Academic Case Managers: Evaluating a Middle School Intervention for Children At-Risk

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Mary, a seventh grader, slams into the room and throws her purse on the table, pulling out her new perfume and asking people to smell it, yanking out her hairspray and her lipstick, and all the while talking over anything that anyone is saying in the room, telling about her day and how she feels about her last class. In sixth grade, she was failing all of her classes and telling her father her teachers were losing her homework assignments. At this point, an early intervention support system–an academic case manager–intervened. He began by speaking with her father and sending him weekly progress reports. The case manager advocated with teachers to allow Mary to complete missing assignments and helped her with them. He built a mentoring relationship with her and her family. Although Mary still has trouble in math class, currently she is passing all her other classes. Her goal is to make Honor Roll. (J. Standback, personal communication, January 9, 2008).

For the past eight years, Midwest Educational Research Consortium (MERC), located at Western Michigan University, received two multi-million dollar grants through a U.S. Department of Education program entitled Gaining Early Awareness and Undergraduate Programs (GEAR UP). GEAR UP is a school/university partnership using a cohort model with the goal of increasing the number of students of poverty who graduate from high school and go on to post secondary education. The MERC/GEAR UP project partners with two universities, two community colleges, and four school districts in Michigan and Ohio.

Over the eight years of project funding, MERC/GEAR UP personnel have employed a number of successful strategies and interventions within the GEAR UP project schools. While many of these programs provided services to students and their families as well as their teachers, the most compelling of these programs has been the academic case management program. The purpose of this study documents the effectiveness of this intervention within a formal CIPP (Stufflebeam, 1983, 2003) evaluation framework.

The case manager intervention was piloted in the middle schools of one of the urban school districts in the GEAR UP project. The partnership district involved in this study was

one of four school districts in the MERC/GEAR UP service area. This district is located in southwest Michigan. There are 7,364 students enrolled in 15 elementary schools, three middle schools, a high school, and an alternative 6-12 building. More than 63% of the students in this district qualify for free/reduced lunch, about 50% are from minority groups, and there is an increasing population with limited English proficiency. This current study is part of a 5-year longitudinal project that will focus on multiple factors including course selection and academic performance, attendance and drop-out, and patterns of student behavior as a result of the academic case manager intervention.

Through the MERC/GEAR UP project evaluation, the process and impact of placing academic case managers as an intervention in middle schools for students of poverty who are not passing core courses was documented. Academic case managers provided a mechanism to facilitate students learning to cope with their own challenges within the system of public school education. Such structural supports were a step toward overcoming what Kozol (1991) referred to as a "divided and unequal education system [that] is still in place four decades after Brown" (p. 196). For this GEAR UP project, the academic case managers were the structural supports who deliberately facilitated academic success for students of poverty. Lee (2005) asserted that students must learn life coping skills as a foundational step to taking on academic challenges. This is the premise under which the academic case mangers functioned.

Theoretical Premise of Academic Case Management in Schools

The case management process in general provides a network of positive support to help individuals with the challenges and barriers in their lives. Such a process is important for the middle school students in low-income, urban settings. Case managers can engage students in effectively "understanding existence, knowledge, and ethics in a context of cultural, social, and political upheaval" (Slattery, 1995, p. 25). Schubert (1986) further reinforces the concept of increasing student understanding of the larger context outside of schoolhouse walls and how that understanding of self and others helps students cope with academic success.

Social constructivism has much to add to this conversation. Social patterns are grounded on assumptions of connection and community (Ernest, 2004). By focusing on the shared experience of culture, as Gergen (2001) asserts, institutions can understand both the social context of individuals and groups and change happening within living systems. For example, Michigan, where the intervention schools are situated, currently has the highest unemployment rate (7.7%) in the country. The delicate structures of family life often are disrupted. In addition there often is an increase in the number of students who qualify for free and reduced lunch, an increased rate in transiency, and an increase in adolescent and teen problematic behaviors. These issues with regard to poverty have a direct impact on student academic achievement.

The dialectal nature of social constructivism provides what Spector and Kitsuse (1977) refer to as "understanding the problems a society calls attention to" and attempts "to mobilize the institutions to do something about them" (p.78). By identifying a problem and giving a voice to the issue and a possible solution, groups can come to a transformative process to develop a more satisfactory lived experience for individuals and groups. Such is the process with the academic case manager model, which was designed to affect directly the social and contextual understandings of the students within the target population.

