirst Network provides a range of services including early intervention, home-and center-based care, and pre-kindergarten. This case study describes their use of COMET, a web-based data system supported by The Children's Institute of the University of Rochester, to link data within their program and with other programs in the Rochester Early Childhood Assessment Partnership. The case study highlights an example of linking data by entering information into a single, shared community-wide database.

The mission of the Rochester Childfirst Network (RCN) is to advance "the quality of early care and education in Western New York through leadership, advocacy, and innovative direct services to children."[1] They offer an array of services to support children's healthy development. The program serves about 200 children and receives funding from the New York Department of Human Services, New York Department of Education, Monroe County early intervention, Rochester City School District, foundations, and private donors. Focusing on services for children birth through age 12, RCN oversees the following five core services:

- Home- and center-based care for infants, toddlers, and preschoolers;
- Universal pre-kindergarten[2] for eligible 3- and 4-year-olds who live in the Rochester City School District;
- Special education and early intervention services for children birth through age 5;
- After school and summer enrichment programs for school-age children; and
- Professional development, training, and support for home-based providers.

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[1] To learn more about RCN, please visit their website: http://rcn4kids.org/.
[2] Rochester has 56 pre-kindergarten sites that offer free pre-kindergarten services for eligible 3- and 4-year-old children.

In 1998 after RCN was selected as a universal pre-kindergarten provider, they joined the Rochester Early Childhood Assessment Partnership (RECAP)[3] to collaborate with other local early care and education (ECE) programs to link together child, teacher, and classroom assessment data to support teachers' decisions in the classroom and help them tailor curriculum and classroom activities. ECE programs participating in RECAP agreed to use the tools described in Table 1 to measure classroom quality and child development.

Table 1: RCN data collected and linked through RECAP[4]

Measure	Method	Outcomes measured
Early Childhood Classroom Environment Rating Scale-Revised (ECERS-R)	Classroom observation by independent observer	Global classroom quality
Classroom Assessment Scoring System (CLASS)	Classroom observation by independent observer	Teacher-child interactions
Child Observation Record (COR)	Teacher observation of children's skills	Academic, motor, and social skills
Teacher-Child Rating Scale (T-CRS)	Teacher rating of children's skills	Social, emotional and behavioral adjustment
Brigance Early Childhood Screener	Child assessment	Physical development, language, academic/cognitive, self-help, and social-emotional skills
Family Involvement Questionnaire (FIQ)	Parent survey	Parental involvement
Parent-Child Rating Scale (P-CRS)	Parent rating of child's skills	Social, emotional, and behavioral adjustment

In 2009, RCN began using a new data system, COMET, to track, link, and analyze program enrollment, attendance, and assessment information. The COMET system allows RCN to link together child and teacher data from their own program and, in some cases, examine data that are linked together across multiple ECE programs.[5] During enrollment, families complete application forms which describe the child assessments RCN conducts throughout the year. Annually, parents receive a letter about the RECAP program and an explanation about how these data are used to inform instruction.

COMET[6] is a web-based data system that is used by 140 classrooms in the Rochester City School District and community based organizations participating in RECAP. RCN uses COMET to link attendance and assessment data at the child, classroom, program, and organization level with information collected internally and by other participating ECE programs. This means that:

• Teachers are able to link child assessment and classroom quality data to examine changes over time to better understand children's development and improve instruction.

• Administrators are able to link data across programs to identify areas for professional development (e.g., examine their classroom quality data relative to other ECE programs).

• Families receive information from teachers about their child's development as well as about progress the program is making overall. During conferences, teachers discuss the COMET reports on children's developmental progress with

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[3] To learn more about RECAP, see: https://www.childrensinstitute.net/assessment/early-care-and-education/recap
[4] RECAP 2013-2014 Seventeenth Annual Report | November 2014
[5] In this resource, data are considered linked when information from two or more separate data systems or databases are shared, connected, combined, or merged. These data systems or databases may be housed in the same program or in multiple programs or agencies. Linking can occur in various ways ranging from simple, (e.g., sharing Rochester spreadsheet) to more complex (e.g., merging two databases into a single file), to very complex (e.g., fully integrating data across multiple agencies). However, all linked data have the potential to provide useful information to support ECE program improvement.
[6] For more information on COMET, please visit: https://www.childrensinstitute.net/comet

parents. The information helps teachers talk with parents about possible strategies to support a child's learning at home.

School districts, community organizations, and evaluators using COMET meet twice a month to review available data, recommend changes, and address data quality issues. Each participating program pays an annual fee to use COMET based on the number of children they have entered in the system. RECAP's policy advocacy group facilitates conversations and gathers input from community members quarterly. Developed and updated through these stakeholder input processes that includes local ECE programs, schools, parents, and community organizations, the COMET system annually stores data on approximately 2,500 children in 220 classrooms. These data are used at the program level to help guide the decisions of teachers, administrators, and school leaders by providing easily accessible, real-time information on children's development and classroom quality over time. The information is also used to target interventions to address developmental delays for particular children.

The Children's Institute,[7] a non-profit research organization, manages the COMET system, providing technical and research assistance to RCN and other RECAP participants. According to leaders at Children's Institute, COMET complies with Health Insurance Portability and Accountability Act (HIPAA) and Family Educational Rights and Privacy Act (FERPA) regulations where applicable.[8] COMET is part of the school district's Student Management System (i.e., data system), and RCN and the other RECAP participants are part of the district's pre-kindergarten program. Thus, the RCN data become part of a child's student record with the same access and protections as other student level data under FERPA. COMET also is protected using multiple security methods (i.e., firewalls, passwords, encryptions, etc.) to prevent unauthorized users from gaining access. Teachers receive about one hour of training on how to enter data, develop reports, and analyze outputs. Administrators, who are accessing the more advanced reporting features, receive about two to three hours of training. These hours vary based on staff experience and skill level. RCN teachers receive training on how to properly collect data, conduct assessments, and interpret assessment results to inform instruction.

