Montgomery County Public Schools

Evaluation Brief

April 2008 Program Evaluation Unit

The Effect of Organizational Factors on the Implementation of the Collaborative Action Process (CAP) 2006–2007

Elizabeth Cooper-Martin, Ph.D.[i]

The Office of Shared Accountability (OSA) is evaluating the Collaborative Action Process (CAP) with a focus on implementation. This brief identifies organizational factors that are related to the level of implementation of the CAP problem-solving process (Cooper-Martin & Hickson, 2008a) and infrastructure/ management (Cooper-Martin & Hickson, 2008b).

Background

The Montgomery County Public Schools (MCPS) developed CAP to provide an improved service delivery model and to impact overrepresentation of certain student groups in special education (Weast, 2005). CAP is a problem-solving framework for teams of teachers to resolve student difficulties (academic or behavioral) within general education through use of evidence-based interventions and systematic monitoring of student progress. Student response to interventions is the major determinant of the need for special education referral, evaluation, and service.

As of fall 2006, 61 schools were chosen to implement CAP. To do so, a school organizes teams by grade level or subject area with a coach for each team, creates a building-level team, and identifies a facilitator as the key CAP coordinator within the school. District-level CAP consultants support implementation in schools.

Based on research of CAP and similar problem-solving models (Appendix A), the following factors were chosen for the current study:

- District support from CAP consultant
- Support from school administrator
- Staff members' CAP knowledge and skill
- Staff members' attitudes about the feasibility and the benefits of participation in CAP

The evaluation uses a multi-method data collection strategy to address the following questions:

1. What organizational factors are related to the level of implementation of the CAP problem-solving process?
2. What organizational factors are related to the level of implementation of the roles and responsibilities of CAP staff?

Summary of Methodology

Data sources were interviews with school administrators; online surveys of CAP facilitators, CAP coaches, and teachers/staff; and case documents from a systematic sample of 30 schools (Appendix B).

Summary of Findings and Recommendations

The first finding concerned which organizational factors were related to the problem-solving process. Staff members' knowledge of CAP and their attitude had a small influence on the level of implementation of selected problem-solving criteria. The other factors had no influence on the problem-solving process.

The second finding concerned which organizational factors were related to roles of CAP staff. Staff members' attitude had a small influence on one or two roles for facilitators, coaches, and teachers. District support had a moderate influence on most of the administrators' roles and on a limited number of the facilitators' roles. Administrator support had a moderate influence on about one half of the coaches' roles, a small influence on most of the teachers' roles, and no influence on facilitators' roles. The influence of administrator support was always positive, meaning that higher levels of support were associated with higher levels of implementation.

Overall, staff members' knowledge of CAP showed the strongest influence on CAP implementation. It was related to more problem-solving criteria than any other factor. It was related to at least a few roles for each staff group, including several roles that were not at full implementation for coaches and teachers/staff, and had a larger influence than administrator support for these two staff groups. The influence was always positive, meaning that higher levels of knowledge were associated with higher levels of implementation.

Recommendations to improve implementation of collaborative problem solving within MCPS are as follows:

- Develop support from school administrators for collaborative problem solving. Encourage them to create master schedules that support this process. Provide training on collaborative problem solving at regularly scheduled principal meetings.

- Increase knowledge and skill of team coaches and teachers/staff about collaborative problem solving.
- Focus resources at the school level to build support for building leaders and to increase knowledge of team coaches and teachers.
- Build ownership within MCPS for the use of a collaborative problem-solving methodology. Initially, allow schools flexibility in implementation while best practices are isolated, then synchronize common elements into a guide for problem solving.

Detailed Methodology

Sample. As of September 2006, 61 schools had signed up to implement CAP—47 elementary schools, 10 middle schools, and 4 high schools. A sample of these schools was selected for data collection. Initially, all high schools were included in the sample because there were only four. For elementary and middle schools, the statistical technique of cluster analysis was used to form five groups of similar schools based on the following building-level variables of particular relevance for CAP:

- Number of years implementing CAP
- Student enrollment, 2005–2006
- Combined percentage of African American and Hispanic students, 2005–2006
- Percentage of students receiving special education services, 2005–2006
- Suspension percentage, 2005–2006

One half of the schools in each of the groups formed by the cluster analysis were randomly chosen. Any schools with members serving on the CAP evaluation advisory group were excluded (including one high school). The final sample of 30 schools included 22 elementary, 5 middle, and 3 high schools. (See list in Appendix B.)

Data sources. Three data sources were used for this study: interviews, surveys, and case documents.

In-person interviews were conducted with the school administrator primarily responsible for CAP at each school in the sample. A semi-structured protocol was used; interviews lasted 45 to 60 minutes. A total of 29 interviews, including 25 principals and 4 assistant principals, were completed during April and May 2007.

The second data source was online surveys. One survey was developed specifically for each of the following three groups: CAP facilitators, CAP coaches, and teachers/staff. The latter was intended for all teachers plus all other school-based staff on a CAP team. Links to the surveys were provided via e-mail to each CAP facilitator, who distributed the links to other staff members within the school. Reminders were sent via e-mail to facilitators; additional reminders were sent to schools with response rates below 50%. All surveys were completed during May and June 2007. Program staff and the CAP evaluation advisory group reviewed the interview protocol and survey instruments to enhance content validity of the items. CAP facilitators from 28 schools (93% of the sample), 107 CAP coaches (66% of sampled coaches), and 403 teachers/school-based staff (48% of sampled teachers and CAP team members) completed online surveys.

The third data source was case documents. A total of 112 CAP teams from 26 schools submitted documents representing the team's best case, defined as one of the team's most fully implemented cases.

Problem-solving process. Levels of implementation for the problem-solving process were derived from analysis of the CAP case documents using a rubric—a scoring tool for subjective assessments (Appendix C). Each set of case documents was coded for 10 criteria (Table 1). The result was a rating for each criterion of the level of implementation; values ranged from 1–5. More detail on implementation of the problem-solving process is in Cooper-Martin and Hickson (2008a).