The proposed academic case manager intervention focuses on two specific features: 1) facilitating students completing classroom assignments and 2) understanding the context of students' lives outside of school and using

this understanding as a vehicle for developing specific interventions to help students relate to their school concerns. The premise of this model is founded on the idea that well-planned practical case manager interventions focusing on these two key features will go a long way toward overcoming the significant obstacles created by the gap between the school and community environments. Such intervention strategies hold great promise for motivating and encouraging students to become responsible for their own learning.

The Process of Implementing the Academic Case Management Program

Several factors influenced the implementation of the program and two distinct phases took place in order for the program to become a reality in the middle schools. Phase One and Two are discussed below.

Phase One of Academic Case Management. The first phase of the academic case management program involved a number of conversations between GEAR UP personnel and an interdisciplinary team of sixth grade teachers that led to the strategic planning of the program. The discussions were held one hour once per week for the first semester of the school year. The purpose of the discussions was to uncover the concerns and issues that were barriers to student success within a school of high poverty students, then develop and implement interventions to address those issues. As the initial conversations ensued, a focal concern emerged from the teaching team about how to develop a community of connection and care within the school. Teachers discussed their roles as educator but were deeply perplexed about how to help students beyond the classroom. They understood this as a prerequisite to academic success, particularly for students of poverty.

Baseline data were shared with the teachers and administrators. The data represented the academic achievement, behavioral referrals, and retention rates of the student population in one of the urban middle schools that was part of the GEAR UP partnership. It was at this relevant point in the strategic planning for implantation that the team was able to conceptualize the process by which the program would be carried forth. While baseline data validated what the team knew about the students, it was important to have this empirical data that allowed them to move forward and solidify the decision to move from dialogue to action. While this data represented one school, it was also shown to generalize across the population of other middle schools in this urban school district; for each school as a whole: more students were failing core courses by eighth grade, setting the scene for high school dropout. Moreover, the district was losing significant numbers of students every year which threatened school closures. In fact, the middle school represented in Figure 1 was closed by the end of the project year.

GEAR UP personnel moved the process forward by working with a team of teachers and administrators on a weekly basis in order to facilitate the sharing of barriers to students, schools, and classroom teaching. Relevant discussions focused on the issues in students' lives as these were constant barriers to learning and to building a sense of their personal and educational efficacy. Kant (1787/1996) argued that knowledge production arises from the experiences of the knowledge producer. The social and experiential landscape in which the student interacted was a key component of that cognitive growth. As teachers described, the effects of the social and experiential landscape for their students of poverty were wide ranging and these also affected school achievement and motivation to learn. Piaget (1967/1971) also asserted that humans organize their cognitive capabilities by acquiring knowledge through interaction with and adaptation to the environment, so that interventions addressing these environmental issues may directly affect student learning.

GEAR UP personnel brought in a professor of psychology and school counseling to conduct a workshop focused on the differences between educational services within the school and counseling services both inside and outside of school. This provided a forum for teachers to strategize and discuss best practices and techniques for building the coping skills fundamental to academic success.

These conversations resulted in the concept of adding academic case managers as an intervention in the schools. Borrowed from the health care and social services professions, case management models are relatively new to the educational sector. In medical and human services arenas, case managers have a number of functions that include identifying client needs, developing a plan for helping clients, securing outside services to scaffold the interventions with the client, and periodically reassessing the plan (Piette, Fleishman, More, & Dill, 1990). GEAR UP personnel proposed that the academic case manager intervention model would also serve these functions within the school setting. Further, unique to the school setting, the academic case manager would serve as a method for uncovering the contextual frameworks that students attributed to their world. Utilizing that contextual information, academic case managers would help students focus on co-constructing environments in which they understood how their personal world and their educational world intersected in order to increase students' academic success. Additionally unique to the school setting, academic case managers would assist students in the completion their classroom assignments. They would meet a minimum of once per week with students, develop a mentoring relationship, communicate with parents/guardians, keep records of students' academic progress in classes, meet with teachers and advocate for students, and tutor students or connect them to tutoring services to help them complete their classroom assignments and understand the concepts being taught.

Vital to the transition of adopting the academic case manager model was the testimonial of a case manager from another MERC/GEAR UP project school to a group of classroom teachers, building principals, and central office administrators. This case manager both discussed the value of case management in schools and the positive effects it had on students and their families. Shortly afterwards, the school district personnel decided to implement a pilot study of the case management model.

