The Development and Multi-Level Analysis of A

Conceptual Model of School-Community Collaboration

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THESIS

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LIST OF ABBREVIATIONS

SCC	School Community Collaboration
CCF	Collaborative Capacity Framework
MC	Member Capacity
OC	Organizational Capacity
RC	Relational Capacity
CMS	Collaborative Member Scale
GFC	Georgia Family Connection
CTC	Communities that Care
ISPS	Implementation and Sustainability Process Strategy
MLCFA	Multilevel Confirmatory Factor Analysis
MLM	Multilevel Modeling
SEM	Structural Equation Modeling
RMSEA	Root mean square error of approximation
SRMR	Standardized root mean residual
CFI	Comparative Fit Index
TLI	Tucker-Lewis Index
WLSMV	weighted least squares estimation
ICC	Intra Class Correlation

SUMMARY

Despite a recent increase in political and financial support for school-community collaboration(s) (SCC(s)), most schools function in isolation from the neighborhoods in which they are situated, and have become increasingly so over the last century (Merz & Ferman, 1997; Warren, 2005). One of the largest deterrents to the widespread development of effective SCCs is the lack of a comprehensive literature to support stakeholders as they engage in this difficult work. Accordingly, the present study attempts to advance the conceptual and empirical understanding of SCCs through the quantitative analysis of survey data collected from teachers working in schools that are engaged in collaborations with local community-based organizations. The primary goal of this study is to provide initial empirical support for the use of the Collaborative Capacity Framework (Foster-Fishman, Berkowitz, Lounsbury, Jacobson, & Allen, 2001) to evaluate and implement SCCs. The CCF proposes to identify and organize the core competencies and processes needed for school and community stakeholders to promote effective collaboration and positively influence student outcomes. Construct validity of the CCF was partially established through: (a) robust factor loadings for over 90% of the included items, (b) statistical indices that exceeded the recommended thresholds for strong model fit, and (c) relatively low inter-factor correlations at the individual- and school-level, providing initial evidence that the three CCF Components (Member, Relational, and Organizational Capacity), may be both empirically and conceptually unique. Convergent validity was determined through positive and significantly greater than zero inter-factor correlations, as well as moderate to strong correlations between each CCF factor and stakeholders' perceptions of SCC effectiveness. Based on these findings, a number of actionable recommendations are provided for researchers and practitioners attempting to implement and evaluate SCCs.

INTRODUCTION

"Especially in communities where there are few viable institutions, where crime, drug abuse, and gang activity are prevalent, and where palpable human needs walk through the school doors virtually every day, a much more powerful model of school development is needed – one that melds systemic efforts at strengthening instruction with the social resources of a comprehensive community schools initiative" (Bryk, Sebring, Allensworth, Luppescu, & Easton, 2010, p. 196)

The vision of a school and the surrounding community working together to solve interrelated and complex challenges is a powerful one. So much so, that it has endured over a tumultuous century of education reform in the United States (Sanders, 2003). Unfortunately, previous education reform efforts have typically only paid a "rhetorical bow" (Redding, Murphy, & Sheley, 2011, p. 1) to meaningfully involving the community. Specifically, archetypal approaches to school reform are characterized by two common features: they target issues that educators can influence and control during the school day, and they typically focus on challenges within the school building itself (Anderson-Butcher et al., 2010). Although these types of efforts are necessary to improve schools, the above quote by Bryk et al. (2010) is representative of a growing recognition among policy-makers, educators, and researchers that inward-focused reforms alone are not sufficient.

A recent and tangible shift to a more outward, community-focused approach to school reform can be observed at all levels of the education landscape (Epstein & Sanders, 2006). Nationally, the Individuals with Disabilities Act, 21st Century Learning Centers grants, and Title I of the Elementary and Secondary Education Act, all directly support schools connecting with their surrounding communities (Center for Mental Health in Schools, 2011). Locally, many states and districts have established policies and incentives that are meant to facilitate collaboration between school and community stakeholders (Epstein et al., 2008). Finally, a number of reform strategies have recently emerged, and despite their varied strategies and goals,

they all focus on developing School-Community Collaborations (SCCs(s)): community schools (Blank, Melaville, & Shah, 2003), full-service schools (Dryfoos, Quinn, & Barkin, 2005), comprehensive learning support systems (Adelman & Taylor, 1997), and after-school program partnerships (Anderson-Butcher, et al., 2010).

The simultaneous development of like-minded reform strategies and policies represents a unique context to impact positive and sustained change in schools. As Sarason (1990) argued, reform efforts are much more likely to succeed when they are supported by the external policy environment. Unfortunately, despite the recent proliferation of support for SCCs, the harsh reality is that the majority of schools function in isolation from the neighborhoods in which they are situated (Warren, 2005), and have become increasingly so over the last century (Merz & Ferman, 1997). One of the largest deterrents to the widespread development of effective SCCs is the lack of a comprehensive literature to support stakeholders as they engage in this difficult work. As the relevant literature is comprised primarily of advocacy pieces or exploratory case studies, it has been widely critiqued for lacking a robust theoretical and empirical research base (e.g., Anderson-Butcher et al., 2010; Chavkin, 1998; Keys & Gregg, 2001).

Accordingly, the present study will attempt to advance the theoretical and empirical understanding of SCCs through the quantitative analysis of survey data collected from school staff that are engaged in formal relationships with local community-based organizations. Specifically, I will provide initial empirical support for the use of the Collaborative Capacity Framework (CCF) (Foster-Fishman et al., 2001) to identify and assesses the core structures, processes, and skills needed to effectively implement SCCs. Due to the breadth and diversity of the relevant literature (Sanders, 2006), it is first necessary to define key terminology that will be used throughout this study and to examine the existing research in greater detail to clarify the

content and process of the proposed analysis.

Defining School-Community Collaboration

The SCC literature encompasses a wide variety of topics: at-risk students and their resiliency, urban and rural issues, educational policy, parent engagement, and community development (Keys & Gregg, 2001). Consequently, it is necessary to clarify a working definition of SCCs. Here, SCCs refers generally to the "relationships between schools and community individuals, organizations, and businesses that are forged to directly or indirectly promote students' social, emotional, physical, and intellectual development" (Sanders, 2006, p. xi). Although students are typically the primary intended beneficiary of SCCs, parents, and other community members may also receive resources and support (Zander, 2012).

Additionally, it is necessary to provide a definition of "community," as this term has a number of different meanings within an educational context (Merz & Furman, 1997). In the present study, community refers to all of the stakeholders and organizations based outside of the school with a shared concern for the success of students. Oftentimes, these individuals or organizations are located in the same area as the school, as defined by a common set of qualifiers such as a neighborhood name, recognizable features, or municipal borders. More abstractly, community may also refer to groups of people connected not necessarily by their physical proximity to one another or the school, but through their shared beliefs, goals, or interests (Keys & Gregg, 2001). The range of community partners a school may collaborate with is not limited only to agencies and organizations, "It encompasses all human and social capital in a neighborhood (e.g., people, businesses, community based organizations, postsecondary institutions, religious and civic groups, programs at parks and libraries, and any other facilities that are useful for recreation, learning, enrichment, and support)" (Center for Mental Health in

Schools, 2011, p. 6).

Similar to 'community,' "collaboration" has become an increasingly popular concept across a number of disciplines, with Lawson (2004) warning that "imprecise, incoherent and competing conceptions of collaboration plague practice, training, research, evaluation, and policy" (p. 225). Given that SCCs are motivated by a variety of rationales, manifested through an array of partners and services to fulfill a diverse range of goals, it is not surprising the SCC literature has been criticized for using vague, varying, and inadequate conceptions of collaboration (Adelman & Taylor, 1997; Crowson & Boyd, 1993). For the purpose of this study, "collaboration is defined as a style for interaction between at least two co-equal parties voluntarily engaged in shared decision-making as they work toward a common goal" (Friend & Cook, 1990, p. 72). A more detailed examination of the construct of collaboration as it relates to relationships between school and community stakeholders can be found below.

Service Provision vs. Community Development

Two distinct approaches to developing collaborations between school and community stakeholders are represented in the published literature: service-provision and community-development. However, according to the aforementioned definition by Friend and Cook (1990), only the latter results in school-community relationships that can be truly characterized as collaborative. The service-provision approach is associated with reforms that call for the co-location, integration, or wraparound of services (see Adelman & Taylor, 1997 for a review). From this perspective, the school acts as a centralized location for students, parents, and community members to receive a variety of resources. Although advocates of this approach often describe the relationship between schools and service providers as collaborative critics argue that this "is a premature characterization" (Center for Mental Health in Schools, 2011, p. 6). In

reality, informal and transactional relationships between professionals and schools typify the service-provision approach to SCCs (Keith, 1996; Merz & Furman, 1997). The service-provision model then, designates students, parents, and community members as consumers, not collaborators, in the effort to improve their schools and neighborhoods.

Not only does the service-provision model engage in conceptually murky "collabo-babble" (Center for Mental Health in Schools, 2011), "it has not met many of its public and professional expectations … generating greater acceptability and legitimacy than effectiveness" (Crowson, 2001, p. 2). The following criticisms, summarized across the relevant literature, provide a possible explanation for the limited success of service-provision models: (a) services provided are often determined by professionally identified needs instead of through input from local stakeholders (Crowson, 2001), (b) not involving students, parents, and community members in the solution of their own problems reinforces a top-down approach that lacks the sensitivity to mediate the complex and dynamic issues of the local context (White & Wehlage, 1995), (c) relying extensively on outside professionals to provide essential services downplays the importance of existing school support staff, such as counselors and nurses, and can create unproductive tension between the two groups (Adelman & Taylor, 1997), (d) focusing primarily on services that can only be provided by professionals reinforces a limited view of the community and its available resources (Center for Mental Health in Schools, 2011), and (e) compartmentalized funding and a lack of an effective management structure often leads to fragmented, individual-focused service delivery that ignores more systemic school- and community-level needs (Adelman & Taylor, 1997). Collectively, these issues prevent SCCs developed through a service-provision lens from influencing the "deep-structures" of schools and communities, thus limiting their ability to result in positive and sustained outcomes (Crowson &

Boyd, 1993; Merz & Furman, 1997; White & Wehlage; 1995).

In contrast to service-provision is the community-development approach to SCCs. Keith (1996) defined the community development approach as including "both tasks that have been (and could be) done by professional providers…and processes that must involve non-specialist, amateur local groups, and strengthen horizontal ties" (p. 248). Accordingly, community-development distinguishes itself from the service-provision approach in two fundamental ways: (a) through the use of local resources (e.g., people, businesses, and community based organizations) that are often passed over for more traditional professional agencies (e.g., mental health providers and universities), and (b) through the meaningful participation of school and community members (e.g., school-community advisory committee) beyond the passive reception of services (Center for Mental Health in Schools, 2011).

Based on these characteristics, SCCs developed from a community-development perspective can be more accurately described as collaborative. According to Friend and Cook's (1990) aforementioned definition, the community-development approach allows for each of the three key components of collaboration: a co-equal partnership, shared decision making, and working towards a common goal. Specifically, relationships between schools and community stakeholders are more likely to be co-equal than those between school staff and outside professionals; as these agencies are typically staffed by "experts", their connections with schools, particularly in low-income communities, are often hierarchical in nature (Keith, 1996). Also, the active participation of school and community stakeholders in the coordination and provision of services provides a greater opportunity for shared decision rather than relegating stakeholders to consumers of services only (Center for Mental Health in Schools, 2011). Finally, as they are generally situated in close proximity to the school, community stakeholders are more likely to

share a common interest and investment in improving the educational opportunities for children than representatives from non-local professional agencies (Bryk et al., 2010).

SCCs grounded in the community development perspective are better suited to address the multiple, interrelated challenges facing schools and communities for the following reasons: (a) connecting the school with local, non-professional resources demonstrates symbolically and practically the available supports in the community (Center for Mental Health in Schools, 2011), (b) meaningful relationships between the school and community can result in services that are more accurately grounded in the dynamic and complex needs of stakeholders (Keith, 1996), (c) participating meaningfully in SCCs can empower stakeholders by giving them power to voice their concerns and to act upon them (Center for Mental Health in Schools, 2011; Riger, 1993), (d) actively involving school and community members facilitates the development of the necessary infrastructure to effectively coordinate and provide services (Center for Mental Health in Schools, 2011), and (e) relationships between schools and local, non-professional community resources provides a fertile context for developing social capital within and around the school (Warren, 2005). It should be noted that for the remainder of the study, SCC(s) will refer specifically to collaborations between school and community stakeholders that are aligned with the community development perspective.

Regrettably, the defining characteristics of SCCs make them complex and time consuming to implement, as well as evaluate. With regards to implementation, Roussos and Fawcett (2000) highlighted five of the most frequently cited challenges to the development of successful collaborations: "(a) effectively engaging stakeholders that most directly experience the focal issue or community concern, often those with relatively little money or status, (b) collaborating with community leaders in sectors outside the professional field of the lead

organization in a partnership, (c) sharing risks, resources, and responsibilities among participating people and organizations, (d) confronting and overcoming conflict within and outside the partnership, and (e) maintaining adequate resources and continuity of leadership long enough to make a significant impact on the school or community" (p. 378).

Furthermore, a poorly implemented SCC can result in a number of negative outcomes, including: (a) an increase in fragmented intervention, (b) a narrow focus on a small group of students rather than systemic issues, (c) conflicts between school and community stakeholders, and (d) a reduction in public funding or resources due to the propensity for policy makers to make cut-backs based on the belief that contracting community resources are sufficient (Sanders, 2003; Center for Mental Health in Schools, 2011). Given the many potential pitfalls awaiting school and community stakeholders attempting to engage in collaboration, and the large amount of public support and funding being channeled toward these efforts, it is particularly important to gain a deeper knowledge of how successful SCCs are developed and sustained.

With this understanding in mind, I recently conducted a critical review of 26 peer-reviewed journal articles that examined the implementation or outcomes of SCCs (Zander, 2012). The purpose of the review was to answer the following research questions: What are the strengths and weaknesses of the SCC literature? What are the core competencies and processes that facilitate effective SCCs? Below is a more detailed description of how the conclusions and recommendations drawn from the previous review, as well as other relevant research, have directly informed the goals of the proposed study.