Table 1
Descriptions of CAP Problem-solving Process Criteria

Problem definition is measurable, observable & prioritized (if multiple)
Student's current performance specified and data used to justify concern
Evidence that team considered all factors that influence student progress
Specific goals set (time frame, condition, behavior, criteria)
Evidence of direct link between analysis and intervention
Intervention clearly specified (strategies, materials, when, where, how often, persons responsible)
Intervention plan monitored (graphs/charts, consistently)
Student progress was monitored consistently over time
Direct comparison of student's post intervention performance with baseline data
Decision to continue, modify, or terminate intervention made based on data

Roles and responsibilities. The interview and surveys included items that addressed the expectations for schools on how to implement CAP's infrastructure and management, as described in *CAP school action planning: How to build infrastructure and sustainability* (MCPS, 2005). For each group of respondents, several items addressed their key roles and responsibilities (Appendix D). See Cooper-Martin and Hickson (2008b) for more details on the implementation of roles and responsibilities

Organizational factors. For better reliability, an index, rather than a single item, was used to measure each organizational factor. Multiple items from interviews, surveys, or both were used to form each index as described below. The internal reliability of each index was judged as satisfactory (see values of Cronbach's alpha in Appendix E).

District support was measured as support from CAP consultants who are district-level staff. The items concerned expected roles and responsibilities of CAP consultants (MCPS, 2005). Administrators replied to three items and CAP facilitators to two items about the consultants. Responses to four of these items were summed to construct the final index; one item was excluded because it did not contribute to the overall index (Table E1 in Appendix E).

The six survey items on administrator support were based on items in Kruger and Struzziero (1995). Some items were modified to make them more relevant to the present study. Both facilitators and coaches responded to the same items about support from their administrator using a 5-point agree/disagree scale. The mean response across all items for each respondent was used as the index (Table E3 in Appendix E).

For staff members' CAP knowledge and skill, an earlier CAP evaluation (Wilson, 2006) was used to identify key CAP skills. As recommended by Guskey (2000), respondents provided self-reports on their level of knowledge for each of nine skills using one of the following categories: none, novice, intermediate, or expert. However, "intermediate" replaced Guskey's category of "apprentice." Responses to all items were summed to form the index (Table E5 in Appendix E).

Items on staff members' attitudes about the feasibility and the benefits of participation in CAP were based on two earlier CAP evaluations (Schmidt, 2005; Wilson, 2006). Staff members used a 5-point agree/disagree scale to respond to 13 items. The mean response across 11 items for each respondent was used as the final index; two items were excluded because they did not contribute to the overall index (Table E7 in Appendix E).

Selected responses to each item used in the indexes are shown in Tables E2, E4, E6, and E8 in Appendix E.

Analysis. To measure relationships between each organizational factor and each measure of implementation, Spearman rank-order correlations were used because many of the measures were ordinal. Because sample size affects the level of significance for correlations and sample sizes varied in this study, the size of the correlation was examined using the following rules for interpretation:

- 0 to .1— trivial
- .1 to .3—small
- .3 to .5—moderate
- .5 to .7—large
- .7 to .9—very large

Measures of the problem-solving criteria were based on cases from different CAP teams. However, factor measures from the coach or the staff members of the team that submitted each case were not available because respondents did not identify their CAP team. Thus, school-level measures were used. For coaches and teachers/staff, the median value within each group of respondents was used for staff members' CAP knowledge (because this index was ordinal) and the mean value within each group was used for staff members' attitudes about CAP (because this index was interval).

Detailed Findings

Problem-solving Criteria

This section addresses the first evaluation question on relationships between organizational factors and implementation of the CAP problem-solving process.

District support factor. All correlations between district support and problem-solving criteria were nonsignificant and trivial in size (Table F1 in Appendix F). These findings indicate that district support from CAP consultants did not influence implementation of the problem-solving process.

Support from school administrator factor. All correlations between administrator support, as reported by facilitators or by coaches, and problem-solving criteria were nonsignificant and trivial (Table F1 in Appendix F). These results indicate that support from the school administrator did not influence implementation of the problem-solving process.

Staff members' CAP knowledge and skill factor. For coaches, there was a significant correlation between knowledge of CAP and one problem-solving criterion (i.e., intervention monitored) (Table 2). For teachers/staff who had referred a case, there were significant correlations between knowledge and four problem-solving criteria (i.e., intervention alignment, intervention specified, pre- postcomparison, decision on intervention based on data) (Table 2).

Table 2
Correlations Between Problem-solving Criteria and Knowledge for Coaches and Teachers/Staff (*N*=112)

	Correlation coefficient	
Criterion	Coaches	Teachers/staff
Problem identification	-.09	.16
Baseline data	.07	-.03
Factors analyzed	.06	-.15
Specific goals set	.05	.11
Intervention alignment	.14	.26**
Intervention specified	-.01	.20*
Intervention monitored	.23*	.02
Progress monitored	.15	.11
Pre- postcomparison	.12	.22*
Decision on intervention based on data	.00	.19*

*p<0.05. ** p<0.01.

For both coaches and teachers/staff, all significant correlations were positive and smaller than 0.3, suggesting that CAP knowledge had a small influence on the problem-solving process and that greater CAP knowledge was associated with higher levels of implementation of problem-solving criteria.

For facilitators, correlations between knowledge of CAP and problem-solving criteria were nonsignificant and trivial (Table F1 in Appendix F). These results suggest that facilitator knowledge did not influence the problem-solving process.

Staff members' attitudes about CAP factor. All correlations between coaches' attitudes about CAP and problem-solving criteria were nonsignificant and trivial (Table F1 in Appendix F). These results indicate that coaches' attitudes about CAP did not influence implementation of the problem-solving process.

There was a significant correlation between facilitators' attitude and level of implementation for one criterion (i.e., progress monitored) (Table 3). The correlation was small and negative, suggesting that facilitators' attitudes toward CAP had a small influence on this criterion and that, unexpectedly, more negative attitudes were associated with higher levels of implementation for progress monitored.