Phase Two of Academic Case Management. Once the academic case managers were hired by the school districts, GEAR UP personnel met with the academic case managers and the school principals to clarify long and short term objectives and the data needed to be collected by the academic case managers. Long term objectives focused on the self-sufficiency of students vis-a-vis their academic success. Short term objectives focused on connecting students to a network of supports and helping students complete classroom work. A referral system was developed that would connect students to the academic case manager through their teachers, administrators, the parent/guardian, or student self-referral. The referral was based on academic failure due to missing assignment, failing tests or quizzes, or behavioral issues. The data that needed to be collected included a count of courses passed, missing assignments completed, and number of students passing core courses, attendance patterns, and behavior referrals.

Academic case managers were requested by MERC/GEAR UP personnel to log information that included services they provided to the students and number of contact hours. They were also requested to track student achievement.

Evaluation of Case Management Program

The GEAR UP evaluation team utilized the CIPP Model (Stufflebeam, 1983, 2003) to evaluate the emergent academic case management model. Methodology for this evaluation required attention to the context, input, and process factors described above. A product evaluation methodology included collection of baseline data and instrumentation for the collection of both quantitative and qualitative data. Instrumentation included forms for logging and documenting case manager contacts and interventions, a worksheet for the case managers to facilitate student produced educational goals, and questionnaires to conduct face-to-face interviews with principals, teachers, case managers, and students. Table 1 is an example of a record keeping chart compiled by academic case managers. These same methods were used in each of the three middle schools.

Table 1
Academic Case Manager Record-Keeping Chart

Current Grades in Core Classes	Missing Assignments
Science	
History	
English	
Math	

Academic case managers shared their tracking of assignments with students and discussed what students needed in order to complete class work. This evolved into a weekly communication with each student' s teacher, tutoring sessions during school and after school, parent/guardian communication, and a series of student incentives and rewards. The rewards included a wide spectrum of possibilities from pencils or t-shirts to oral and written positive communication to parents and guardians to field trips that connected what was being learned in school with life outside of school. Additionally, this conversation naturally flowed into discussing barriers to completing assignments from social and environmental factors outside of the school house walls and on to behavioral, organizational, and foundational skills needed for school success. Some of this discussion became an autobiographical worksheet for the students and their families that documented questions and answers such as: *"Does the future look good to you?"… "Why?"* or *"What is the one thing that could possible hold you back and prevent you from getting what you want out of life?"* and *"Why?"*

Thus, the emergent academic case management model began to address the social and experiential context of students lived experience. In this model, case managers focused on facilitating a student-centered learning environment. Such an environment encouraged the organization of the student' s experiences into some personally meaningful idea of the world (Fosnot, 1996; Becker & Varelas, 1995). The case managers helped students to become active participants in their own educational lives. A step towards this goal was to build relationships with the students and their families in order to understand the lived experiences of the students. This is particularly important since, in a constructivist framework, the voice of the student is valued (Brooks & Brooks, 1999; Desautels, Garrison, & Fleury, 1998).

Results

As part of the evaluation, three questions were examined. First, were there observable student grade changes in core courses (English/language arts, math, science, history/social studies) from one semester to the next over the course of the academic school year? Second, were there changes in attendance? Third, were there changes in behavior over the year for this particular population? This population included cohorts of approximately 40 seventh grade students served by each case manager in each of three urban middle schools

for an approximate N = 120 students assisted/supported by case mangers out of a population of more than 600 students in total.

The project focused on multiple factors including course selection and academic performance, attendance and drop-out, and patterns of student behavior as a result of the academic case manager intervention. The cohort for this study included all seventh and eighth graders in three urban middle schools in the 2006-2007 academic school year (N = 2144). Baseline academic and behavior data were obtained for this cohort for the previous year (when the students were in sixth and seventh grade). Students were selected and assigned to case managers at the beginning of the school year based on these indicators (N ~120). The primary data source was school and district student information system records. Secondary data sources included case manager records, GEAR UP student, teacher, and parent surveys, and student focus groups. Variables examined include marking period GPA in core academic subjects and semester data on mandatory and discretionary behavioral incident referrals. Analytical methodology employed was a 2B1W repeated measures ANOVA model examining differences between the case-managed and reference groups across the 8 marking periods (or 4 semesters) covering academic school years beginning in 2005 and ending in 2007. The criterion for statistical significance for this study is alpha = .05.