Identifying a Framework of Effective SCC Functioning

As is typically the case with a promising reform strategy, there is an overabundance of advocacy literature endorsing the effectiveness of SCCs, but a decided lack of supporting

empirical research (Crowson & Boyd, 1993). In particular, a number of authors have lamented the absence of research that contributes specifically to a practical and conceptual understanding of how effective SCCs are implemented (Anderson-Butcher et al., 2010; Chavkin, 1998; Center for Mental Health in Schools, 2011; Knapp 1995; Sanders, 2003). An emphasis on studying implementation is also supported and informed by the broader social-science literature. Specifically, Durlak and DuPre (2008) authored a seminal meta-analysis of over 500 studies that demonstrated implementation is strongly and consistently related to the outcomes generated by a wide range of prevention- or promotion-based interventions. This finding only further reinforces the belief that, "identifying and subsequently measuring the unique aspects of coalition (i.e., SCC) functioning that contribute to their success is essential to furthering the science and practice of collaboration" (Brown, Feinberg, & Greenberg, 2012, p. 486). Accordingly, the primary goal of my previous review (Zander, 2012) was to leverage an existing theoretical framework to identify and classify the core competencies and processes in the relevant literature cited as contributing towards successful SCCs.

Past research had already highlighted the general components of successful SCCs based on heuristic summaries of the relevant literature (Hands, 2005; Sanders, 2001); however, my previous review was designed to be a more rigorous, theoretically-grounded investigation. Unfortunately, I was unable to identify an existing theoretical framework from the SCC literature to guide my review of the published research. Specifically, most of the available frameworks were best used for taxonomic purposes, facilitating the categorization of SCCs based on their unique characteristics. Others were more appropriately characterized as "How to" guides, designed for stakeholders who were implementing SCCs with specific partners (i.e., a university). Most importantly, none of the available frameworks explicitly recognized that due to

the novel, and complex demands placed on stakeholders engaging in SCCs, a capacity-based approach is needed (Anderson-Butcher et al., 2010). Accordingly, in the absence of a prominent theoretical framework for understanding the critical aspects of collaboration in a school-specific setting, the search for a suitable framework was expanded to the broader community coalition literature.

Community coalitions are similar to SCCs aside from the fact they have a broader scope, including formal alliances between all types of community organizations, not just schools. Like SCCs, community coalitions are forged in the service of a common goal and stakeholders often develop internal decision making and leadership structures that support member organizations to engage in shared planning to implement activities and resources (Butterfoos & Kegler, 2009). As community coalitions reflect many of the aforementioned defining characteristics of SCCs, the more robust community coalition literature can offer valuable insight into the effective functioning of collaborative efforts between school and community stakeholders. This line of reasoning is further supported by Sarason (1990), who noted that schools are distinct from, but are not unique in relation to other complicated organizations.

The Collaborative Capacity Framework (CCF) (Foster-Fishman et al., 2001) is one of the most frequently cited theoretical frameworks from the community coalition literature. This is not surprising given that the CCF was developed iteratively through an extensive review of 80 articles, chapters, and practitioner guides from the community coalition literature. Conversely, many of the other available options considered for use in the previous review were developed intuitively by combining various aspects of existing theoretical frameworks (e.g., Community Coalition Action Theory (Butterfoss & Kegler, 2009)). On the contrary, Foster-Fishman et al. (2001) first content analyzed the 15 articles in their sample that were the most highly cited and

rich with details, identifying general factors that influenced coalition effectiveness. The emerging themes were then organized into a draft framework that was further refined through the coding of the remaining 65 articles.

The CCF also emphasizes capacity, defined here as "the skills, motivations, knowledge, and attitudes necessary to implement innovations" (Flaspohler, Duffy, Wandersman, Stillman, & Maras, 2008). A focus on capacity is particularly appropriate for this field because the ability of SCCs to affect positive change is dynamic, changing with shifts in membership, goals, and maturity, as well as improved by technical assistance and professional development. A focus on capacity also reminds stakeholders and researchers to recognize existing school and community strengths, along with areas necessitating improvement. Anderson-Butcher et al. (2010) advised that because SCCs add additional priorities and complexity to the work of school and community stakeholders, "there is a clear need for an explicit capacity-building approach related to partnership-centered school improvement models" (p. 261).

The Content and Structure of the Collaborative Capacity Framework (CCF)

Foster-Fishman et al. (2001) define Collaborative Capacity as, "the competencies and processes needed for coalitions to promote effective collaboration and build sustainable community change" (p. 242). Through their review of the literature, Foster-Fishman et al. (2001) identified four critical components where community coalitions need Collaborative Capacity: (a) within their members (Member Capacity); (b) within their relationships (Relational Capacity); (c) within their organizational structure (Organizational Capacity); and (d) within the programs they sponsor (Programmatic Capacity). Each of these CCF components also contains a corresponding set of more detailed elements and sub-elements (see Table I).

Table I. The Collaborative Capacity Framework

CCF Element	CCF Sub-Element	Competencies & Processes
Member Capacity	***Core Skills and Knowledge***	Ability to work collaboratively with others
		Skilled in conflict resolution
		Effective communication
		Knowledgeable about norms and perspectives of other members
		Broad understanding of problem domain
		Ability to create and build effective programs
		Understands targeted problem or intervention
		Understands target community
		Knowledgeable and skilled in policy, politics, and community change
		Grant writing and program planning, design, implementation, and evaluation skills
		Ability to build an effective coalition infrastructure
		Skilled in coalition/group development
		Knowledgeable about coalition member roles/responsibilities, committee work
	Core Attitudes Motivation	Holds positive attitudes about collaboration
		Committed to collaboration as an idea
		Views current systems/efforts as inadequate
		Believes collaboration will be productive, worthwhile, achieve goals
		Believes collaboration will serve own interests
		Believes benefits of collaboration will offset costs
		Committed to target issues or target program
		Holds positive attitudes about other stakeholders
		Views others as legitimate, capable, and experienced
		Respects different perspectives
		Appreciates interdependencies
		Trusts other stakeholders
		Holds positive attitudes about self
		Views self as a legitimate and capable member
		Recognizes innate expertise and knowledge bases
	Access to Member Capacity	
	Coalition supports member involvement	Logistical supports to assist members in attending meetings
		Social supports to facilitate active involvement
		Organizational support and institutional backing of coalition participation
	Coalition builds member capacity	Provides technical support in needed areas
		Helps members identify innate expertise
Relational Capacity	***Develops a positive working climate***	Cohesive
		Cooperative
		Trusting
		Open and honest
		Effectively handles conflict

Table I. The Collaborative Capacity Framework

CCF Element	CCF Sub-Element	Competencies & Processes
Relational Capacity (Cont.)	***Develops a shared vision***	Superordinate goals
		Shared solutions
		Common understanding of problems
	Promotes power sharing	Participatory decision-making processes and shared power
		Minimizes member status differences
	Values diversity	Individual and group differences appreciated
		Multiple perspectives, unique interests, and competing desires and goals coexist and are incorporated into the work plan as much as possible
	Develops positive external relationships	Links with organizational sectors unrepresented on coalition
		Engages community residents in planning and implementation processes
		Connects with other communities and coalitions targeting similar problems
		Links with key community leaders & policy makers
Organizational Capacity	***Effective leadership***	Excellent administrator
		Skilled at conflict resolution and communication
		Develops positive internal & external relations
		Visionary
		Effective at resource development
	Task-oriented work environment	
	Formalized procedures	Clear staff and member roles, responsibilities
		Well-developed internal operating procedures and guidelines
		Detailed, focused work plan
		Work group/committee structure
	Effective communication	Effective internal communication system
		Timely and frequent information sharing, problem discussion, and resolution
	Sufficient resources	Financial resources to implement/sponsor new programs and operate the coalition
		Skilled staff/convenor
	Continuous improvement orientation	Seeks input, external information/expertise
		Develops monitoring system and adapts to evaluation information
		Responds to feedback and shifting conditions
		Program culturally competent in design
Programmatic Capacity	***Clear, focused programmatic objectives***	
	Realistic goals	Identifies intermediate goals
		Achieves “quick wins”
	Unique and innovative	Program fills unmet community needs
		Program provides innovative services
	Ecologically valid	Program driven by community needs
		Program culturally competent in design

The content of the CCF is discussed in more detail below with an emphasis given to the three Components and their respective Elements that are tested empirically in the present study. Programmatic Capacity was not assessed in this study given a lack of available survey or observational data that directly assessed the quality of resources provided by the SCC. Findings and examples from the previous review (Zander, 2012), as well as other relevant research, provide evidence for the relevance of each CCF component and the respective elements in the effective functioning of SCCs. To distinguish between CCF content below, components are capitalized, elements are italicized, and sub-elements are denoted by quotations with no source provided. Unless otherwise noted, percentages in the following section represent the number of studies out of 26 that referenced a particular element or sub-element of the CCF regardless of whether existing capacity or a lack thereof was cited.

Member Capacity

Member Capacity refers to the essential skills, knowledge, and attitudes of the individual stakeholders belonging to organizations engaging in collaborative activities (Foster-Fishman et al., 2001). A coalition's membership is widely regarded as its most valuable asset (Wandersman, Goodman, & Butterfoss, 1997) because collaborative work often places unique demands on participants, requiring a range of specialized skills, knowledge, and attitudes (Foster-Fishman et al., 2001). As a result, the existing capacity stakeholders bring to the coalition, as well as ongoing efforts to assess and improve their collaborative capacity, is fundamental to the success of the SCC.

Nearly all of the studies included in the previous review referenced stakeholder's *core attitudes and motivation* (n = 25; 96%) as essential to the success of SCCs. Capacities categorized under this element of Member Capacity are either focused on stakeholders' attitudes

and motivations towards collaboration itself, or concerning the other groups involved in the SCC. With regards to the former, stakeholders' "belief that collaboration will be productive, worthwhile, and achieve goals" was found to be especially relevant to SCC implementation as it was cited in 15 (58%) studies. Capacity in this sub-element was described as contributing positively to members' confidence or "buy-in" that their meaningful and sustained participation in SCC implementation would result in positive outcomes (Anderson, Houser, & Howland, 2010, Epstein, 2005). Additionally, several previous studies have identified a relationship between stakeholders' perceptions of the costs and benefits of involvement in coalitions and their subsequent level of participation (Chinman, Wandersman, & Goodman, 2005; McMillan, Florin, Stevenson, Kerman, & Mitchell, 1995; Prestby, Wandersman, Florin, Rich, & Chavis, 1990).

School and community stakeholders' attitudes towards one another, as well their motivation to work together, also influences the effectiveness of SCCs. In particular, "viewing others as legitimate, capable, and experienced" (n = 11; 42%) and "holding positive views of other stakeholders" (n = 9; 35%) were cited frequently in the previous review as contributing to the success or failure of SCCs. School-based stakeholders reported value in visibly demonstrating an "assets-based approach" when interacting with community representatives. Utilizing the unique knowledge and experiences of community partners to inform the development and implementation of SCCs allowed stakeholders to "build on existing strengths to address pressing needs" (Miller & Hafner, 2008, p. 89).

Another element of Member Capacity, *core skills and knowledge* was also cited in nearly every study (n = 23; 88%). Capacities categorized under this element are either focused on stakeholders' ability to collaborate with one another, or concerned with their existing knowledge and experiences pertaining to the school, the community, or other stakeholders. Specifically,

stakeholders' "understanding of the target community" was a sub-element of *core skills and knowledge* reported frequently (*n* = 11; 43%) as facilitating effective SCCs. Depending on the focus of the SCC, an understanding of the school, the surrounding neighborhood, or both was valued. For example, Bosma et al. (2010) reported that "partners' deep roots in the community, long-standing relationships with schools, and understanding of the students and their families allowed for programming tailored to the social context of the study's schools" (p. 504). Additionally, stakeholders' "knowledge about the norms and perspectives of other members" contributed to the quality of the relationship between the school and community partners (n = 10; 38%). Because the social and political context of schools is dynamic and complex, community partners with an understanding of the norms and perspectives of school-based stakeholders are more likely to develop meaningful and productive relationships (LaPoint, 2004; Warren, 2005).

The final element of Member Capacity represented in the proposed study, *coalition builds member capacity* (*n* = 14; 54%), was accomplished most frequently in the previous review through the "provision of technical support in needed areas" (*n* = 13; 50%). Relatedly, Epstein and Sanders (2006) have discussed the need to explicitly prepare teachers to collaborate with families and community members due to the difficult nature of this work. Authors of studies included in the previous review often described technical support in the form of professional development for stakeholders, meant to assist them with effectively implementing and sustaining SCCs (e.g., LaPoint & Jackson, 2004). For nearly half of the studies that highlighted this sub-element, universities acted as a community partner and professional development provider.

Relational Capacity

The second CCF component, Relational Capacity, refers to the social relationships within and across organizations that serve as a fertile medium for collaboration (Foster-Fishman et al.,

2001). When the relationships between coalition stakeholders develop positively, they can facilitate access to needed resources (Lin, 1999), promote member commitment, satisfaction, and involvement (Butterfoss, Goodman, & Wandersman, 1996; Sheldon-Keller, Lloyd-McGarvey, & Canterbury, 1995), as well as increase the likelihood that coalition efforts will be sustained long-term (Chavis, 1995).

Particularly fundamental to Relational Capacity is *developing a shared vision* (n = 20; 77%). According to the CCF, three sub-elements, "superordinate goals," "shared solutions," and a "common understanding of problems," support the development of a shared vision. Results indicated that of these sub-elements, stakeholders' having "superordinate goals" (n = 17; 65%) was the most fundamental to establishing a shared vision as it was referenced in the majority of studies that described this process. SCC effectiveness is improved when the goals are agreed upon by multiple stakeholder groups and there is a collective understanding that those goals cannot be achieved without contributions from each partner involved (Anderson et al., 2010; Borthwick, Stirling, Nauman, & Cook, 2003).