Table 3
Correlations Between Problem-solving Criteria and Attitude for Facilitators and Teachers/Staff (*N*=112)

Criterion	Facilitators	Teachers/staff
Problem identification	-.07	.03
Baseline data	-.12	-.16
Factors analyzed	-.09	.05
Specific goals set	-.08	-.06
Intervention alignment	-.02	.02
Intervention specified	.07	.16*
Intervention monitored	-.16	-.07
Progress monitored	-.20*	-.08
Pre- postcomparison	-.13	-.09
Decision on intervention based on data	-.07	-.04

*p<0.05.

For teachers/staff, there was a significant correlation between their attitude and level of implementation for one criterion (i.e., intervention specified) (Table 3). The correlation was small and positive, suggesting that attitudes of teachers/staff toward CAP had a small influence on this problem-solving criterion and that more positive attitudes were associated with higher levels of implementation for intervention specified.

Roles and Responsibilities

This section addresses the second evaluation question on relationships between organizational factors and implementation of roles and responsibilities by staff members.

District support factor. Correlations between district support and roles were not statistically significant for administrators, most likely due to the small sample size (Table 4). However, five of the correlations were close to 0.3, suggesting that district support had a moderate influence on the level of implementation for these roles. Four of these correlations were positive, meaning that more support from the district was related to higher levels of implementation of these roles (e.g., lead staff in data discussions). Unexpectedly, the correlation for one role (i.e., provide time and support) was negative, meaning that less support from the district was related to higher levels of implementation.

Table 4
Correlations Between Administrator Roles and District Support

Role	Correlation coefficient	*N*
Provide vision for CAP	.10	28
Provide action plan for CAP	.27	28
Integrate CAP and school improvement efforts	.11	28
Lead staff in data discussions	.36	24
Provide time and support for CAP	-.32	28
Attend building-level meetings	.31	28
Attend coaching support meetings	.35	28

For facilitators, only one correlation between district support and roles (i.e., collect data about cases) was statistically significant, most likely due to the small sample size (Table 5). A second correlation (i.e., share content of coaching support meetings) approached statistical significance (p<.07). These two correlations were close to 0.3 and positive. These results suggest that district support had a moderate influence on two roles for facilitators and that higher levels of support from CAP consultants were associated with higher levels of implementation for these two roles.

Table 5
Correlations Between Facilitators' Roles and District Support

Role	Correlation coefficient	*N*
Attend coaching support meetings	.15	39
Share content of coaching support meetings	.30	39
Provide training	.16	39
Provide ongoing support about CAP to coaches	.21	39
Lead building-level CAP meetings	.01	38
Collect data about CAP cases	.32*	39
Share information with school administrators	-.22	39

*p<0.05.

Support from school administrator factor. For facilitators, all correlations between their reports on administrator support and their roles were nonsignificant and trivial (or close to it) (Table F2 in

Appendix F). These results indicate that administrator support did not influence the level of implementation of facilitators' roles.

For coaches, correlations between their reports of administrator support and three of their roles in supporting teams (i.e., focus on problem-solving steps, prioritize problems, folder reviews) were significant (Table 6). The significant correlations were all positive and close to 0.3, suggesting that administrator support had a small to moderate influence on three of the coaches' roles and that higher levels of administrator support were related to higher implementation of roles.

Table 6
Correlations Between Coaches' Roles and Administrator Support

Role	Correlation coefficient	*N*
Help team to focus on problem-solving steps	.31**	102
Help team to prioritize problems	.28**	103
Help team to monitor interventions	.18	103
Help team with data collection	.16	103
Help team to do folder reviews	.26**	104
Facilitate CAP team meetings	-.13	100
Attend CAP building-level meetings	-.10	101

*p<0.05. ** p<0.01.

For all staff members and for those who had referred at least one case, there was a positive significant correlation between administrator support (as reported by facilitators) and one role (i.e., number of CAP meetings attended) (Table 7).

Table 7
Correlations Between Teachers/Staff Roles and Administrator Support

	Correlation coefficient (*N*)	
Role	All	Who referred a case
Number of meetings attended	.18** (389)	.14* (285)
Number of cases referred	.01 (387)	-.03 (283)
Collect data for CAP cases	NA	.11 (284)
Review student folders for CAP cases	NA	.14* (284)
Complete CAP forms for CAP cases	NA	.20** (277)
Carry out interventions for CAP cases	NA	.15* (284)
Monitor and evaluate interventions for CAP cases	NA	.18** (284)

*p<0.05. ** p<0.01. *Note*. NA = Not applicable.

Among teachers/staff who had referred cases to CAP, there were positive significant correlations between administrator support and implementation of four of their roles related to a CAP case (Table 7). All these correlations were small; their statistical significance may reflect the relatively large sample size. These results suggest that administrator support had a small influence on the roles of teachers/staff and that higher levels of administrator support were associated with higher levels of implementation.[1]

Staff members' CAP knowledge and skill factor. For facilitators, there were significant correlations between their CAP knowledge and three roles (i.e., provide training, lead building-level meetings, share information with administrators) (Table 8). Each of these correlations was larger than 0.3 and positive, suggesting that facilitators' knowledge had a moderate influence on these roles and that greater knowledge was related to higher levels of implementation.

Table 8
Correlations Between Facilitators' Roles and Level of Knowledge

Role	Correlation coefficient	*N*
Attend coaching support meetings	.05	39
Share content of coaching support meetings	-.02	39
Provide training	.36*	39
Provide ongoing support about CAP to coaches	.24	39
Lead building-level CAP meetings	.35*	38
Collect data about CAP cases	.14	39
Share information with school administrators	.46**	39

*p<0.05. ** p<0.01.

For coaches, there were six significant correlations of small or moderate size between their CAP knowledge and roles (Table 9).

Table 9
Correlations Between Coaches' Roles and Level of Knowledge

Role	Correlation coefficient	*N*
Help team to focus on problem-solving steps	.37**	103
Help team to prioritize problems	.45**	104
Help team to monitor interventions	.33**	104
Help team with data collection	.24*	104
Help team to do folder reviews	.35**	105
Facilitate CAP team meetings	.23*	101
Attend CAP building-level meetings	.11	102

*p<0.05. ** p<0.01.