Two longitudinal data analyses were performed to examine academic performance and behavioral effects over a two year period before and during the case manager intervention as functions of GROUP, SCHOOL, and TIME. Both analyses were two-between, one-within ANOVAs with two fixed between-group effects, GROUP (with two levels representing non-case-managed and case-managed students and SCHOOL (with three levels representing the three middle schools in the study). The repeated measures factor TIME in the first analysis has 8 levels representing the 4 marking periods during Year 1 before identification of students receiving the case-management intervention and 4 marking periods during Year 2 while those students were receiving case-management services. The dependent variable in the first analysis is student GPA in core courses. Group sizes with complete data sets were N_{ref} = 537 and N_{cm} = 94. The results of this study are presented in Table 2 with a plot of mean GPAs over time shown in Figure 1.

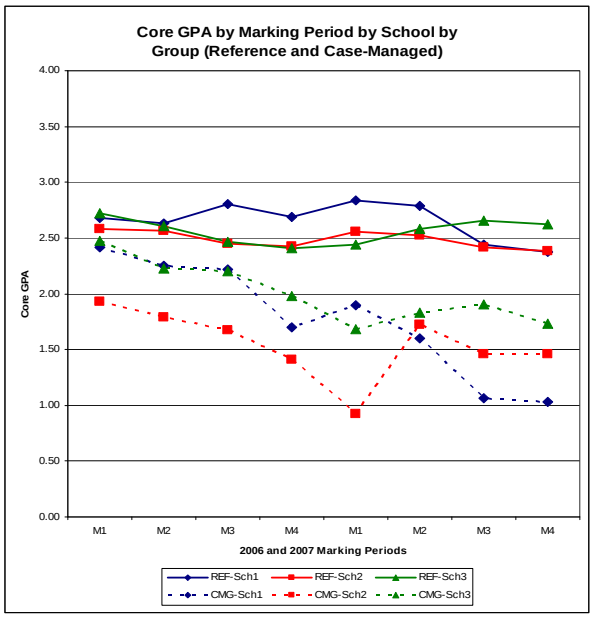

Figure 1. Core GPA by Marking Period by Cohort Group (Ref. & Case Managed)

The second analysis examines trends in serious behavioral incidents over time, semesters 1 and 2 of Year 1, followed by semesters 1 and 2 of Year 2. Group sizes with complete data sets were N_{ref} = 554 and N_{cm} = 97. The results of this study are presented in Table 3 with a plot of average number of mandatory behavioral referrals over time shown in Figure 2. In both analyses, Mauchly's Test for Sphericity was significant and the Huynh-Feldt epsilon degrees of freedom adjustment was applied.

Table 2
2B1W ANOVA Summary of Average Student Group and School GPA Effects Over the Year Before and Year During the Case-Manager Intervention

Mauchly' s Test of Sphericity

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Huynh-Feldt Epsilon
Time (as marking period)	0.315	718.571	27	0.0000	0.715

Tests of Within-Subjects Effects (Huynh-Feldt adjusted)

Source	SS	df	Mean Square	F	Sig.
Time	70.370	5.006	14.058	39.467	0.0000
Time * Group	39.407	5.006	7.873	22.101	0.0000
Time * School	40.051	10.011	4.001	11.231	0.0000
Time * Group * School	16.513	10.011	1.649	4.630	0.0000
Error(time)	1114.399	3128.503	0.356		

Tests of Between-Subjects Effects

Source	SS	df	Mean Square	F	Sig.
Group	366.161	1	366.161	65.041	0.0000
School	28.414	2	14.207	2.524	0.0810
Group * School	19.781	2	9.890	1.757	0.1734
Error	3518.580	625	5.630		

Table 3
2B1W ANOVA Summary of Average Group and School Mandatory Behavioral Referrals Over the Year Before and Year During the Case-Manager Intervention

Mauchly' s Test of Sphericity

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Huynh-Feldt Epsilon
Time (as semester)	0.659	269.125	5	0.0000	0.807

Tests of Within-Subjects Effects (Huynh-Feldt adjusted)

Source	SS	df	Mean Square	F	Sig.
Time	973.380	2.420	402.176	33.373	0.0000
Time * Group	251.987	2.420	104.115	8.640	0.0001
Time * School	1137.372	4.841	234.967	19.498	0.0000
Time * Group * School	342.820	4.841	70.822	5.877	0.0000
Error(time)	18870.581	1565.922	12.051		