The second element of Relational Capacity represented by the items included in the proposed study is *developing a positive working climate* (n = 17; 65%). Of the five related sub-elements that characterize a positive working climate, being "open and honest" (n = 12; 46%) was referenced most often in the previous review. Capacity in this sub-element facilitates relationship building between school and community partners by helping them avoid and overcome conflicts (Sanders & Harvey, 2002), as well as makes them feel "comfortable voicing their opinions, disagreeing with others, and being honest about their experiences, perspectives, and feelings" (Warren, 2005, p. 349). It has also been reported that like other complex

relationships, honesty between stakeholders increases the longer the SCC is implemented (Bringle, Starla, Grim, & Hatcher, 2009).

Another element of Relational Capacity, p*romoting power sharing* (n =15; 58%) was most frequently attempted through the use of "participatory decision making processes" (n = 14; 54%) such as a co-chair system in which the SCC was guided by three individuals, each representing a different stakeholder group (Miller & Hafner, 2008). More commonly, decisions regarding the SCC were presented to all stakeholders "for approval and input as true collaborations build consensus among partners by involving them in all aspects of the decision-making process" (Grim & Officer, 2010, p. 59). Previous research suggests that participatory decision making processes are correlated with an improvement of coalition member satisfaction and perceived benefits (Butterfoss et al. 1996; Shortell et al., 2002; Weiner, Alexander, & Shortell, 2002). Conversely, studies that reported a lack of capacity in this sub-element often described community representatives' frustration and subsequent decrease in involvement in the SCC because of a lack of decision-making input (Firestone & Fisler, 2002).

Organizational Capacity

The third CCF component, Organizational Capacity, refers to the collective ability of a coalition to engage their members in collaborative tasks that will result in the desired outcomes (Foster-Fishman et al., 2001). Developing sufficient Organizational Capacity is fundamental to the survival of SCCs, yet many efforts to collaborate have failed due to the lack of attention paid to establishing an effective operational infrastructure for working together (Center for Mental Health in Schools, 2011). One of the most fundamental elements of Organizational Capacity is *effective communication* (n = 22; 85%) between school and community stakeholders. Nearly every study that described an existing or a lack of capacity in this element also referenced the

related sub-element of "timely and frequent information sharing, problem discussion, and resolution" (n = 20; 77%). Capacity in this sub-element is vital, as the complex nature of developing and implementing SCCs necessitates weekly, if not daily communication (Borthwick et al., 2003; Bringle et al., 2009). In many cases, an "effective internal communication system" (n = 5; 19%) was cited as facilitating information sharing between stakeholder groups. Communication systems often entail frequent and ongoing informal personal conversations, small or large format stakeholder meetings, and the structured exchange of written information (e.g., email or referrals) (Borthwick et al., 2003; Hands, 2005). Williams (2006), observed that without an effective system, the communication between school and community stakeholders "was challenging, disjointed, and these schools did not make full use of the services available to them because they could not make appropriate referrals to community agencies or follow up and get feedback in any kind of systematic way. These schools became frustrated and often gave up" (p. 27).

Effective communication between SCC stakeholders also facilitates a *continuous improvement orientation* (n = 21; 81%), the third most frequently cited element of Organizational Capacity in the previous review. SCCs most commonly displayed capacity in this element by actively "responding to feedback and shifting conditions" (n = 13; 50%). Due to the constantly changing school and community context, stakeholders found value in eliminating ineffective programs, updating goals, and refining planning structures (Anderson-Butcher et al., 2010; Borthwick et al., 2003). A lack of flexibility can result in the SCC becoming obsolete and irrelevant to stakeholders over time given that school and community environments are constantly shifting (Hands, 2005).

Another element that contributes to the Organizational Capacity of SCCs is having *sufficient resources* (n = 19; 73%). The CCF includes two of these resources, monetary and human, both of which were cited frequently in the previous review (n = 14; 54%). However, the CCF does not include "time" as a fundamental resource to successfully implement SCC even though it was cited by eight studies in the previous review. As mentioned previously, developing an effective SCC is often a complex and difficult process. Accordingly, an item assessing the presence or lack of time available to stakeholders to carry out this challenging work is included in the proposed study as it is fundamental to their collective ability to achieve the desired goals of the SCC (Center for Mental Health in Schools, 2011).

The fourth element of Organizational Capacity represented in the proposed study is *effective leadership* (n = 17; 65%). Previous research indicates that effective coalition leadership is critical in creating a collective force capable of achieving ambitious goals (Brown et al., 2012), and has been linked to increased stakeholder satisfaction (Kumpfer, Turner, Hopkins, & Librett, 1993).While some articles included in the previous review referenced the importance of community-based leadership (e.g., Grim & Officer, 2010), the majority highlighted the vital role of the principal in determining the success or failure of the SCC (e.g., Warren, 2005).

For example, Hands (2005) argued that, "partnership opportunities are limited or unavailable for schools if the principals do not see the value of the liaisons. Principals function in the capacity of decision-maker and gatekeeper for partnerships. Thus, even if there is support for partnering among the school staff, the principals play a crucial role in paving the way for partnership development" (p. 79). According to the CCF, effective leadership entails five related capacities, and only one of those sub-elements, "develops positive internal and external relations" (n = 13; 50%) was cited in more than half the sample included in the previous review.

Specifically, principals with capacity in this sub-element were able to increase the active participation of school staff in developing and implementing SCCs (Firestone & Fisler, 2002), as well as facilitate a greater quantity and quality of community partnerships (Sanders & Harvey, 2002).

Assessing School-Community Collaboration Functioning

The previous review confirmed that the CCF sufficiently represents the competencies and processes cited in the literature as necessary to successfully implement collaboratively-based interventions managed by school and community stakeholders (Zander, 2012). Specifically, 77% (n = 20) of the sample of studies that focused on the implementation of SCCs described competencies or processes corresponding to each CCF component. Also, the SCC-related capacities cited in each study represented an average of 57% of the elements included in the CCF (see Table II). Although originally developed to represent the core capacities that facilitate effective collaborations between community organizations, the previous review provided strong evidence that the CCF is a valid framework for supporting school-based collaborations as well.

Table II. Percent of SCC Studies that Cited Collaborative Capacity in CCF Elements

CCF Element	CCF Component	# Studies Citing Existing Capacity	# Studies Citing Lack of Capacity	# Studies Total	% Total Studies
Core Attitudes Motivation	MC	20	13	25	96%
Core Skills and Knowledge	MC	19	9	23	88%
Formalized procedures	OC	20	6	22	85%
Effective communication	OC	19	8	22	85%
Continuous improvement orientation	OC	19	2	21	81%
Develops a shared vision	RC	19	5	20	77%
Develops Positive External Relationships	RC	17	5	20	77%
Sufficient resources	OC	13	10	19	73%
Develops a positive working climate	RC	13	6	17	65%
Effective Leadership	OC	14	6	17	65%
Coalition supports member involvement	MC	15	6	16	62%
Promotes power sharing	RC	12	4	15	58%
Coalition builds MC	MC	14	2	14	54%
Values diversity	RC	12	3	13	50%
Access to MC	MC	0	0	0	0%
Task-oriented work environment	OC	0	0	0	0%

Note. Total $N = 26$.
Note. "MC" – Member Capacity; "OC" – Organizational Capacity; "RC" – Relational Capacity.
Note. Some studies cited existing capacity and a lack of capacity in the same element.

Additionally, Durlak and DuPre (2008) reported two findings from their aforementioned meta-analysis that also directly supports the use of the CCF to inform the development and study of SCCs. First, they established that developing sufficient stakeholder capacity is essential for implementing effective prevention and promotion programs. Second, they identified ten common factors that contribute towards the effective implementation of interventions; all of which are included in the CCF and were represented frequently in my previous review. Three of these factors, positive work climate, shared decision making, and effective leadership are all represented verbatim in the CCF. Each of the remaining seven factors is listed below, followed by the CCF element or sub-element that it most closely represents: (a) coordination with other agencies (connects with other communities and coalitions targeting similar problems), (b) formulation of tasks (formalized procedures), (c) program champions (skilled convener), (d) administrative support (organizational support and institutional backing of coalition participation), (e) providers' skill proficiency (core skills and knowledge), (f) funding (financial resources to implement/sponsor new programs and operate the coalition), and (g) technical assistance (provides technical support in needed areas).

In sum, based on the commonalities found across the results of my previous review and the factors identified by Durlak and DuPre, the CCF appears to accurately represent the core competencies and processes that facilitate successful SCCs. As Durlak and DuPre (2008) argued, "when independent researchers use different methods to examine different literatures but nevertheless reach similar conclusions there is good convergent validity to the common findings" (p. 340). However, given the qualitative methodology of my previous review, additional empirical support is needed to demonstrate that the CCF comprehensively identifies and organizes SCC-related capacities in a valid framework. Ultimately, the CCF will most benefit

SCC researchers and practitioners by serving as a resource for the development of a reliable and valid measure of SCC implementation.

In a recent examination of frameworks available to support the measurement of coalition functioning, Brown et al. (2012) highlighted the CCF for being "logically sound" and referenced the strength of the empirical support for the inclusion of its various elements. However, the authors also observed that "the organization of the framework itself lacks empirical support" (p. 487). Unfortunately, the absence of data regarding the measurement structure of the CCF is a common issue plaguing most tools that claim to assess coalition functioning constructs. Granner and Sharpe (2004) performed a review of over 140 measures of coalition functioning and found that less than a third of the included assessments provided any reliability or validity information. Even more problematic, the majority of included measures were not clearly derived from an established theoretical framework. My previous review (Zander, 2012) corroborated Granner and Sharpe's findings, as only four studies out of sixteen that included a quantitative assessment of SCC functioning referenced evidence that their measures were derived from a theoretical framework. Of these four studies, only one provided any reliability or validity information, citing triangulation of survey data with interview and observational information, as well as having stakeholders review survey questions and results for accuracy (Firestone & Fisler, 2002).

Furthermore, the few studies that have explicitly examined the reliability and validity of measures of SCC functioning have failed to recognize the multilevel structure of the data collected from multiple coalitions (Barile, Darnell, Erickson, & Weaver, 2012). Specifically, when data is collected from multiple members within the same coalition, there is potential for variance in perceptions of collaborative functioning both within and across different coalitions. Most previous research has either ignored the nested structure of collaborative data and

conducted analyses at the individual-level, or aggregated stakeholder perceptions at the group-level. Statistical analyses associated with both of these approaches, such as Generalized Linear Modeling and Factor Analysis, are erroneously based on the assumption of the independence of observations, potentially leading to false positives and incorrect standard error estimates (see Dedrick & Greenbaum, 2010 for a review). A multi-level approach is appropriate for empirical study of SCCs due to the use quantitative data collected from groups of stakeholders working across a number of different schools. Fortunately, due to recent advances in statistical modeling programs (Muthen & Muthen 2010), the first two studies examining the multilevel measurement structure of assessments of coalition functioning were published in peer reviewed journals in the past few years (Barile et al., 2012; Brown et al., 2012). Based on data collected from stakeholders participating in community coalitions, both of these studies tested the ability of a set of items to represent distinct dimensions of collaborative functioning at the individual- and coalition-level.

In Barile et al's. (2012) study, the authors used multi-level analysis techniques to assess if the "Collaborative Member Scale" (CMS) represented five conceptually and empirically unique aspects of coalition functioning: The sample included members (N = 2,964) of 157 coalitions in the Georgia Family Connection (GFC), a network of county-level partnerships that acted as local decision-making bodies for communities to improve child and family well-being. The CMS was created by selecting 21 items from a larger 56 item scale originally designed to assess the degree to which coalitions had fulfilled the requirements outlined in the GFC's 12 "standards for excellence." The CMS was further refined based on preliminary analyses that revealed a 12-factor model representing each GFC standard did not sufficiently fit the survey data. As a result, the CMS ultimately assessed five of the GFC's standards for excellence, each of which displayed

considerable face validity with Elements in the CCF. The constructs measured in Barile et al.'s (2012) study are listed below, followed by the CCF element (in italics) they most closely represented: (a) participatory planning process (*promotes power sharing*), (b) internal communication (*effective communication*), (c) leadership effectiveness (*effective leadership*), (d) family involvement (*values diversity*), and (e) budgeting (*sufficient resources*). As each of the CCF elements highlighted above is represented by items included in the present study, Barile et al.'s (2012) findings regarding the measurement structure of the CMS are particularly pertinent. Overall, Barile et al.'s (2012) results indicated that the items included in the CMS represented five semi-independent constructs that may also serve as indicators for a higher-order factor of coalition functioning.

Brown et al.'s (2012) study built off previous work conducted by Feinberg et al. (2008) who presented a singular scale of coalition functioning with adequate reliability and validity statistics. Brown et al. (2012) then attempted a more nuanced analysis by testing the measurement structure of a multi-dimensional assessment of coalition functioning using an additional three years of survey data collected from members (N = 732) of 53 community-level coalitions implementing the Communities that Care (CTC) program. The CTC model "guides coalitions through the process of collecting local epidemiological data, selecting evidence-based programs, developing effective implementation and evaluation plans, and executing plans in a sustainable manner" (p. 488). The survey used by Brown et al. (2012) measured five aspects of coalition functioning and was comprised of original items developed by the authors, as well as scales used in previous research. The empirically unique constructs found in Brown et al.'s (2012) study are listed below, followed by the CCF element (in italics) they most closely represented: (a) interpersonal relationships (*develops a positive working climate*), (b)

participation benefits and costs (*core attitudes and motivations*), (c) leadership (*effective leadership*), (d) task focus (*task oriented work environment*), and (e) sustainability planning (*continuous improvement orientation*). Brown et al.'s (2012) findings are also relevant, as the first three CCF elements highlighted above are represented by items included in the present study.

Building on the rigorous methods and promising findings of Barile et al. (2012) and Brown et al., (2012), the present study similarly assesses the multi-level measurement structure of a framework of coalition functioning, but focuses specifically on collaborations between school and community stakeholders. A rigorous measurement development process, entailing the repeated analyses of the psychometric properties of an assessment of SCC functioning across different populations is beyond the scope of the present study. However, this research represents a significant advance for the SCC literature as the first multi-level assessment of a framework that identifies and classifies the core competencies and processes that facilitate effective collaboration between school and community stakeholders. Barile et al.'s (2012) and Brown et al.'s (2012) findings are discussed in greater detail in the section below, organized according to the research questions and accompanying hypotheses that they most directly influenced in the present study.