These results suggest that coaches' knowledge of CAP had a small influence on their implementation of two roles (i.e., help with data collection, facilitate team meetings) and a moderate influence on their implementation of four roles in helping their teams

[1] Analysis also was conducted using administrator support as reported by coaches; the results were very similar.

(i.e., focus on problem-solving steps, prioritize problems, monitor interventions, folder reviews). All of these correlations were positive, meaning that greater knowledge was related to higher levels of implementation for these six roles.

For all teachers/staff, there were significant correlations between knowledge and both roles (Table 10). For teachers/staff who had referred at least one case to CAP, there were significant correlations between knowledge and six of their seven roles, including all roles related to a CAP case (Table 10). All significant correlations were positive and between 0.2 and 0.35. These results suggest that, for teachers/staff, knowledge of CAP had a small influence on these roles and that greater knowledge was related to higher levels of implementation of these roles.

Table 10
Correlations Between Teachers/Staff Roles and Level of Knowledge

	Correlation coefficient (*N*)	
Role	All	Who referred a case
Number of meetings attended	.27** (399)	.10 (294)
Number of cases referred	.27** (397)	.20** (292)
Collect data for CAP cases	NA	.25** (293)
Review student folders for CAP cases	NA	.21** (292)
Complete CAP forms for CAP cases	NA	.31** (286)
Carry out interventions for CAP cases	NA	.25** (293)
Monitor and evaluate interventions for CAP cases	NA	.34** (292)

*p<0.05. ** p<0.01. *Note*. NA = Not applicable.

Staff members' attitudes about CAP factor. Two correlations showed a relationship between facilitators' roles and their attitude towards CAP (Table 11).

Table 11
Correlations Between Facilitators' Roles and Attitude About CAP

Role	Correlation coefficient	*N*
Attend coaching support meetings	.01	39
Share content of coaching support meetings	.08	39
Provide training	.20	39
Provide ongoing support to coaches	.36*	39
Lead building-level CAP meetings	.06	38
Collect data about CAP cases	.22	39
Share information with school administrators	.25	39

*p<0.05.

The correlation between facilitators' attitude and support to coaches was significant and larger than 0.3. The correlation for a second role (i.e., share information with school administrators) was not significant, most likely due to the small sample size, but close to 0.3. Both correlations were positive. These results suggest that facilitators' attitudes about CAP had a moderate influence on two of their roles and that more positive attitudes were related to higher levels of implementation for these roles.

For coaches, the correlation between their attitude about CAP and one role (i.e., help their team to monitor interventions) was significant (Table 12). This correlation was smaller than 0.3 and positive, suggesting that coaches' attitudes had a small influence on this role and that more positive attitudes were related to higher levels of implementation for this role.

Table 12
Correlations Between Coaches' Roles and Attitude About CAP

Role	Correlation coefficient	*N*
Help team to focus on problem-solving steps	.19	100
Help team to prioritize problems	.04	100
Help team to monitor interventions	.28**	100
Help team with data collection	.11	100
Help team to do folder reviews	.11	101
Facilitate CAP team meetings	.17	99
Attend CAP building-level meetings	.02	102

*p≤0.05. ** p<0.01.

For all staff members, attitudes toward CAP were significantly correlated with the number of cases referred to CAP (Table 13). The significance may reflect the relatively large sample size. This correlation was negative and close to 0.1, suggesting that attitudes had a small influence on this role and that, unexpectedly, more negative attitudes were related to higher implementation.

Table 13
Correlations Between Teachers/Staff Roles and Attitude About CAP

	Correlation coefficient (*N*)	
Role	All staff members	Staff members who referred a case
Number of meetings attended	-.06 (400)	.00 (294)
Number of cases referred	-.13** (398)	.01 (292)

*p<0.05. ** p<0.01.

Among teachers/staff who had referred at least one case to CAP, all correlations between attitudes and roles were nonsignificant and trivial in size (Table 13 and Table F3, Appendix F). These results mean that the attitudes of staff members who referred a case did not influence implementation of their roles.

Summary and Conclusion

This brief has identified organizational factors that were related to the level of implementation of CAP; see summary in Table 14. The first finding concerned the problem-solving process. The results suggested that both staff members' knowledge about CAP and their attitude had a small influence on the implementation of selected problem-solving criteria. However, the relationship for attitude was negative, meaning that more positive attitudes were related to lower levels of implementation. Support from CAP consultants or the school administrator showed no influence on implementation of problem-solving criteria.

Table 14
Summary of Relationships between Organizational Factors and Level of Implementation

	Level of implementation	
Factor	Problem-solving process	Roles and responsibilities
District support (CAP consultants)	None	Moderate Some roles
Administrator support	None	Varies by staff group
Staff members' CAP knowledge	Small Some criteria	Varies by staff group
Staff members' attitudes about CAP	Small One criterion	Small One or two roles

The second finding concerned which organizational factors were related to roles of CAP staff. Staff members' attitude had a small influence on one or two roles for facilitators, coaches, and teachers. District support had a moderate influence on most of the administrators' roles and a limited number of the facilitators' roles. Both district support and staff members' attitude occasionally had a negative effect, meaning that higher levels of support or attitude were associated with lower levels of implementation.

Administrator support had a moderate influence on about one half of the coaches' roles, a small influence on about one half of the teachers' roles, and no influence on facilitators' roles. Its influence was always positive, meaning that higher levels of administrator support were associated with higher levels of implementation.

Across all organizational factors examined, staff members' knowledge of CAP appeared to have the strongest influence on CAP implementation. It was related to more problem-solving criteria than any other factor and also was related to at least a few roles for each staff group, including several roles that were not at full implementation for coaches and teachers/staff (see details in Cooper-Martin & Hickson, 2008b). The influence of knowledge was always positive. Finally, the influence of CAP knowledge on implementation of roles by coaches and teachers/staff was almost always larger in size than the influence of administrator support.

Strengths and Limitations of Methodology

In interpreting the results, it is important to understand the methodology's strengths and limitations. Self-reporting by any staff member can be affected by perceptions that it is in their professional interest to appear as engaged as possible with CAP.