The following sections describe how the Rochester Childfirst Network uses data linked through COMET to guide teacher practice and evaluate interventions.

Process for Linking Data Across Programs

To link data within COMET, each program is assigned a unique identification number within the system. Next, the system creates a user profile that includes information about the program site(s), teachers, and classrooms. RCN administrators and teachers are then assigned access to information based on their roles and responsibilities. For example, a teacher has access to information only about the children in her classroom whereas a program director can view data from all classrooms in the program. Program directors may view de-identified classroom level quality scores from other programs to understand the range of scores in the community.

The COMET system includes data from school districts and other community organizations that RCN ECE directors and teachers can access under certain conditions (e.g., de-identified or with proper permissions). To link data for children who have participated in different programs or received other community services, each child is assigned a school district ID number by the Children's Institute. For children that do not have a school district ID, the child's last name, first name, and

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[7] Children's Institute is affiliated with the University of Rochester
[8] Not all early childhood programs are required to comply with the requirements of FERPA and/or HIPAA when sharing or linking data. Requirements to comply with these privacy acts vary depending on the type of agency, the type of data to be shared or linked, and the intended use of that data. Consult the Data and Privacy Technical Assistance center for additional information on FERPA: http://ptac.ed.gov/early-childhood-data-privacy. Most early childhood programs are not subject to HIPAA unless handling certain kinds of health information. For more information on HIPAA, see: http://www.hhs.gov/hipaa/.

date of birth or another assigned ID are used by COMET to match child information. As soon as an RCN staff member enters child attendance and assessment data into the system, a report is automatically generated that includes charts, graphs, and descriptions about each child's development. Because the data system stores data over time, these reports can show a teacher how a child is progressing in various areas. Teachers use these reports to plan class activities and to share information about each child's progress during parent conferences. Data linked from previous assessments, usually conducted three times a year, are intended to inform decisions to improve the program and adjust the curriculum based on the individual needs of children. This process helps RCN teachers determine where children are developmentally and differentiate their instruction.

In addition to child assessments, RCN regularly assesses program quality to provide feedback to teachers using measures of classroom environment. The next section describes RCN's focus on "low-stakes" assessments to support the collection and linkage of teacher and child performance data to improve program quality.

"Low-Stakes" Assessments Are Key to Improvement

RCN emphasizes the importance of having assessments that are low-stakes and timely to ensure that teachers are motivated and engaged in collecting and using the data. *Low-stakes* means that the classroom assessments are not used to evaluate individual teachers. Community and school-based organizations participating in RECAP selected the Early Childhood Environment Rating Scale-Revised[9] (ECERS-R) and Classroom Assessment Scoring System[10] (CLASS) to measure classroom quality across programs. Using the COMET system, teachers are able to view ratings of their own classroom quality next to de-identified classroom quality ratings from other programs. The information from other programs is anonymous so that it protects the privacy of other teachers and programs. A teacher may give permission for mentors or master teachers to view her classroom data so that they can offer advice and support. This unique approach to low-stakes assessment data minimizes anxiety about others' use of the data to judge teachers and instead encourages teachers to use the data to plan their own professional development. As a result, teachers regularly use ratings of their classroom quality to identify strengths and areas of improvement. For example, a teacher may work with a master teacher to understand and develop a plan to improve their CLASS score related to instructional support.

Addressing the Summer Knowledge Gap for Preschoolers

In addition to regular classroom planning, RCN has used linked data to identify a need for and then examine targeted inventions offered to help strengthen children's skills. For example, the Children's Institute analyzed results from the Child Observation Record across multiple ECE programs in RECAP, examining trends in the data from fall to spring of pre-k to the beginning of kindergarten. This required them to link child data over time and across programs. The data suggested that some children were experiencing a summer knowledge gap between the end of pre-k and the beginning of kindergarten. In other words, the children's academic skills declined during the summer after they left pre-k and were waiting to enter kindergarten. Program leaders wanted to know whether a summer program could help children maintain their skills. They developed a 30-day summer pilot program to help children who had finished pre-k maintain their skills over the summer before entering kindergarten. RCN and two other ECE programs in Rochester participated in the pilot program. Teachers in the summer program were able to access, through COMET, developmental assessment data for children to help them individualize instruction. At the end of the program, children who participated in the summer

[9] Harms, T, Clifford, R. M. & Cryer, D. (1998). *Early Childhood Environment Rating Scale-Revised Edition.* New York: Teachers College Press.
[10] Pianta, R. C., La Paro, K., & Hamre, B. (2004). *Classroom Assessment Scoring System: Pre-Kindergarten.* Charlottesville, VA: University of Virginia Center for Advanced Study of Teaching and Learning.

program made developmental gains in academic and social skills.[11] These pilot data do not allow the program to make causal conclusions or determine the impact of the summer program because there may have been other factors that influenced the gains these children made over the summer. However, having this promising descriptive data from the pilot led to a discussion about the possibility of expanding the program to serve more children.

Summary

Linking data to inform classroom decisions is an essential part of RCN's work to continuously improve quality. To do this, teachers need to have easy access to comprehensive data about their classroom and training on how to properly interpret and use the findings to modify classroom practices. RCN's participation in RECAP with training and research support from the Children's Institute has been critical to their capacity to access and use linked data. RCN continues to partner with RECAP as they plan future enhancements, improve the data collected and support how it is used by teachers in the classroom.

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[11] Lotyczewski, B.S., Story, M., & Hightower, A.D. (2014). *RECAP special report: 2014 UPK summer program outcome summary*. Children's Institute Technical Report T14-004.