The Present Study

This study relies on survey data collected from stakeholders implementing a community schools model. As mentioned in the introduction, community schools are one of the many community-focused school reform strategies that have become increasingly popular over the past decade. However, research focusing on community schools is particularly pertinent, as this approach has garnered more public and private sector support than many of the other reform

efforts focused on developing collaborations between school and community stakeholders (Center for Mental Health in Schools, 2011). Although a number of definitions of community schools exist, the one most commonly cited is provided by the Coalition for Community Schools, a leading authority and advocate of this reform strategy. The Coalition defines a community school as "a place and a set of partnerships housed in a school building that is open year round to students, families and the community before, during, and after school. It is jointly operated and financed through a partnership between the school and one or more community agencies" (Coalition for Community Schools, 2015.).

This particular group of schools was sampled for the present study because they were adopting a community schools approach that represents both of the fundamental characteristics of SCCs grounded in the community development perspective: (a) the use of local resources that are often passed over for professional service providers (e.g., non-for profit community-based organizations acting as Lead Partner Agencies), and (b) the meaningful participation of school and community members beyond the passive reception of services (e.g., community school advisory committee). These strategies, along with a number of other structures and processes that align with a community development approach to SCCs, are highlighted in the corresponding community schools Implementation and Sustainability Process Strategy (ISPS) (see Figure 1).

The ISPS was developed collaboratively by school and community stakeholders, external evaluators, and me to guide the implementation and sustainability of this particular community school approach (Zander, Burnside, & Poff, 2010). The inner, or implementation ring, guides users through three primary phases: readiness, planning, and program delivery. The outer, or sustainability ring, describes recommended best practices and operating principles to ensure that stakeholders are able to identify, assess, and reflect on the dynamic needs of students and adults

in order to augment the corresponding supports and resources. Although the ISPS and other similar guides are necessary to successfully develop and maintain SCCs, alone they are not sufficient. The next and vital step is to quantitatively assess the core structures and processes of SCCs, as in the absence of empirical data on the implementation of an intervention, researchers or stakeholders cannot assess what was conducted, or if it resulted in improved outcomes for the targeted population.

With this imperative in mind, external researchers, local school and community stakeholders, and I developed and disseminated a survey to assess adoption of the ISPS framework within and across schools. Surveys were completed by a variety of stakeholders, including teachers responsible for delivering community school programming during and after the regular school day. Despite their important role in the development and sustainability of effective collaborations with community stakeholders, the literature regarding teachers' participation in SCCs is minimal (Epstein, 2005). However, Hogue (2012) found that teachers' interest in collaborating with local stakeholders, as well as their understanding of the surrounding community, is integral in determining the efficacy of a SCC. This is particularly true for schools sampled in the present study, as resource coordinators (an employee of the community-based agency that works full time in the school) rely heavily on teachers to provide information on students' needs and to lead programming for children and adults (Zander et al., 2010).

Due to the significant overlap between the content of the ISPS and the CCF, the previously collected teacher survey data can be repurposed for the present study. Similar to the work of Barile et al. (2012) and Brown et al. (2012), this study will attempt to leverage survey data collected on the implementation of a specific reform approach (i.e., the ISPS) to inform the empirical validation of a broader framework of SCC functioning (i.e., the CCF) that can be

useful to a wider variety of school-based coalitions. The specific research questions included in the present study are described in more detail below, along with accompanying hypotheses based on previous research.

Research Questions and Hypotheses

Is there sufficient evidence to execute and recommended a multi-level approach to the empirical study of School-Community Collaborations? As previous research suggests that stakeholder perceptions of coalition functioning are likely to vary greatly significantly within- and between-groups (Barile et al., 2012; Brown et al., 2012), it is expected that each of the included items will display sufficient between-school variance to conduct multi-level analyses. Intra-Class Correlations (ICCs) will be calculated for each of the included items to assess the amount variability in survey responses between and within schools. ICCs range from 0 to 1.0 and bigger values indicate less clustering of data within schools and therefore more variance between those groups (Dedrick & Greenbaum, 2008; Dyer, Hanges, & Hall, 2005). Previous research does not provide rigid guidelines for an ICC cut-off value that indicates multilevel analyses is justified, however, studies generally only include items with ICCs greater than .05 (Heck & Thomas, 2009).

Is the factor structure of the Collaborative Capacity Framework similar to or different from the factor structure at the school-level? Limited previous research (Brown et al., 2012; Dedrick & Greenbaum, 2010) suggests that the best-fitting structure of a measure of coalition functioning will likely include different factor configurations at each level. Accordingly, it is expected that the best fitting CCF measurement structure tested in the present study will include a unique factor structure at the individual- and school-level. Model fit will be assessed through a

number of statistical indices produced by multi-level confirmatory factor analysis (see Methods section for more detail).

Are the three factors that comprise the Collaborative Capacity Framework empirically distinct from one another? The dimensionality of CCF components will be determined primarily by examining their inter-factor correlations at the individual- and school-level. Any inter-factor correlations less than .70 are considered to be empirically distinct as suggested in the previous literature (Hoyle, 2012). The present study will also include a variety of statistical indices that test the overall fit of one- and three-factor models of SCC functioning. Previous research suggests that the components of the CCF (as well as other indicators of coalition functioning) are highly interdependent on one another (Foster-Fishman et al., 2001). However, Barile et al. (2012) and Brown et al. (2012) were both able to identify five to six conceptually and empirically unique factors that contributed to coalition functioning. Accordingly, it is expected that the three CCF factors included in the proposed study, Member-, Relational, and Organizational-Capacity, will be positively correlated with one another, but will still display inter-factor correlations less than .70. Additionally, Barile et al.'s (2012) findings suggest that identifying empirically distinct constructs of coalition functioning is more difficult at the group-level. As a result, it is hypothesized that relationships among CCF constructs will be stronger at the school-level than the individual-level.

Do the three factors that comprise the Collaborative Capacity Framework display adequate reliability? While no previous empirical research regarding Member-, Relational-, and Organizational Capacity exists, Barile et al. (2012) and Brown et al. (2012) tested the internal consistency of similar constructs of coalition functioning (e.g., communication, coalition efficiency) and found that they displayed adequate reliability. Accordingly, it is expected that

each factor, along with composite reliability of the framework will display an alpha coefficient greater than .60, the minimum value recommended in the published literature (Hoyle, 2012).

What is the strength and direction of the relationship between each item and the latent factors they are hypothesized to represent? No previous research exists in the published literature regarding the specific items used in the present study. However, Barile et al. (2012) and Brown et al. (2012) reported positive and significant factor loadings for items that have considerable conceptual overlap with items included in the proposed study. Accordingly, based on those findings, as well as the face validity of the included items to measure the component of the CCF they have been assigned to, it is expected that each item will be positively and significantly associated to their respective factors and exceed the minimum loading size of .70 outlined in previous research (Hulland, Chow, & Lam, 1996). Based on the limited available research (Barile et al., 2012), it is expected that factor loadings for the included items will also differ based on the latent variable (i.e., CCF component) they are hypothesized to represent.

As items related to Member Capacity are more directly associated with stakeholder-level characteristics (e.g., "The Resource Coordinator is considered a member of the school community"), their factor loadings are expected to be stronger at the individual-level. Conversely, as items related to Relational Capacity (e.g., "Decision-making at the school is shared among staff members") and Organizational Capacity (e.g., "There is adequate time for the planning and organization of instructional activities in the school") assess group characteristics, factor loadings related to these CCF components are hypothesized to be stronger at the school-level.

What is the relationship between each CCF factor and stakeholders' perceptions of SCC success? Based on the methodology used in similar research (Brown et al., 2012; Marek, Brock,

& Savla, 2014), the present study will assess convergent validity by examining the relationship between each CCF factor and stakeholders' perceptions of SCC success. SCC success was assessed through an item asking teachers what percentage of students they believe benefited from participation in SCC programming. It is expected that each CCF factor will be positively and significantly associated with teachers' responses to this item. Findings from previous research suggest that the quality of group-level processes or strategies have the strongest relationship with perceptions of coalition success. Therefore, it is hypothesized that Organizational Capacity will display a larger correlation with stakeholders' perceptions of SCC success than Member Capacity or Relational Capacity.

Methods

Sample

Survey data for the proposed study was collected as part of an evaluation of the implementation of a community schools model in a large, urban school district. A sample of 32 elementary and 9 high schools implementing the community schools model were selected to participate in the collection of survey data during the spring and summer of 2012. Surveys were distributed online and in person to 812 regular school day teachers working across the 41 included schools. A total of 467 teachers completed the survey, resulting in a response rate of 58% and an average of 11.4 teachers per community school. The number of stakeholders and schools included in the proposed study exceeds the minimum sample size requirements for multi-level analysis suggested in the published literature (Hoogland & Boomsma, 1998; Meuleman, Davidov, & Billiet, 2009).

Measures

The original surveys were developed collaboratively by district-level staff, an external evaluator, local stakeholders, and me. The goal of this survey development process was to create measures that would accurately assess the perceptions of key stakeholders regarding implementation of community school practices detailed in the aforementioned ISPS (see Figure 1). The teacher survey contained items that measured the degree to which normative factors like collaboration, collective efficacy, responsibility, and trust had taken root within the building. Teachers were also asked about their perception of how well various features of the community school model were working at their school (see Appendix A).

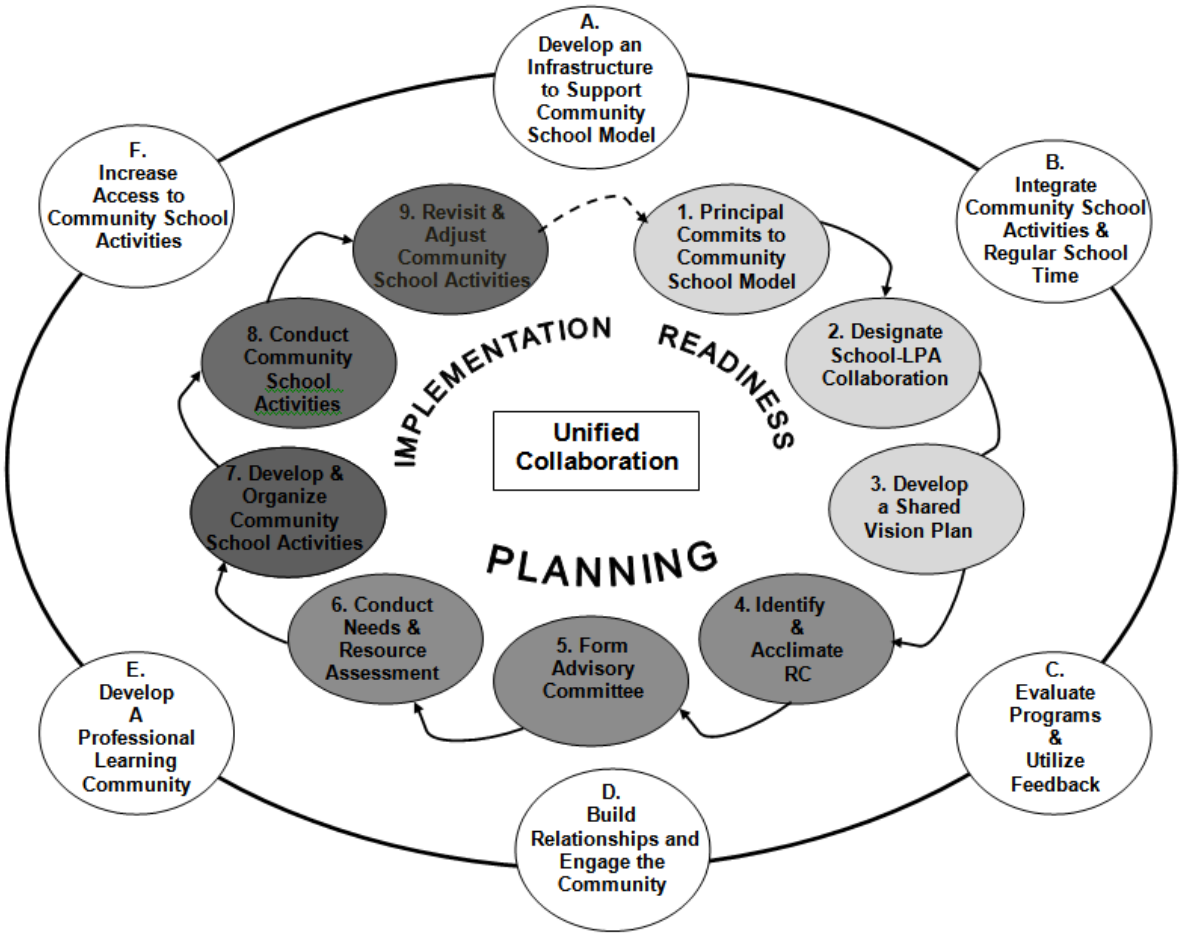

Figure 1. Community Schools Implementation and Sustainability Process Strategy

For the present study, the teacher survey was reviewed to identify items that displayed adequate face validity with the competencies and processes outlined in the CCF. I conducted the initial review, assigning teacher survey items to specific CCF components. Next, two peers (who also participated in the community school evaluation) conducted the same process

independently. Fortunately, there was over 90% agreement between my selections and those of my peers in terms of which CCF component each item should or should not be associated with. Collectively, this review highlighted 11 items, eight of which were stem questions associated with a variety of sub-items. For example, one of the included stem questions was, "During the current academic year, approximately how often have you discussed strategies for addressing the needs of specific students or families with the following?" And the related sub-items were, "other teachers; the principal; an assistant principal, a school counselor, the resource coordinator, community school activity leaders." All of the selected items were measured on a four point scale, with the response options varying slightly according to question content. Selected items were coded according to the CCF component (e.g., Organizational Capacity) and related element (e.g., effective leadership) that they most closely represented. Based on these codes, the included items were organized into scales designed to measure three CCF component, Member Capacity, Relational Capacity, and Organizational Capacity.