Measures of the problem-solving criteria were based on cases from different CAP teams. Because respondents did not identify their CAP team, factor measures from the coach or team members that submitted each case were unavailable. Analysis with more specific measures might change the findings. Also, the analyses only examined one factor at a time and did not take into account possible relationships among the factors because several measures were ordinal.

Recommendations

Recommendations from the evaluation findings to improve implementation of collaborative problem solving within MCPS are as follows:

- Develop support for collaborative problem solving from school administrators. Encourage them to create a master schedule that allows team meetings to occur weekly or biweekly, to include staff members (i.e., specialists) who can suggest interventions, and to include all teachers of a given student. Provide suggestions to secondary schools on how to create collaborative problem-solving teams and hold meetings. (See Cooper-Martin & Hickson, 2008b for more details on these suggestions.) Include professional development on collaborative problem solving for administrators at regularly scheduled meetings (e.g., countywide or clusterwide) and differentiate it so that principals can choose what is most useful for their school.
- Increase knowledge and skill of coaches and of teachers/staff about collaborative problem solving. See Cooper-Martin and Hickson (2008a) for specific areas. Consider holding professional development sessions during the school day for coaches (as recommended in Cooper-Martin & Hickson, 2008b).
- Focus resources at the school level to build support from building leaders and to increase knowledge of team coaches and teachers.
- Build ownership within MCPS for the use of a collaborative problem-solving methodology. Initially, allow schools flexibility in implementation while best practices are isolated. Then synchronize common elements into a guide for problem solving.

References

Cooper-Martin, E., and Hickson, R. (2008a). *Implementation of the Collaborative Action Process (CAP) 2006–2007: Problem-solving process.* Rockville, MD: Montgomery County Public Schools, 2008.

Cooper-Martin, E., and Hickson, R. (2008b). *Implementation of the Collaborative Action Process (CAP) 2006–2007: Infrastructure and management.* Rockville, MD: Montgomery County Public Schools, 2008.

Guskey, T. (2000). *Evaluating professional development*. Thousand Oaks, CA. Corwin Press.

Kruger, L.J., and Struzziero, J. (1995). The relationship between organizational support and satisfaction with teacher assistance teams. *Remedial and Special Education, 16,* 203-211.

Montgomery County Public Schools. (2005). *CAP school action planning: How to build infrastructure and sustainability.* PowerPoint Presentation, August 2005. Montgomery County Public Schools, Rockville, MD.

Schmidt, T. (2005). *The Collaborative Action Process: A qualitative inquiry into process, practices and perceptions.* Unpublished doctoral dissertation, University of Maryland, College Park.

Weast, J. D. (2005). *Update on the Collaborative Action Process (CAP).* Memorandum to the Board of Education, July 27, 2005. Montgomery County Public Schools, Rockville, MD.

Wilson, H. (2006). *Summary of CAP evaluation: 2004–2005 to 2005–2006.* Unpublished document, Montgomery County Public Schools, Rockville, MD.

[i] The author thanks Ms. Maria Allendes for technical support, Ms. Trisha McGaughey for assistance in conducting and coding principal interviews and surveys, Ms. Natalie Wolanin for analysis of survey data, and Ms. Catherine Jasperse for her review and suggestions on this brief.

Implementation of the Collaborative Action Process (CAP) 2006–2007: Infrastructure and Management

Appendixes

THIS PAGE WAS LEFT BLANK INTENTIONALLY

Appendix A

Previous Research on Organizational Factors that Affect CAP and Other Problem-solving Models

In a study of successful school-based prereferral teams, Hammond and Ingalls (1999) summarized reports from team members on factors that supported or hindered their teams. Their paper also summarized earlier research on these factors. Based on this study and others, the following factors can be barriers to implementation and/or influence the fidelity of implementation of problem-solving models like CAP:

- District support (Schmidt, 2005)
  - Time, money, staff
  - CAP consultants
- Administrative support within the school
  - Changes in leadership/consistency over the years
  - Level of control and participation (Schmidt, 2005), focus for team (Hammond & Ingalls, 1999)
  - Attitude and level of enthusiasm (Schmidt, 2005)
  - Support and funding for training (Wilson, 2006)
  - Logistical issues related to time: Common time to meet (Wilson, 2006), meet during the day (Schmidt, 2005)
- Staff professional development: (Wilson, 2006; Telzrow, McNamara, & Hollinger, 2000; Hammond & Ingalls, 1999; Welch, Brownell, & Sheridan 1999)
  - Consistency (across schools, within schools, new staff)
  - type (district level, school based)
  - extent (initial, ongoing)
  - content (implementation of model, teams, collaboration)
- Staff attitudes
  - Understanding of CAP (Wilson, 2006), how model is communicated (oral/informal vs. written/formal, Telzrow et al, 2000)
  - Perceptions about the feasibility and the benefits of participation (Schmidt, 2005) or of using a team (Hammond & Ingalls, 1999)
  - Commitment to helping students and accomplishing the team's function (Hammond & Ingalls, 1999)
  - Feeling supported by colleagues within school (Walsh, 1989)
  - Resistance to change (Wilson, 2006)
- Variations in staff expertise by step in the process
  - Problem identification and goal development mastered sooner; documenting treatment integrity mastered later. (Telzrow et al, 2000; Wilson, 2006)
  - Related to how much time is necessary prior to use (Guskey, 2000)
- Variations in ease of documentation by step or component (Telzrow et al, 2000; Wilson, 2006)
- Team characteristics
  - "Teaming" skills (see summary in Hammond & Ingalls, 1999)
  - Team functioning (e.g., rotation of members, tracking system) (Hammond & Ingalls, 1999)
  - Clearly defined roles and responsibilities for all members (Hammond & Ingalls, 1999)
  - Members from different disciplines (e.g., general education, special education, psychology) (Hammond & Ingalls, 1999; Schmidt, 2005)

Additional References for Appendix A

Hammond, H. and Ingalls, L. (1999). Maintaining school-based prereferral teams: An eight-year study. *Rural Special Education Quarterly, 18,* 17–21.

Telzrow, C. F., McNamara, K., and Hollinger, C. L. (2000). Fidelity of problem-solving implementation and relationship to student performance. *School Psychology Review, 29*, 443–461.