Tests of Between-Subjects Effects

Source	SS	df	Mean Square	F	Sig.
Group	613.282	1	613.282	8.902	0.0030
School	13043.991	2	6521.996	94.666	0.0000
Group * School	855.612	2	427.806	6.210	0.0021
Error	44574.995	647	68.895		

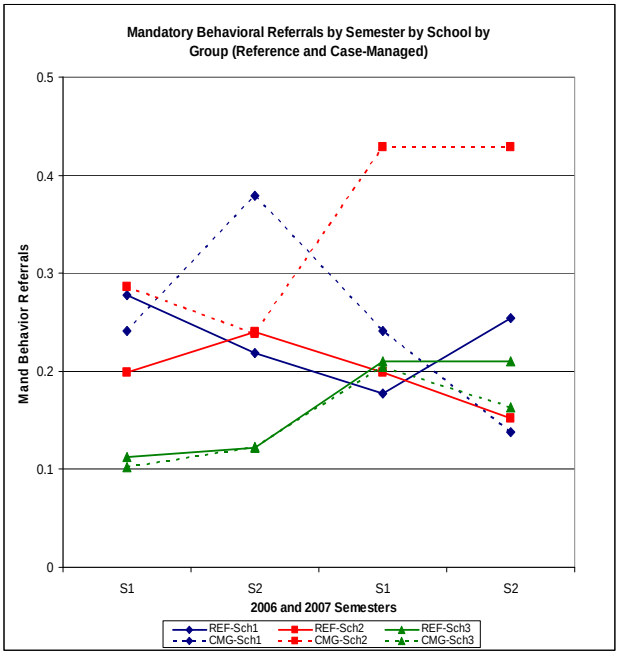

Figure 2. Mandatory Behavioral Referrals by Semester by School

This study provided evidence of the need for and the value of explicit formal structural supports for students' personal and social lives within the school context. The two-way interactions between Group and Time for GPA ($F_{5.006,3128.503} = 22.101$, $p < .0001$) and for the measures of behavior ($F_{2.420,1565.922} = 8.640$, $p < .0001$) were highly significant, although these interaction patterns changed from one school to the next (Figures 3 and 4). The main effect for Group was also, of course, highly significant (for GPA: $F_{1,625} = 65.041$, $p < .0001$ and for behavior: $F_{1,647} = 8.902$, $p < .003$), but this simply documents the initial design and selection differences between the two groups. How these patterns diverged over time reflects differences among schools as well as case manager treatment effects.

In terms of typical academic performance and rate of behavioral incidents, the reference group of students (who were not selected for case management) showed little change and slight trend over the two year period. At the beginning, there was only a small difference between the reference group and the case managed group in terms of GPA (-.5 pts) and very little difference in terms of behavior. By the end of the first year, a substantial, almost -1.0 point, GPA difference had grown between the reference group and the case managed group as well as almost a doubling in the rate of behavior related problems (in at least one school). At this point, these latter students were identified on the basis of GPA and behavior and began to receive case manager intervention. The case manager intervention appeared effective. The case managed students' downward trajectories appeared to be attenuated and in some cases reversed during the first semester of the pilot year. This general effect differed significantly by school (for GPA: $F_{10.011,3128.503} = 4.630$, $p < .0001$ and for behavior: $F_{4.841,1565.922} = 5.877$, $p < .0001$) as can be seen in the figures.

Educational and Scientific Significance of the Study

The case manager intervention model served as a method for uncovering the contextual frameworks that students attribute to their world. Utilizing that contextual information, academic case managers helped students focus on co-constructing environments in which they understood how their personal world and their educational world intersected. This helped students become academically successful.

Borrowed from the health care and social services professions, case management models are relatively new to the educational sector. The study presented indicates that the academic case management intervention model worked with children of poverty in urban schools. Furthermore, this study helps to move the case management intervention model into the set of best practices for learning. This extends beyond mentoring and tutoring and focuses on individualized attention to students. Academic case managers track each student' s classroom assignments, homework, tests and quizzes to

insure that they are accurate, complete, and submitted to their teachers on time. They also focus on helping students to understand the learning efforts and effects that lie beneath their assignments. Over the next four years of this study, we hope to replicate, document, and focus further on the effects of academic case managers and social service interventions in schools for children of poverty.

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