The Member Capacity scale was comprised of four stem questions and ten associated sub-items representing three CCF elements (see Table III). Two of the items assessed stakeholders' *core skills and knowledge*, with one question focused on the perceived efficacy of a community-based staff member working full-time in the school and the other on teachers' ability to meaningfully contribute to the SCC. The third Member Capacity item measured teachers' *core attitudes and motivations*, specifically, their belief that the goals of the SCC were valuable and that they were proud of their school's formal partnership with a community-based organization. The fourth and final item in this scale assessed the degree to which the *coalition built member capacity,* asking teachers how often they attended SCC-specific professional development events.

Table III. Descriptive Statistics for Member Capacity Survey Items

Item	CCF Element	Item Content	*N*	Response Rate	*M*	*SD*
MC Item2	Core Skills & Knowledge	The Resource Coordinator:				
		• Makes it possible for students to have positive school experiences	335	70.2%	3.65	.59
		• Reduce barriers to learning in the school	328	68.8%	3.43	.72
		• Is considered a member of the school community	327	68.6%	3.60	.65
MC Item3	Core Skills & Knowledge	Teachers and staff at your school:				
		• Promote community school activities to students	419	87.8%	3.41	.69
		• Promote community school activities to parents	404	84.7%	3.23	.78
		• Contribute ideas for improving community schooling	390	81.8%	3.21	.81
MC Item4	Core Attitudes & Motivation	Teachers and staff at your school:				
		• View the goals of the community school as consistent with the goals of the school as a whole	399	83.6%	3.43	.75
		• Demonstrate or communicate pride in the community schooling aspect of the school.	402	84.3%	3.34	.77
MC Item5	Coalition Builds Member Capacity	During the current year how many of the following professional development events did you attend:				
		• PD focused on the development or delivery of programs or services	458	96.0%	2.48	1.11
		• PD focused specifically on the community school model or on the delivery of programs and services within a community school setting.	455	95.4%	2.00	1.03

The Relational Capacity scale consisted of two stand-alone items and two stem questions associated with four sub-items, representing four different CCF elements (see Table IV). The first item evaluated if the SCC *values diversity* by questioning how much influence community-based stakeholders (e.g., parents and other adults) have in determining how to achieve school goals. Next, teachers were asked if the SCC had been successful in *developing a shared vision* for promoting student success. The third item assessed the degree to which the coalition *promoted power sharing* by allowing a variety of stakeholders to participate in the decision making process around SCC implementation. The final Relational Capacity item focused on whether or not the SCC has *developed positive external relationships* by encouraging input or feedback from parents and other adults in the community.

Table IV. Descriptive Statistics for Relational Capacity Survey Items

Item	CCF Element	Item Content	*N*	Response Rate	*M*	*SD*
RC Item1	Values Diversity	How much influence do the following stakeholders have about how to achieve school goals:				
		• Parents	396	83.0%	2.88	.90
		• Community members (other than parents)	342	71.7%	2.66	.87
RC Item2	Develops a Shared Vision	School staff members share a common vision for promoting student success.	447	93.7%	3.52	.65
RC Item4	Promotes Power Sharing	Decision-making at the school is shared among staff members.	442	92.7%	3.05	.87
RC Item5	Develops Positive External Relationships	The school encourages input from:				
		• Parents	431	90.4%	3.30	.80
		• Community members (other than parents)	405	84.9%	3.19	.85

The Organizational Capacity scale included one stand-alone item and two stem questions associated with nine sub-items that represented three CCF elements (see Table V). A *continuous improvement orientation* was assessed through an item asking teachers how often they had discussed the ongoing needs of specific students with a variety of school- and community-based stakeholders (e.g., other teachers, principal, & resource coordinator). The second item focused on *effective communication* within the SCC by evaluating if there was an effective flow of information between school staff, parents, and other adults in the community. Finally, the availability of *sufficient resources* was measured by asking teachers if there was adequate time available for the planning and organization of instructional activities at the school.

Table V. Descriptive Statistics for Organizational Capacity Survey Items

Item	CCF Element	Item Content	*N*	Response Rate	*M*	*SD*
OC Item2	Continuous Improvement Orientation	How often have you discussed strategies for addressing the needs of specific students or families with:				
		• Other teachers	441	92.5%	3.25	.90
		• The principal	420	88.1%	2.26	.94
		• An assistant principal	370	77.6%	2.31	.96
		• A school counselor	405	84.9%	2.37	1.01
		• The Resource Coordinator	334	70.0%	2.05	.99
		• Community school activity leaders who are not also school-day teachers	324	67.9%	1.93	1.00
OC Item3	Effective Communication	There is an effective flow of information between the school and:				
		• School staff	444	93.1%	3.12	.86
		• Parents	436	91.4%	3.17	.78
		• Community members (other than parents)	394	82.6%	3.03	.84
OC Item4	Sufficient Resources	There is adequate time for the planning and organization of instructional activities in the school.	441	92.5%	2.94	.90

Across the three scales, the eight items containing a stem question were each transformed into item parcels by averaging participants' responses across the relevant sub-items. Although item parceling is a somewhat divisive practice (see Little, Cunningham, Shahar, & Widaman, 2002 for a review) it has a number of advantages, including better fit statistics for proposed models, reduced bias in estimates of model parameters, and the amelioration of adverse effects of non-normally distributed data (Bandalos, 2002). Furthermore, Little et al. (2002) argued that "If the exact relations among items are the focus of the modeling, one should not parcel; on the other hand, if the relationships among the constructs are of focal interest, parceling is more strongly justified" (p. 169). As the latter is the goal of the current study, item parceling is warranted.

It should be noted that a final, stand-alone item from the aforementioned community school implementation survey was leveraged in the present study. Specifically, teachers were asked: "based on your observations during the current academic year, what percentage of students (0%, 25%, 50%, 75%, or 100%) participating in community school programming have benefited from their participation?" This item was included as a proxy for teachers' perceptions of the effectiveness of the SCC in order to subsequently measure a correlation with responses on each CCF scale.

Analysis Approach

A series of Multilevel Confirmatory Factor Analyses (MLCFA) were conducted to test the validity of the structure and content of a proposed measurement framework of Collaborative Capacity. When conducting MLCFA, path diagrams are helpful to represent a large number of predicted relationships between latent (e.g., Member Capacity) and observed variables (e.g., stakeholder responses on Member Capacity items).The hypothesized relationships between survey items and the CCF components that they represent are depicted in Figures 2 and 3.

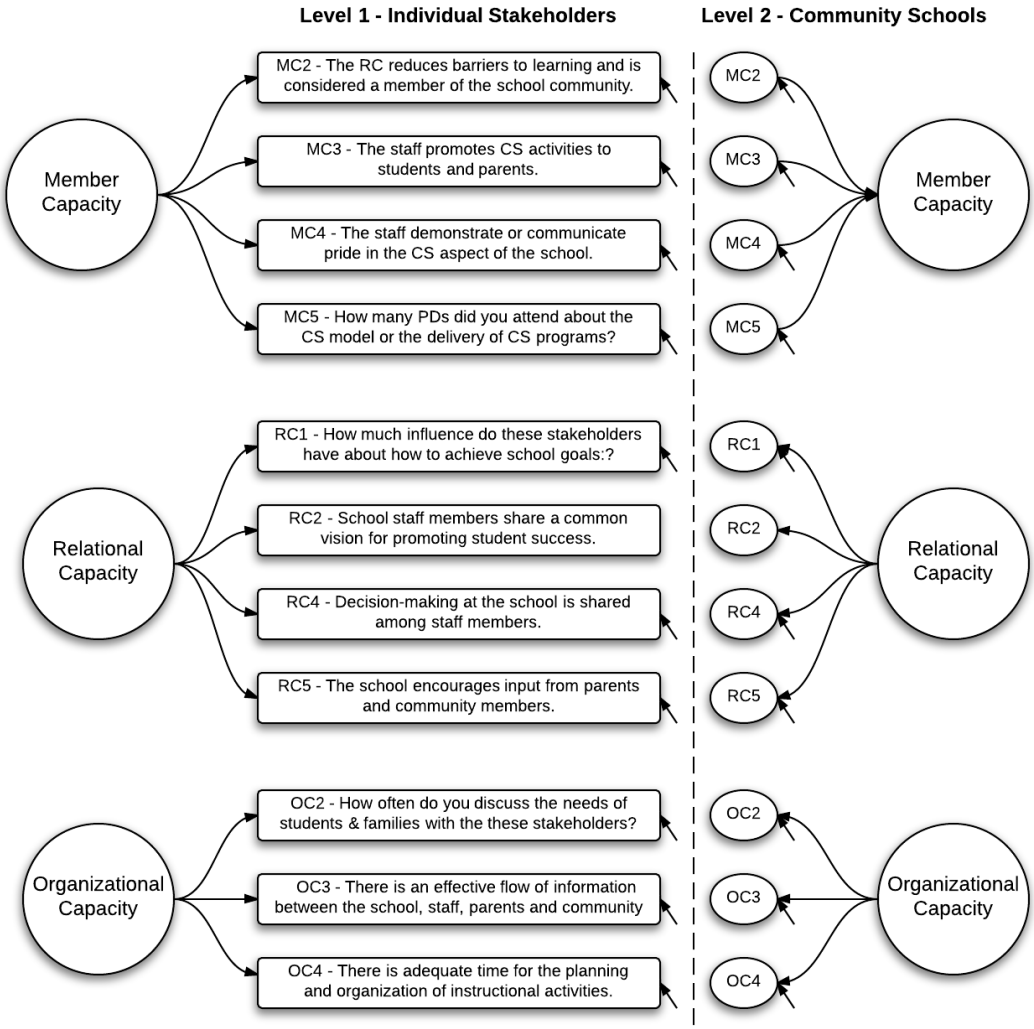

Figure 2. Model 5: Three Factors at the Teacher- and School-Level

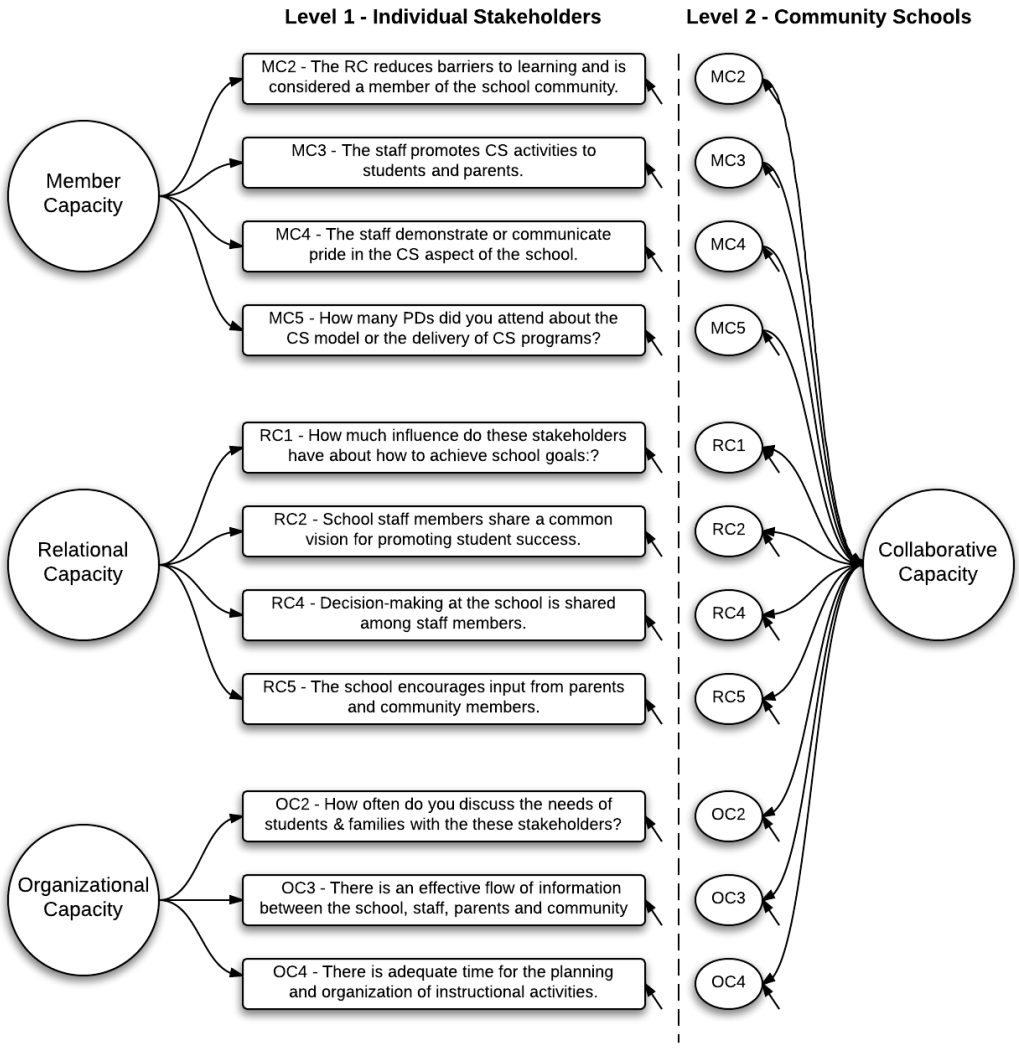

Figure 3. Model 6: Three Factors at the Teacher-Level and One Factor at the School-Level

Multilevel Confirmatory Factor Analysis (MLCFA) is a statistical procedure that combines elements of multi-level modeling (MLM) and structural equation modeling (SEM). MLM is used when data violates the basic assumption of independence of observations required for most standard statistical procedures. Educational data requires MLM because observations are typically not independent of one another, but instead "cluster" at the school-level. MLM recognizes this interdependence, and allows for more accurate and nuanced statistical analysis of clustered data (Metha & Neale, 2005).