Walsh, J. M. (1989). *Implementation of preferral intervention*. Paper presented at the Annual Convention of the Council for Exceptional Children, San Francisco, CA.

Welch, M., Brownell, K., and Sheridan, S. M. (1999). What's the score and game plan on teaming in schools? *Remedial and Special Education, 20*, 36–49.

Appendix B

Sample Schools for CAP Evaluation 2006–2007

A. Mario Loiederman Middle School
Bel Pre Elementary School
Benjamin Banneker Middle School
Burnt Mills Elementary School
Cashell Elementary School
Diamond Elementary School
Dr. Charles R. Drew Elementary School
Forest Oak Middle School
Gaithersburg High School
Germantown Elementary School
Goshen Elementary School
Harmony Hills Elementary School
Lakewood Elementary School
Laytonsville Elementary School
Col. Zadok Magruder High School
Maryvale Elementary School
Spark M. Matsunaga Elementary School
Meadow Hall Elementary School
Oakland Terrace Elementary School
Poolesville Elementary School
Redland Middle School
Judith A. Resnik Elementary School
Rosemont Elementary School
Shady Grove Middle School
Strathmore Elementary School
Strawberry Knoll Elementary School
Takoma Park Elementary School
Weller Road Elementary School
Wheaton High School
Woodlin Elementary School

Appendix C

CAP Case Review Rubric

Case Review Item	5	4	3	2	1
1. Evidence of problem identification (prioritization of concern and observable/measurable terms)	Definition is a) **measurable –** frequency, duration given b) **observable/clear** – unambiguous, specific, could be read and repeated by observers c) problems **prioritized,** if multiple problems	Definition is between 3 and 5, in terms of specificity.	Problem is stated in general terms as identified area of concern (e.g., reading, attention, aggressive behavior)	Problem written but unclear what concern is	Problem; behavioral definition not written
2. Baseline data: Student's current performance (academic or behavioral) specified and data used to justify concern	**Three or more direct** measures of student behavior/academic performance reported in the setting where it is perceived to be problematic (e.g., three baseline probes in reading)	**One or two direct** measure of student behavior/ academic performance reported in the setting where it is perceived to be problematic (e.g., one or two baseline probes in reading)	Data collected doesn't justify concern or align with problem identified. (e.g., used CBA or error analysis but doesn't lead to specific problem identify).	Indirect measures of student's behavior/ academic performance are provided (standardized tests – CTBS, MAP-R, etc.)	Estimates or general descriptive info about student's baseline data (teacher may say below level)
3. Evidence that team considered factors that influence student progress (See specific factors from list)	A thorough analysis of **all five** factors related to the problem: • Curricular, instructional • Teacher, teaching • Environment, classroom, peers • Home, community • Student	Analysis of four factors OR analysis of five factors but not in depth.	Analysis of student, plus one or two other factors.	Limited to analysis of student characteristics (learner) only.	Interventions are designed without consideration of factors related to the concern; no factors given as reason for concern

Case Review Item	5	4	3	2	1
4. Specific goals set (time frame, condition, behavior, criteria)	Goal stated **narratively and represented graphically** on chart specifying time frame, condition, behavior, criterion on intervention sheet.	Goal represented **graphically** specifying time frame, behavior, condition, criterion-**not stated narratively**.	Goal stated **narratively** with all of the following: time frame, behavior, criterion and condition. But Goal **not graphically** represented	Goal stated **narratively** but missing at least one of the following: time frame, condition, behavior, criterion.	No specific goal or objective is identified
5. Evidence of direct LINK between analysis and intervention **(Hint: Start with #3)**	Intervention aligned with all of the following: • Baseline data • Hypothesis • Goal	Intervention aligned with two of the following: • Baseline data • Hypothesis • Goal	Intervention aligned with one of the following: • Baseline data • Hypothesis • Goal	Evidence of analysis but did not link to intervention (e.g., homework club but issue is reading).	No evidence
6. Evidence the intervention clearly specified (observable, measurable)	Plan described with specific procedures/ strategies and all of the following are present: • materials • when • where • how often • persons responsible	Plan described with specific procedures/ strategies, but one of the following are missing: • materials • when • where • how often • persons responsible	Plan described with specific procedures/ strategies, but two of the following are missing: • materials • when • where • how often • persons responsible	Generic description of intervention strategy (e.g. behavior contract) stated. Plus at least one of the following: • materials • when • where • how often • persons responsible	Intervention plan NOT written. OR Generic descriptions of intervention (e.g., behavior contract) only.

Case Review Item	5	4	3	2	1
7. Evidence the *intervention plan* was monitored (graphs, frequency chart, other documents).	Data on implementation of intervention are collected and charted/graphed consistently (e.g., 1 time per week).	Data on implementation of intervention are collected and charted/graphed irregularly and inconsistently.	Some quantifiable data on implementation of intervention but not charted or graphed	Appears to be a response to the intervention but no evidence of data.	Not monitored
8. *Student progress* was monitored consistently over time.	Four or more data points, after the baseline, used.	Three data points, after the baseline, used	Two data points, after the baseline, used.	One data point, after the baseline, used.	No progress on monitoring.
9. Direct comparison of the student's post intervention performance with baseline data.	Direct comparison of the student's performance at the end of the intervention period with baseline data.	Baseline data and data at the end of the intervention period available. Analysis not explicit.	Some intervention data available, but either baseline data or data at the end of the intervention period are missing.	Baseline data. No data after the intervention.	No evidence.
10. Decision to continue, modify, or terminate the intervention made based on data?	Decision to continue, modify, or terminate the intervention made. Based on analysis of data.	Decision to continue, modify, or terminate the intervention made. Had data but didn't inform the decision.	Decision to continue, modify, or terminate the intervention made. Decision based on subjective report.	Decision to continue, modify, or terminate the intervention made. No indication of what data used.	No decision to continue, modify, or terminate the intervention made.