SEM tests relationships between observed items and latent factors. In SEM, sets of observed items that are typically measured by likert scale responses are hypothesized to reflect an unobservable construct (e.g. Member Capacity). These latent variables, or factors, are interpreted as 'true' variables that underlie the measured items and induce dependence among them. (Metha & Neale, 2005). Factor loadings represent the degree to which responses on a particular item can be attributed to the latent factors they are proposed to represent. The larger a factor loading is, the stronger the evidence that the item actually represents the underlying construct that it has been assigned to measure (Bollen 1989). Hulland et al. (1996) suggested that factor loading estimates of .70 or higher are considered acceptable because this value indicates that the amount of information an item shares with a latent construct is greater than the error variance. As SEM is one of the few statistical procedures that can account for and assess the inherent error in the measurement of most psychological constructs, it is frequently used to conduct factor analysis. "Factor analysis refers to a set of statistical techniques that are used to either explore or confirm the underlying structure among a set of items, and to determine the degree to which those items are influenced by the latent construct they represent" (Dyer et al., 2005, p. 150).

A series of MLCFAs will be conducted in the proposed study using the statistical software *MPlus* (Muthen & Muthen, 2010). MLCFA is an appropriate statistical approach given the clustered nature of the data (stakeholders nested in schools) and the use of surveys that measure latent constructs according to a set of fallible items. MLCFA combines "one separate factor analysis model which accounts for the structure of observations on individuals within groups, and another factor analysis model which accounts for the structure of observed group means" (Klangphahol, Traiwichitkhun, & Kanchanawasi, 2010, p. 3). A five-step procedure for conducting MLCFA has been suggested in previous literature and will guide the analysis in the current study (Muthén, 1994). The initial four steps provide preliminary data on the factor structure of the model at the individual- and school-level, as well as relevant information used to justify ML analyses (Dyer et al., 2005): (a) estimate conventional CFA ignoring hierarchical nature of data, (b), calculate Intra Class correlations (ICCs) for each item, (c), estimate the stakeholder-level factor structure, and (d) estimate the school-level factor structure. The fifth and final step includes the full model, estimating the stakeholder- and school-level factor structures simultaneously.

Estimation of MLCFA yields a number of statistical indicators that will be used to answer the aforementioned research questions: (a) parameter estimates of the factor loadings, (b) inter-correlations between factors, (c) factor variances, (d) residual (i.e. measurement) error for each item, and (e) indices of model fit. Model fit will be assessed using five indices, as no single fit index is considered to be definitive: (a) $\chi 2$ index , (b) Comparative fit index (CFI), (c) Tucker-Lewis Index (TLI), (d) Root mean square error of approximation (RMSEA), and (e) Standardized root mean residual (SRMR). Acceptable cut-off values for each model fit indicator will be determined by the recommendations made by Schreiber et al. (2006) based on their

extensive review of the CFA-SEM literature. Each of these statistical indices represents a different aspect of model fit and will be interpreted in combination with the other (see Klangphahol, Traiwichitkhun, & Kanchanawasi, 2010 for a review).

The methods, results, and discussion of the proposed study have been informed by a series of recommendations suggested by Schreiber, Nora, Stage, Barlow, & King (2006), who conducted a critical review of the SEM/CFA literature. Specifically, the current study includes: (a) research questions and hypotheses that necessitate the use of CFA or SEM, (b) an explanation and rationale for CFA or SEM, (c) sufficient information about the measurement model's conceptual framework, (d) tables and figures that provide relevant descriptive statistics, such as inter-factor correlations and factor loadings, (e) a graphic display of the hypothesized and final models, and (f) practical- and research-based implications that follow from the findings.

Results

The results of this study are organized into three sections. First, I will provide a summary of the descriptive statistics to identify meaningful trends within and across variables, as well as to establish the quantitative context for the present study. Second, I will report the statistical outputs for a series of single-level factor analysis models that tested the structure of the CCF and its components at the teacher-level only. Although there are not any research questions related to these models specifically, they serve as a meaningful comparison to the corresponding multi-level versions. Additionally, as suggested in previous research, due to the complex nature of MLCFA it is recommended to first test a series of single-level models to investigate the underlying factor structure of the proposed multi-level models (Dedrick & Greenbaum, 2010). Third, I will present the findings from a series of increasingly complex multi-level factor analysis models that examined the structure of the CCF at both the teacher- and school-levels. Statistical tests of these multi-level models are the primary purpose of this study and were designed to answer all six of the included research questions. Each analysis was conducted using Mplus 6.0 (Muthen & Muthen, 2010) with weighted least squares estimation, (WLSMV).

Descriptive Statistics

Each of the eleven included items was measured on a four point scale with larger responses indicating a more positive perception of SCC-related structures or processes. Teacher-level item means ranged from 2.24 to 3.54 while school-level item means ranged from 2.20 to 3.62 (see Table VI). Each of the included items was positively and significantly correlated to one another, with an average of r = .43 (see Table VII).

Table VI: Descriptive Statistics for the 11 Item Framework of Collaborative Capacity

Item	*N*	Individual Mean	Individual SD	School Mean	School SD	ICC
MC_Item_2: Resource Coordinator effectiveness	354	3.54	0.61	3.62	0.46	.08
MC_Item_3: Staff promotes SCC activities to parents/students & contributes ideas	423	3.29	0.68	3.36	0.60	.04
MC_Item_4: Staff supports goals of the SCC and demonstrates pride in participation	418	3.37	0.73	3.45	0.64	.04
MC_Item_5: Attendance at SCC related professional development events	460	2.24	0.98	2.20	0.90	.04
RC_Item_1: Influence of parents and community members on how to achieve SCC goals.	444	2.77	0.57	2.99	0.48	.06
RC_Item_2: Staff members share a common vision for promoting student success	447	3.52	0.65	3.58	0.55	.06
RC_Item_4: Decision making at the school is shared among staff members	442	3.05	0.87	3.12	0.68	.17
RC_Item_5: School encourages input from parents and community members	437	3.25	0.80	3.29	0.71	.05
OC_Item_2: Frequency of communication about students amongst school staff and SCC stakeholders	443	2.39	0.73	2.45	0.69	.05
OC_Item_3: Effective flow of information between school staff, parents, and SCC stakeholders	451	3.09	0.77	3.18	0.65	.09
OC_Item_4: Adequate time for the planning and organization of instructional activities	441	2.94	0.90	2.95	0.79	.09

Note. Intra Class Correlation (ICC)

Table VII: Correlation Matrix for the 11 Item Framework of Collaborative Capacity

Item	MC 2	MC 3	MC 4	MC 5	RC 1	RC 2	RC 4	RC 5	OC 2	OC 3	OC 4
MC2: Resource Coordinator effectiveness	1										
MC3: Staff promotes SCC activities to parents/students & contribute ideas	.48*	1									
MC4: Staff supports goals of the SCC and demonstrates pride in participation	.56*	.82*	1								
MC5: Attendance at SCC related professional development events	.19*	.25*	.20*	1							
RC1: Influence of parents and community members on how to achieve SCC goals.	.45*	.43*	.43*	.22*	1						
RC2: Staff members share a common vision for promoting student success	.33*	.41*	.41*	.15*	.40*	1					
RC4: Decision making at the school is shared among staff members	.40*	.40*	.42*	.23*	.58*	.51*	1				
RC5: School encourages input from parents and community members	.41*	.49*	.50*	.29*	.55*	.54*	.60*	1			
OC2: Frequency of communication about students amongst school staff and SCC stakeholders	.27*	.37*	.33*	.38*	.36*	.16*	.35*	.27*	1		
OC3: Effective flow of information between school staff, parents, and SCC stakeholders	.44*	.49*	.46*	.29*	.59*	.57*	.69*	.69*	.33*	1	
OC4: Adequate time for the planning and organization of instructional activities	.39*	.35*	.34*	.26*	.50*	.45*	.71*	.53*	.32*	.68*	1

Note. * indicates correlation significant at $p < .01$.

The lowest rated item (MC_Item5), asked teachers to estimate their attendance at SCC-related professional development events in the past year. The only other item with a mean below 2.75 measured how often teachers discussed strategies to address the needs of specific students with a variety of different school- and community-based stakeholders (OC_Item2). The highest rated item (MC_Item2) focused on teachers' perceptions of the effectiveness of a community-based stakeholder (i.e., the resource coordinator) working full-time in the school to facilitate SCC implementation. The only other item with individual- and school-level means above 3.50 measured teachers' belief that SCC stakeholders shared a common vision for promoting student success (RC_Item2). An item representing a composite measure of SCC success (i.e., what percentage of students participating in SCC programming benefited from the experience?) had a teacher-level mean of 3.26 and a school-level mean of 3.31.

Relational Capacity (M = 3.25) had the greatest mean of the three CCF components at the teacher-level, followed by Member Capacity (M = 3.12) and then Organizational Capacity (M = 2.86). At the school-level, a similar pattern emerged, as Relational Capacity again had the greatest mean of any CCF component (M = 3.32), followed Member Capacity (M = 3.08), and then Organizational Capacity (M = 3.03).

Response rates for each item ranged from 74% (N = 322) to 97% (N = 460) with an average of 90% (N = 423) across all items. The only item with a response rate below 80% (MC_Item2) was focused on the effectiveness of the community school resource coordinator, who may not have interacted personally with all of the teachers who completed the survey. It should be noted that any data corresponding to the fifth response option of "I don't know," was treated as missing and removed in subsequent analyses. Across all items, an average of 10% (N = 47) of participants responded "I don't know."

Each of the eleven items met the criteria to be considered normally distributed, defined by George & Mallery (2010) as skewness and kurtosis statistics that fall between -2.00 and 2.00. Measures of skewness ranged from -1.31 (OC_Item2) to .25 (MC_Item5), and measures of kurtosis ranged from -1.05 (MC_Item5) to 1.95 (RC_Item2). Unfortunately, three items that were originally planned to be included in the present study had to be removed due to abnormal distribution statistics. First, a parceled item regarding teachers' perceptions of the principal's contributions to the SCC was removed based on a skewness of -2.09 and a kurtosis of 4.25 (OC_Item1). Second, an item assessing if school staff created a welcoming environment for community stakeholders had a kurtosis statistic of 2.37 that exceeded the recommended cutoff of 2.00 (RC_Item3). Third, a parceled item focused on teachers' perceptions of their community partner's effectiveness was removed due to an abnormally low skewness statistic of -2.56 that was beneath than the minimum cut-off threshold of -2.00 (MC_Item1).

Teacher-Level Findings

A series of increasingly complex single-level confirmatory factor analyses were performed, beginning with single factor models that tested the fit of the three unique scales that make up the CCF. Results indicated that each of the three single-level, single factor models displayed adequate fit statistics and the Organizational Capacity scale displaying the best fit overall (see Table VIII). All three models had non-significant chi-square tests, CFI and TLI values that well exceeded the cutoff values of .95, as well as RMSEA values well beneath the recommended maximum value of .08. All factor loadings were positive and significantly different than zero.

Table VIII. Teacher-Level Model Fit Statistics

Fit Index	MC – 1 Factor 1 Level	RC – 1 Factor 1 Level	OC – 1 Factor 1 Level	CC - 2 Hierarchical Factors 1 Level	CC – 3 Factors 1 Level	CC – 1 Factor 1 Level
$\chi 2$ (df)	5.08 (3)	3.73 (2)	2.54 (2)	823.29* (21)	177.99* (21)	159.94* (22)
CFI	.997	.997	.998	.000	.798	.823
TLI	.991	.996	.997	.640	.923	.936
RMSEA	.038	.044	.024	.284	.126	.115

Note: CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual; BIC Bayesian Information Criterion.
Note. * denotes significance at $p < .05$.
Note. CC = Collaborative Capacity (i.e., model included all items)

A single factor model representing all eleven CCF items was then tested at the individual-level. The chi-square value for this model indicated a significant lack of fit ($\chi 2 = 159.94$, $p < .05$), and the remaining indicators were also unsatisfactory. The CFI of .82 and TLI of .94 were below the .95 cutoff, and the RMSEA of .12 was above the recommended maximum of .08. Next, a more complex three factor CCF model was tested at the individual-level. This model displayed slightly worse fit statistics than the single factor CCF model and did not meet any of the cutoff values suggested in previous literature ($\chi 2 = 177.99$, $p < .05$; CFI = .80; TLI = .92, RMSEA = .13). Finally, based on previous research (Brown et al., 2012), a second order construct representing overall coalition functioning was added to the three factor model to account for the strong relationship between the latent factors. This hierarchical model had the least acceptable fit statistics ($\chi 2 = 829.29$, $p < .05$; CFI = .00; TLI = .64, RMSEA = .28), indicating that a significant amount of shared variance across the three CCF factors at the

individual-level was not explained by a broader construct representing overall coalition functioning.

School-Level Findings

To begin, I calculated Intra Class Correlations (ICC) to determine the proportion of variance that was attributed to between-group differences for each item. The average ICC across all 11 items was .08 and the individual values ranged from .04 (MC_Item 3) to .17 (RC_Item 4) (see Table VI). As there was sufficient between-group variance across all of the items, I then tested six increasingly complex multi-level models that accounted for the nested structure of the included survey data. Model 6, comprised of a three factor structure at the teacher-level and a single summative factor structure at the school-level, displayed the best fit statistics overall. However, it should be noted that Model 5 (comprised of an identical three factor structure at each measurement level), also displayed adequate fit statistics and was leveraged to test a number of the research questions included in the present study. The statistical outputs for Models 1 through 6 are described below, as well as findings from supplemental analyses I conducted to further examine the validity and reliability of the CCF.

Models 1, 2, and 3 included a single factor at each measurement level representing an individual CCF component (i.e., Member, Relational, and Organizational Capacity) and their respective items. Results indicated that the multi-level models for each CCF scale displayed better fit statistics than their single-level counterparts (see Table IX). Specifically, Models 1, 2, and 3 each had a non-significant chi-square test, slightly larger CFI and TLI fit statistics, and smaller RMSEA values than the corresponding single-level models for the same CCF component. As opposed to the single-level models where Organizational Capacity displayed the

best fit statistics overall, Model 2, representing Relational Capacity was the best fitting multi-level model (CFI & TLI = 1.00; RMSEA = .003).

Table IX. School-Level Model Fit Statistics

Fit Index	MC – 1 Factor 2 Levels	RC – 1 Factor 2 Levels	OC – 1 Factor 2 Levels	CC - 1 Factor 2 Levels	Model 5	Model 6
$\chi 2$ (df)	9.54 (4)	2.86 (3)	4.83 (4)	84.68* (11)	66.08* (19)	63.79* (19)
CFI	.993	1.00	.998	.873	.911	.916
TLI	.980	1.00	.994	.931	.950	.951
RMSEA	.054	.003	.021	.120	.073	.071

Note: CFI = Comparitive Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation; BIC Bayesian Information Criterion.
Note. * denotes significance at $p < .05$.
Note. CC = Collaborative Capacity (i.e., model included all items)

Model 4 was comprised of a single factor (that included all eleven items) and represented a summative construct of overall SCC functioning at the individual- and school-level. The fit statistics for Model 4 were stronger than the corresponding single-level model, however, they were still found to be inadequate when compared to the recognized statistical thresholds in the published literature. Specifically, the chi-square value indicated a significant lack of fit ($\chi 2 = 84.68$, $p < .05$) and the CFI of .87 and TLI of .93 were below the .95 cutoff, and the RMSEA of .12 was above the recommended maximum of .08.

Next, I tested Model 5, a more complex hierarchical model that included an identical three factor structure at the individual- and school-level, with each factor representing one of the CCF scales (see Figure 2). In this case, not only did the multi-level model display better fit statistics overall than its single level counterpart, but two out of the four indices met the recommended criteria for a well-fitting factor structure. While the chi-square statistic indicated a significant lack of fit ($\chi 2$ = 66.08, $p < .05$), and the CFI value (.91) fell below the recommended cutoff of .95, the TLI (.95) met the suggested cutoff value, and the RMSEA statistic (.07) was just beneath the maximum recommended level (.08).

The last and most complex multi-level model I tested was a combination of the individual-level factor structure from Model 5, and the school-level factor structure from Model 4 (see Figure 3). Overall, Model 6 displayed slightly better fit statistics than Model 5, with a 4% decrease in the Chi-Square value ($\chi 2$ = 63.79, $p < .05$), .05 increase in CFI (.916), .001 increase in TLI (.951), and a .02 decrease in RMSEA.

Based on the statistical output from Model 5 it was possible to calculate an ICC for each latent factor, and then the internal consistency or reliability of each factor when aggregated at the school-level. Member Capacity had the greatest amount of between-school variability (ICC = .98), followed by Relational Capacity (ICC = .94), and Organizational Capacity (ICC = .89). Next, factor-level reliability coefficients were calculated by plugging the ICC values into the Spearman-Brown formula, [k(ICC)] / [(k-1)(ICC)+ 1], where k is the average number of respondents per school (Dedrick & Greenbaum, 2010). Based on these calculations, the reliability coefficients for each factor were as follows: Member Capacity = .54, Relational Capacity = .53, and Organizational Capacity = .56.

To supplement these findings, I also assessed composite reliability, an alternative measure of internal consistency for the overall model. Composite reliability is calculated based on the following formula: $[(\sum(L_i \ldots L_k)*2)]/[(\sum(L_i \ldots L_k)*2)+(\sum(Var(E_i) \ldots Var(E_k))]$ where $L_i \ldots L_k$ represents the standardized factor loadings for each item and $Var(E_i) \ldots Var(E_k)$ represents the error variance associated with each item (Fornell & Larcker, 1981). Based on this formula, the composite reliability score for the entire measure was .79, exceeding the minimum cut-off value of .60 recommended in the literature (Hoyle, 2012).

The statistical output from Model 5 also allowed for the examination of parallel factor loadings and inter-factor correlations at the individual- and school-level (see Tables X, XI, & XII). At the individual-level, all eleven items were positively and significantly related to their underlying factor, and eight of the loading coefficients were greater than or equal to .70. Similarly, at the school-level, nine of the eleven items were positively and significantly related to their underlying factor, and eight of those loading coefficients were greater than or equal to .70. At the individual-level, the three inter-factor correlations were each positive and significantly different than zero ($p < .01$), and all exceeded the maximum threshold ($r < .70$) to be considered empirically distinct. The individual-level inter-factor correlations ranged from $r = .74$ (Organizational and Member Capacity) to $r = .93$ (Organizational and Relational Capacity). At the school-level, the inter-factor correlations were all smaller than the corresponding individual-level values, but remained positive and significantly different than zero ($p < .01$). One of the inter-factor correlations, between Organizational and Member Capacity ($r = .64$), was below the maximum threshold to be considered empirically unique. The other two inter-factor correlations, Member and Relational Capacity ($r = .74$) and Organizational and Relational Capacity ($r = .89$) both exceeded the maximum cutoff-value and could not be considered empirically distinct.

Table X. Member Capacity: Teacher- & School-Level Factor Loadings

			Model 5		Model 6	
Item	CCF Element	Item Content	Level 1	Level 2	Level 1	Level 2
MC_Item2	Core Skills & Knowledge	The Resource Coordinator: • Makes it possible for students to have positive school experiences • Reduce barriers to learning in the school • Is considered a member of the school community	.72*	.29	.72*	.17
MC_Item3	Core Skills & Knowledge	Teachers and staff at your school: • Promote community school activities to students • Promote community school activities to parents • Contribute ideas for improving community schooling	.74*	1.57*	.74*	1.21*
MC_Item4	Core Attitudes & Motivation	Teachers and staff at your school: • View the goals of the community school as consistent with the goals of the school as a whole • Demonstrate or communicate pride in the community schooling aspect of the school.	.74*	1.35*	.74*	.98*
MC_Item5	Coalition Builds Member Capacity	During the current year how many of the following professional development events did you attend: • PD focused on the development or delivery of programs or services • PD focused specifically on the community school model or on the delivery of programs and services within a community school setting.	.42*	-.17	.42*	-.24

Note. * denotes significance at $p < .05$.
Note. Level 1 = Teacher-Level; Level 2 = School-Level

Table XI. Relational Capacity: Teacher- & School-Level Factor Loadings

			Model 5		Model 6	
Item	CCF Element	Item Content	Level 1	Level 2	Level 1	Level 2
RC_Item1	Values Diversity	How much influence do the following stakeholders have about how to achieve school goals: • Parents • Community Members (Other than parents)	.65*	.68*	.65*	.70*
RC_Item2	Develops a Shared Vision	School staff members share a common vision for promoting student success.	.70*	.56*	.70*	.57**
RC_Item4	Promotes Power Sharing	Decision-making at the school is shared among staff members.	.87*	.73*	.87*	.74*
RC_Item5	Develops Positive External Relationships	The school encourages input from: • Parents • Community members (Other than parents)	.76*	.87*	.76*	.90*

Note. * denotes significance at $p < .05$.
Note. Level 1 = Teacher-Level; Level 2 = School-Level

Table XII. Organizational Capacity: Teacher- & School-Level Factor Loadings

			Model 5		Model 6	
Item	CCF Element	Item Content	Level 1	Level 2	Level 1	Level 2
OC_Item2	Continuous Improvement Orientation	How often have you discussed strategies for addressing the needs of specific students or families with: • Other teachers • The principal • An assistant principal • A school counselor • The Resource Coordinator • Community school activity leaders who are not also school-day teachers	.43*	.75*	.43*	.75*
OC_Item3	Effective Communication	There is an effective flow of information between the school and: • School staff • Parents • Community members (other than parents)	.83*	1.01*	.83*	.99*
OC_Item4	Sufficient Resources	There is adequate time for the planning and organization of instructional activities in the school.	.80*	.92*	.80*	.91*

Note. * denotes significance at $p < .05$.
Note. Level 1 = Teacher-Level; Level 2 = School-Level

Finally, using the statistical output from Model 5 and 6, I examined the relationship between each CCF factor and teachers' perceptions of the percentage of students that have benefited from participation in SCC related programming. Using the factor structure from Model 5, results indicated that all three school-level CCF factors were positive and significantly correlated teachers' perceptions of SCC success ($p < .01$). The correlations ranged from $r = .43$ for Relational Capacity, $r = .52$ for Relational Capacity, and $r = .58$ for Organizational Capacity. Using the factor structure from Model 6, the summative, single factor of coalition functioning at the school level displayed the strongest correlation with stakeholders' overall perceptions of SCC success ($r = .62$).

Discussion

The primary goal of study of this study was to provide initial empirical support for the use of the CCF to implement and evaluate SCCs. Construct validity for the CCF was partially established through: (a) robust factor loadings for over 90% of the included items, (b) multiple statistical indices that exceeded recommended thresholds for strong model fit, and (c) moderate inter-factor correlations at the student- and school-level, providing initial evidence that the three CCF components (Member, Relational, and Organizational Capacity), may be both empirically and conceptually unique. Convergent validity was determined through positive and significantly greater than zero inter-factor correlations, as well as moderate to strong correlations between each CCF factor and stakeholders' perceptions of SCC effectiveness. The internal consistency of the CCF was partially established through a satisfactory reliability coefficient representing the overall framework. Each of the present study's six research questions is listed below, followed by a summary of findings, a rationale for the confirmation or disproval of the related hypotheses, and a discussion of implications for subsequent SCC research or practice.

Is there sufficient evidence to execute and recommended a multi-level approach to the empirical study of School-Community Collaborations? Determining the amount of variability in stakeholder's perceptions of Collaborative Capacity that is within- and-between schools is a vital first step in conducting a multi-level analysis. If there is not a sufficient amount of between-school differences in perceptions of Collaborative Capacity, multi-level analysis is not warranted. The hypothesis that each of the included items would exceed the recommended Intra-Class Correlation cut-off value of .05 to conduct multi-level analysis was partially supported. Specifically, eight of the eleven items had an ICC greater than .05, and the remaining three items fell just below that threshold, displaying ICCs of .04. All three of the items with an ICC below

.05 came from the Member Capacity scale, which is not surprising given that the items in the Member Capacity scale are more strongly associated with stakeholder-level characteristics (e.g., "The Resource Coordinator is considered a member of the school community") than those at the school-level (e.g., "Decision making at the school is shared among staff members). As a result, responses to these items are likely to vary more strongly across individuals than across schools.

Additionally, as predicted, all models tested in this study that included both an individual- and school-level factor structure, displayed better fit statistics than any of the corresponding single-level models. That was true of the more basic single factor models, as well as the more complex multi-factor models. Collectively, these findings indicate that the continued use of traditional analysis approaches that only examine coalition functioning data at the individual- or school-level, but not both, are vulnerable to erroneous conclusions and missed opportunities for deeper learning.

Is the individual-level factor structure of the Collaborative Capacity Framework similar to or different from the factor structure at the school-level? In addition to accounting for the interdependence in responses from stakeholders working in the same school, a multi-level analysis of coalition functioning can also test for different factor structures at the individual- and group-level. If the factor structures at the individual- and school-level are in fact different, "using an individual-level measurement model to represent group-level factors can produce inaccurate relationships with outcome variables in subsequent analyses and other estimation errors" (Dedrick & Greenbaum, 2010, p. 10). Overall, results supported the hypothesis that best fitting measurement model tested would include a different factor structure at each level. Specifically, Model 6, which was comprised of a three factor structure at the individual-level and a single factor at the group-level, displayed the best fit statistics overall and exceeded two of the four

recognized cutoffs on model fit indices (i.e., TLI, RMSEA). However, it should be noted that Model 5, which included an identical three factor structure at both measurement levels, also displayed adequate fit statistics, just not as strong as the Model 6 output. The equivocal nature of these findings at the group-level, in which a single or multi-factor model are both plausible, are in line with previous multi-level assessments of coalition functioning (Barile et al., 2012; Brown et al., 2012; Dedrick & Greenbaum, 2010). Furthermore, each model type has unique strengths and weaknesses for use in research and practice.

A single school-level factor provides a parsimonious and summative assessment of coalition functioning based on all of the individual perceptions within a school. Practitioners can leverage this information to develop a spectrum of SCC quality, identifying schools that need additional support and those that may provide a source of best practices. Alternatively, a multi-factor model at the group-level allows for a more detailed analysis of the differences in coalition functioning within and across each school. This information can be used to provide further differentiated support to school and community stakeholders, as well as inform subsequent analysis of how those unique factors are related to a variety of outcomes. Ultimately, the decision of which factor structure to use at the group-level is only viable when using a multi-level approach and should be informed on a case-by-case basis according to the model-fit statistics, as well as the practical concerns about how the analysis will be used to support school and community stakeholders engaged in collaborative efforts. Ideally, if the school-level single factor and multi-factor model display adequate fit statistics, they should both be leveraged to evaluate and support the implementation of SCCs.

Are the three factors that comprise the Collaborative Capacity Framework empirically distinct from one another? Findings related to this research question are one of primary

motivations for the present study as the identification of empirically distinct constructs of coalition functioning has both practical and scientific significance. First, it can facilitate the provision of differentiated feedback to school and community stakeholders regarding their existing capacity in specific aspects of coalition functioning. Second, findings related to this research question can facilitate empirical inquiries into the relationship between unique aspects of coalition functioning and subsequent school and community outcomes.

Results did not support the hypothesis that all three CCF factors would be positively and significantly correlated with one another at both levels and still be considered empirically distinct. The school-level inter-factor correlation between Organizational Capacity and Member Capacity was the only estimate that fell below the maximum threshold to be considered empirically unique (< .70). However, two of the other inter-factor correlations just exceeded the maximum cut-off value to be considered empirically distinct by less than four tenths of a point. It is possible that leveraging a more comprehensive measurement development process entailing the creation of items align specifically with the content of the CCF would result in lower inter-factor correlations, and therefore provide stronger evidence that the components are empirically distinct.

The range of positive and significant correlations found between factors of coalition functioning in this study are in line with results reported in similar published research (Barile et al., 2012; Brown et al., 2012; Dedrick & Greenbaum, 2008; Marek et al., 2014). Additionally, due to the significant conceptual overlap that exists between constructs of coalition functioning, the strong inter-factor correlations found in this study provide support for convergent validity of the CFF. Marek et al. (2014) justifies these interrelationships using an analogy comparing collaborative functioning to the interlocking gears of a machine, “The more that the gears spin in

the appropriate direction, the faster the wheel of collaboration may go. If one or more of these gears are malfunctioning momentum may be impeded, slowed down, or stopped" (p. 5).