Appendix D

Selected Recommended Components for Implementation of CAP Infrastructure and Management

Roles and responsibilities of key staff members

School administrators

- □ Provide the vision and action plan
- □ Provide appropriate time and structure to implement
- □ Lead staff in discussions about data obtained through CAP
- □ May assist in facilitating building CAP meetings
- □ May attend coaching support meetings

CAP facilitators

- □ Provide ongoing support to coaches
- □ May coach a team
- □ Co-lead building CAP meetings
- □ Collect data
- □ Meet with administration about trends/needs

CAP coaches

- □ Help to facilitate grade level team meetings
- □ Help team focus on problem-solving steps and data collection
- □ Help teachers with folder reviews
- □ Help teammates problem solve and monitor interventions
- □ Serve on building CAP team
- □ Prioritize students and group them according to needs
- □ Hold meetings at least twice monthly

Teacher/staff (CAP team members)

- □ Participate in grade level CAP meetings
- □ Gather data on students
- □ Review student folders
- □ Problem solve with team members
- □ Carry out interventions
- □ Monitor and evaluate interventions

Note. Source: *CAP school action planning: How to build infrastructure and sustainability* (MCPS, 2005)

Appendix E

Detail on Organizational Factor Indexes

Table E1
Index of District Support from CAP Consultant

Item	Response scale (value for index)	Respondent
How involved was your CAP consultant in providing support for carrying out CAP in your building?	Very involved (4) Somewhat involved (3) Minimally involved (2) Very uninvolved (1)	Administrator
How involved was your CAP consultant in assisting with CAP training needs at your school?	Very involved (4) Somewhat involved (3) Minimally involved (2) Very uninvolved (1)	Administrator
How involved was your CAP consultant in providing feedback about overall CAP functioning in the building?	Very involved (4) Somewhat involved (3) Minimally involved (2) Very uninvolved (1)	Administrator
How effective has your CAP consultant been in providing support for carrying out CAP in your building?	Very effective(4) Somewhat effective (3) Less effective (2) Not all effective (1)	Facilitator

Note. Cronbach's alpha=0.87

Table E2
Levels of District Support from CAP Consultant

	Administrators (*N*=29)	
Item	Very involved %	Somewhat involved %
How involved was your CAP consultant in providing support for carrying out CAP in your building?	37.9	20.7
How involved was your CAP consultant in assisting with CAP training needs at your school?	41.4	13.8
How involved was your CAP consultant in providing feedback about overall CAP functioning in the building?	34.5	10.3
	Facilitators (*N*=107)	
	Very effective %	Somewhat effective %
How effective has your CAP consultant been in providing support for carrying out CAP in your building?	44.8	27.6

Table E3
Index of Administrator Support for CAP

My school administrator…	Response scale (value for index)	Respondent	
		Facilitators[a.]	Coaches[b.]
encouraged teachers to use CAP teams.	Strongly disagree (1), Disagree (2) Neither agree nor disagree (3) Agree (4), Strongly agree (5)	X	X
was committed to co-worker collaboration.	Strongly disagree (1), Disagree (2) Neither agree nor disagree (3) Agree (4), Strongly agree (5)	X	X
helped find common time for CAP meetings.	Strongly disagree (1), Disagree (2) Neither agree nor disagree (3) Agree (4), Strongly agree (5)	X	X
supported relevant training for CAP teams.	Strongly disagree (1), Disagree (2) Neither agree nor disagree (3) Agree (4), Strongly agree (5)	X	X
provided positive feedback to CAP teams.	Strongly disagree (1), Disagree (2) Neither agree nor disagree (3) Agree (4), Strongly agree (5)	X	X
provided CAP teams with materials and supplies.	Strongly disagree (1), Disagree (2) Neither agree nor disagree (3) Agree (4), Strongly agree (5)	X	X

[a] Cronbach's alpha=0.86 for facilitators.
[b]Cronbach's alpha= 0.80 for coaches

Table E4
Levels of Administrator Support Items

My school administrator…	Strongly agree plus Agree	
	Facilitators (*N*=107) %	Coaches (*N*=39) %
encouraged teachers to use CAP teams.	73.8	77.0
was committed to co-worker collaboration.	68.2	92.3
helped find common time for CAP meetings.	60.7	87.2
supported relevant training for CAP teams.	57.0	74.4
provided positive feedback to CAP teams.	39.2	51.3
provided CAP teams with materials and supplies.	31.7	43.6

Note. Includes one or more responses per school administrator.

Table E5
Index of Staff's CAP Knowledge and Skills

Item	Response scale (value for index)	Respondent		
Based on your experience with CAP, including any professional development, training or coaching, please indicate your current level of knowledge or skill for each item.		Faciliators[a]	Coaches[b]	Teachers[c]
Prioritizing concerns for problem identification	None (0), Novice (1) Intermediate (2), Expert (3)	X	X	X
Defining problems in observable/measurable terms	None (0), Novice (1) Intermediate (2), Expert (3)	X	X	X
Collecting baseline data to specify student's/students' current performance	None (0), Novice (1) Intermediate (2), Expert (3)	X	X	X
Using relevant data to confirm the problem	None (0), Novice (1) Intermediate (2), Expert (3)	X	X	X
Considering factors that influence student progress	None (0), Novice (1) Intermediate (2), Expert (3)	X	X	X
Setting specific, appropriate goals for cases	None (0), Novice (1) Intermediate (2), Expert (3)	X	X	X
Designing a specific intervention	None (0), Novice (1) Intermediate (2), Expert (3)	X	X	X
Monitoring implementation of an intervention	None (0), Novice (1) Intermediate (2), Expert (3)	X	X	X
Collecting data to monitor an intervention	None (0), Novice (1) Intermediate (2), Expert (3)	X	X	X

[a] Cronbach's alpha=0.94 for facilitators.
[b] Cronbach's alpha=0.95 for coaches.
[c] Cronbach's alpha=0.96 for coaches.
Note. Missing responses coded as none.

Table E6
Percentage of Respondents With Two Levels of CAP Knowledge and Skills by Staff Group

	Teachers (*N*=403)		CAP Coaches (*N*=107)		CAP Facilitators (*N*=39)	
Skill	Expert %	Intermediate %	Expert %	Intermediate %	Expert %	Intermediate %
Prioritizing concerns for problem identification	9.4	51.9	9.3	59.8	15.4	79.5
Defining problems in observable/measurable terms	12.4	51.1	14.0	55.1	30.8	64.1
Collecting baseline data to specify student's/ students' current performance	19.4	48.4	15.9	58.9	20.5	66.7
Using relevant data to confirm the problem	15.6	49.9	15.0	60.7	17.9	64.1
Considering factors that influence student progress	17.4	54.8	18.7	62.6	15.4	71.8
Setting specific, appropriate goals for cases	12.7	49.4	14.0	57.0	28.2	61.5
Designing a specific intervention	10.7	47.4	11.2	55.1	20.5	61.5
Monitoring implementation of an intervention	14.6	50.6	12.1	53.3	12.8	66.7
Collecting data to monitor an intervention	5.9	50.1	12.1	55.1	17.9	66.7

Table E7
Index of Staff's Attitude About CAP

Item	Response scale (value for index)	Respondent		
		Facilitators	Coaches	Teachers
CAP has too much paperwork.	Strongly disagree (1), Disagree (2) Neither agree nor disagree (3) Agree (4), Strongly agree (5)	X	X	X
CAP is too time consuming.	Strongly disagree (1), Disagree (2) Neither agree nor disagree (3) Agree (4), Strongly agree (5)	X	X	X
CAP contributes to productive problem solving among teachers and staff.	Strongly disagree (1), Disagree (2) Neither agree nor disagree (3) Agree (4), Strongly agree (5)	X	X	X
I have too many other demands on my time to use CAP.	Strongly disagree (1), Disagree (2) Neither agree nor disagree (3) Agree (4), Strongly agree (5)	X	X	X
Behavior improves when problems are referred to CAP.	Strongly disagree (1), Disagree (2) Neither agree nor disagree (3) Agree (4), Strongly agree (5)	X	X	X
CAP helps teachers to expand their "bag of tricks".	Strongly disagree (1), Disagree (2) Neither agree nor disagree (3) Agree (4), Strongly agree (5)	X	X	X
CAP improves data collection by teachers and staff at my school.	Strongly disagree (1), Disagree (2) Neither agree nor disagree (3) Agree (4), Strongly agree (5)	X	X	X
MCPS has so many initiatives that CAP doesn't seem that important.	Strongly disagree (1), Disagree (2) Neither agree nor disagree (3) Agree (4), Strongly agree (5)	X	X	X
It's not worth it to use CAP because I can't get the help I need from other staff.	Strongly disagree (1), Disagree (2) Neither agree nor disagree (3) Agree (4), Strongly agree (5)	X	X	X
Because of CAP, our students get help when they need it.	Strongly disagree (1), Disagree (2) Neither agree nor disagree (3) Agree (4), Strongly agree (5)	X	X	X
Achievement improves when problems are referred to CAP.	Strongly disagree (1), Disagree (2) Neither agree nor disagree (3) Agree (4), Strongly agree (5)	X	X	X

[1.] Cronbach's alpha=0.89 for facilitators.
[2.] Cronbach's alpha=0.89 for coaches.
[3.] Cronbach's alpha=0.89 for coaches.

Table E8
Levels of Attitude About CAP by Staff Group

Item	% Strongly agree plus Agree		
	Teachers (*N*=403)	Coaches (*N* =105)	Facilitators (*N*=39)
CAP has too much paperwork.	72.6	78.1	76.9
CAP is too time consuming.	66.4	70.8	56.4
CAP contributes to productive problem solving among teachers and staff.	47.2	60.6	79.5
I have too many other demands on my time to use CAP.	44.8	32.3	17.0
Behavior improves when problems are referred to CAP.	18.6	26.9	25.7
CAP helps teachers to expand their "bag of tricks".	37.6	53.4	69.2
CAP improves data collection by teachers and staff at my school.	35.0	40.0	64.1
MCPS has so many initiatives that CAP doesn't seem that important.	33.9	29.1	17.9
It's not worth it to use CAP because I can't get the help I need from other staff.	29.6	24.0	5.2
Because of CAP, our students get help when they need it.	25.0	30.7	35.9
Achievement improves when problems are referred to CAP.	24.0	40.9	44.7
CAP has not affected special education referrals at my school.	20.4	15.6	23.1
CAP meetings for my grade/my team are at a convenient time for me.	42.0	50.5	66.7

Appendix F

Selected Findings

Table F1
Correlation Coefficients Between Problem-solving Criteria and Four Organizational Factors

Criterion	District support (*N*=107)	Administrator support		Knowledge of CAP	Attitude about CAP
		Facilitators (*N*=107)	Coaches (*N*=112)	Facilitators (*N*=107)	Coaches (*N*=112)
Problem identification	.01	.03	-.09	.02	-.09
Baseline data	.09	-.05	.06	.05	.00
Factors analyzed	-.06	-.13	.15	.02	-.01
Specific goals set	.08	-.10	.03	-.02	-.07
Intervention alignment	.00	-.02	.08	.09	-.01
Intervention specified	.02	.01	-.09	.02	.00
Intervention monitored	.03	-.08	.09	-.03	.09
Progress monitored	-.08	.05	.04	.02	.04
Pre/postcomparison	-.03	.10	.02	-.02	.05
Decision on intervention based on data	-.08	-.06	.02	-.10	-.10

Table F2
Correlations Between Facilitator's Roles and Administrator Support (*N*=39)

Role	Correlation coefficient
Attend coaching support meetings	-.23
Share content of coaching support meetings	-.01
Provide training	.13
Provide ongoing support about CAP to coaches	.04
Lead building-level CAP meetings	.08
Collect data about CAP cases	.17
Share information with school administrators to inform school improvement efforts	-.05

Table F3
Correlations Between Teachers/Staff's Roles and Attitude About CAP

Role	Correlation coefficient (*N*)
Collect data for CAP cases	.05 (293)
Review student folders for CAP cases	.03 (292)
Complete CAP forms for CAP cases	.10 (286)
Carry out interventions for CAP cases	.07 (293)
Monitor and evaluate interventions for CAP cases	.05 (292)