Descriptive statistics from the schools sampled in the present study provide further support for Marek's interlocking gears analogy. Specifically, no school that was more than .5 standard deviations below the mean in one CCF component was more than .5 standard deviations above the mean on the two remaining components. In other words, it is highly unlikely that a coalition experiencing a substantial lack of capacity in one CCF component would be able to develop and sustain the SCC-related structures and processes highlighted in the other components. For example, if a SCC does not have sufficient Organizational Capacity (e.g., effective leadership) it is likely there will be resulting negative consequences for the Relational Capacity (e.g., promoting power sharing) and Member Capacity (e.g., core attitudes and motivation) present within the coalition.

It is also important to note that despite the lack of conclusive evidence suggesting that the components of the CCF are empirically distinct, the findings from this study still have practical significance for SCC practitioners. As Brown (2012) argued, "coalitions that receive feedback on the quality of functioning in various domains may be able to generate concrete actions to address identified weaknesses that are critical to success; even if there is empirical overlap on some measures with other important coalition functioning constructs" (p. 489). For example, even if Member Capacity does not fully meet the statistical qualifications to be considered empirically distinct, providing differentiated technical support to coalitions with weaknesses in this area (or other CCF components) should have positive implications for SCC implementation. Similarly, Marek et al. (2014) commented that, "regardless of the conceptual overlap that may exist within the model, we believe each factor is theoretically relevant to understanding and strengthening

collaboration, and therefore we have retained each factor" (p. 5). Accordingly, despite its slightly inferior fit statistics and significant inter-factor correlations, the quoted rationales both implicitly support the use of Model 5 from the present study. Unlike Model 6, which includes a less nuanced summative indicator of coalition functioning, Model 5 allows for an examination of each CCF component at the school-level for support and evaluation purposes.

Do the three factors that comprise the Collaborative Capacity Framework display adequate reliability? The hypothesis that the internal consistency of each factor would prove to be satisfactory was not supported, as none of the corresponding alpha coefficients exceeded the suggested minimum cut-off value of .60 (Hoyle, 2012). However, each alpha coefficient was relatively close to that threshold (i.e., Relational Capacity =.53; Member Capacity =.54; Organizational Capacity = .56) and the composite reliability for the overall measurement structure was .79, exceeding the recommended cut-off value.

The modest measures of internal consistency found for each CCF factor were most likely caused by the small number of teachers (N = 11) representing each school, just barely exceeding the sample size that is recommended in the published literature for conducting (Hoogland & Boomsma, 1998; Meuleman, Davidov, & Billiet, 2009). In a study similar to the present research, Dedrick and Greenbaum (2008) noted that "researchers studying interagency collaboration who use either a single or a few informants within an agency will produce scores with very low reliabilities at the agency level" (p. 11). This is primarily due to the fact that stakeholders' perceptions of SCC functioning are likely to vary strongly across individuals, as was the case in the present study. Consequently, without a large sample size of survey respondents in each school, it is difficult to establish satisfactory measures of internal consistency for an assessment of SCC functioning. Subsequent research should attempt to

sample at least 20 respondents per school when assessing SCC functioning, as both Barile et al. (2012) and Brown et al. (2012) exceeded this threshold and reported stronger alpha coefficients than the present study.

What is the strength and direction of the relationship between each item and the latent factors they are hypothesized to represent? Multi-level Confirmatory Factor Analysis facilitates an examination of factor loadings at the individual- and school-level. This approach can fill an important gap in the literature, as it represents a more nuanced process for testing the validity of each item included in a framework or assessment of SCC functioning. Reporting multi-level factor loadings can also facilitate differentiated support for school and community stakeholders by identifying which items are best suited to inform interventions with specific individuals as opposed to the whole coalition. Findings related to this research question can serve as a resource to future measurement development studies, providing a bank of potential items that have demonstrated the ability to sufficiently represent critical aspects of SCC functioning at the individual- and school-level. Additionally, the following CCF elements that each of the included items was hypothesized to represent, now have strong empirical support for their inclusion in a framework of SCC functioning: (a) coalition members' skills and knowledge, (b) coalition members' attitudes and motivations, (c) building coalition members' SCC-related capacity, (d) values diversity, (e) develops a shared vision, (f) promotes power sharing, (g) develops positive external relationships, (h) continuous improvement orientation, (i) effective communication, and (j) sufficient resources.

Based on the output from Model 5, the hypothesis that each item would be positive and significantly associated to their respective factors, as well as exceed the recommended minimum loading size of .70, was partially supported. Of the twenty two possible factor loadings, sixteen

met the required threshold, and four of the remaining six coefficients exceeded .40, the minimum cut-off value used by Marek et al., (2014) in a similar analysis. The two loadings that fell beneath the .40 threshold both came from the Member Capacity scale and were at the school-level (MC_Item1 & MC_Item5). However, neither of these two items was removed from the model given that their corresponding teacher-level factor loadings exceeded the .40 threshold.

Relational Capacity was the only factor in which none of the item loadings displayed a sizable difference between the individual- and school-level. Conceptually, this finding makes sense, as the level of Relational Capacity present in a SCC is likely to manifest itself equitably in the relationships between individual staff members and at the organizational-level between schools and community-based organizations. For example, the degree to which the SCC promotes power sharing (an element of Relational Capacity) would be perceived uniquely at the individual-level by stakeholders in their ability to meaningful contribute to the SCC, as well as at the coalition-level through the amount of shared decision making observed between schools and community-based organizations on key issues. Therefore, the amount or quality of Relational Capacity in a SCC is likely to have a similar influence on perceptions of coalition functioning at both the individual- and school-level.

Conversely, group-level factor loadings for Organizational Capacity were consistently larger than the corresponding coefficients at the individual-level. Again, this finding was expected given that the amount or quality of Organizational Capacity in a SCC is most likely to influence item responses at the coalition-level. For example, stakeholders' perception of the degree to which there is a continuous improvement orientation present in the SCC, or there are sufficient resources to implement programming, are more likely to vary significantly across coalitions rather than within coalitions. Accordingly, if an assessment of SCC functioning

indicates that Organizational Capacity is a weakness; the most impactful interventions to improve those perceptions would be at the group-level, not with individual stakeholders.

One Organizational Capacity item is of particular note given that it was not represented in the original CCF, but was included in this study based on my previous review of the SCC literature. Specifically, the item asked teachers if there was sufficient time made available for the detailed planning of instructional activities. Both the individual- and school-level factor loadings for this item exceeded the recommended threshold of .70. This finding, combined with the fact that a third of the studies in my previous review cited time as a necessary resource for quality SCC implementation is further evidence that this construct should be added be added to the CCF as a sub-element of *sufficient resources*, within the component of Organizational Capacity.

Finally, the factor loadings for Member Capacity did not display a clear trend, as two of the four loadings were significantly higher at the school-level, and the other two were greater at the individual-level. Although it was hypothesized that all four loadings would be larger at the individual-level, a closer examination of item content provides a rationale for these findings. Specifically, the first Member Capacity item with a larger factor loading at the individual-level focused on how frequently the respondent attended SCC-related professional development sessions. In this case, not only was the school-level factor loading smaller than at the individual-level, it was the only negative coefficient found in the analysis (-.17). Given that the professional development sessions in question were provided uniformly at the district-level, and in many cases not required, the absence of a coalition-level influence on this item is justified.

The second item focused on stakeholders' perception of the effectiveness of the resource coordinator (RC), a community stakeholder working full-time in the school to facilitate SCC implementation. In this case, the school-level factor loading was positive but it was not

significantly greater than zero using a 95% confidence level, and much smaller than the individual-level coefficient. The presence of a modest coalition-level influence on this item is viable given that there is likely to be some shared consensus about the quality of the RC across school staff. However, the majority of the variance in stakeholders' perception of the RC is largely determined by their personal interactions and experiences with that person. Consequently, efforts to support practitioners to improve Member Capacity based on low responses to this or a similar item should be focused on the ability of the RC to meaningfully engage with individual teachers, actively working to demonstrate the value of the SCC to student success. In turn, those efforts should have a positive effect on the general perception of the RC's impact at the school-level.

In contrast, the two Member Capacity items with larger factor loadings at the coalition-level were both focused on perceptions of the SCC-related attitudes and actions of all stakeholders in the school, not of one person such as the RC. One of these items asked about how frequently all stakeholders promoted SCC-related programming to students and parents, and the other item focused on the level of pride school staff displayed regarding their participation in the SCC itself. Based on these findings, it appears that the reference point for a specific item can dramatically impact the related factor loadings at each measurement level. Therefore, researchers should be conscious of whether each item in a survey asks respondents to reflect on their experiences with an individual person (e.g., the Principal) or process (e.g., attending professional development), as opposed to their perceptions of all stakeholders (i.e., all teachers) or an organization-level process (e.g., effective communication). Developing a measure that consists of a mix of these two item types should provide a more comprehensive and accurate assessment

of SCC functioning, but also necessitates the use of a multi-level analysis approach that can account for the subsequent differences in factor loadings at each measurement level.

What is the relationship between the three CCF factors and teachers' perceptions of SCC success? In the absence of the ability to examine the relationship between CCF factors and school-level outcomes (e.g., test scores, behavior, and attendance), assessing their correlation with a composite measure of SCC success can also support the convergent validity of the framework. This type of analysis serves as strong test of convergent validity given that previous research has established that, "perceptions of coalition impact or success have been shown to affect retention of members as well as the actual coalition outputs" (Brown et al., 2012, p. 487). Additionally, previous studies have used a similar approach to establish convergent validity for the coalition functioning framework in question (Brown eat al., 2012; Marek et al., 2014).

In the present study, stakeholders' perceptions of SCC success were assessed through the following item: "Based on your observations during the current academic year, what percentage of students (0%, 25%, 50%, 75%, or 100%) participating in community school programming have benefited from their participation?" As predicted, all correlations between CCF factors and teachers' perceptions of SCC success at the individual- and school-level were positive and significantly different than zero. The related hypothesis that Organizational Capacity would display a stronger correlation with perceptions of SCC functioning than any other individual CCF factor was also fully supported. This finding suggests that building Collaborative Capacity for group-level strategies or processes, such as a continuous improvement orientation, effective communication, and securing sufficient resources, should be a primary focus for SCC researchers and practitioners. This is a particularly important finding given that my previous review established that SCCs most often fail due to a lack of focus or support in developing

Organizational Capacity. It should be noted that the validity of these findings is compromised to certain degree due to the fact that the assessment of SCC functioning and SCC success were measured from the same informants (i.e., teachers). Due to their complex nature, future studies should of SCCs should assess implementation and outcomes through the use of multiple stakeholders and sources in order to ensure the validity of the data and subsequent analysis.

Notably, using the factor structure from Model 6 that included a single, summative measure of coalition functioning at the school-level displayed the largest overall correlation with perceived SCC effectiveness at $r = .62$. This finding provides initial evidence that when assessing the relationship between SCC functioning and the intended outcomes (e.g., improved test scores); researchers should ensure the use of a composite score at the school-level as opposed to just examining correlations with outcomes for each individual factor.

Limitations and Implications for Future Research and Practice

For a number of aforementioned reasons, this research represents a significant advance for the SCC literature; however, there are six limitations that should be highlighted to inform subsequent studies or evaluations. First, the present study used survey items that were not originally developed based on the CCF, but instead to measure the implementation of a specific community schools model. A similar methodology was used in previous research (Barile et al., 2012; Brown et al., 2012) and was appropriate given that the primary goal of the present study was only to provide initial empirical support for the use of the SCC to develop and evaluate SCCs. However, subsequent research should build on this study to conduct a more robust survey development process that facilitates the creation and testing of items specific to the components and elements of the CCF. To facilitate these efforts, I have created a number of draft survey items that researchers can borrow from in order to develop and test a more formal measure of

SCC functioning based on the CCF (see Table XIII & Table XIV). The content of the draft items was informed directly by the results of my previous review of the SCC literature (Zander, 2012) (see Appendix B), as well as the findings from this study.

Table XIII. Draft Collaborative Capacity Framework Survey Items for Member Capacity and Relational Capacity

CCF Component	CCF Element	CCF Sub-Element	Zander (2012)	Zander (2015)	Draft CCF Survey Item
Member Capacity	Core Skills and Knowledge	Ability to work collaboratively with others	X	X	I can effectively collaborate with community stakeholders to support student success
	Core Skills and Knowledge	Knowledgeable about norms and perspective of others	X		I have an adequate understanding of the norms and perspectives of community stakeholders
	Core Attitudes and Motivation	Views others as legitimate, capable, and experienced	X	X	I believe community stakeholders are legitimate, capable, and experienced
	Core Attitudes and Motivation	Believes collaboration will be productive, worthwhile, achieve goals	X	X	I believe collaborating with the community is worthwhile and will help to achieve school goals

	Coalition Builds Member Capacity	Provides technical support in needed areas	X	X	I have received the necessary training and support to effectively implement a formal coalition with community stakeholders
Relational Capacity	Values Diversity	Multiple perspectives, unique interests, and competing desires and goals coexist and are incorporated into the work plan as much as possible	X	X	School staff incorporate community stakeholders' feedback regarding how to achieve school goals
	Develops a Shared Vision	Shared solutions	X	X	School staff and community stakeholders share a common vision for how to achieve school goals
	Promotes Power Sharing	Participatory decision-making processes and shared power	X	X	Decision making at the school is shared among staff members and community stakeholders
	Develops Positive External Relationships	Engages community residents in planning and implementation processes	X	X	School staff actively engage community stakeholders in the planning and implementation of programming for students
	Develops a Positive Working Climate	Open and Honest	X		School staff and community stakeholders communicate in an open and honest fashion

Note. An "X" under Zander (2012) indicates findings from my previous review support the inclusion of the related draft CCF survey item.
Note. An "X" under Zander (2015) indicates findings from the present study support the inclusion of the related draft CCF survey item.

Table XIV. Draft Collaborative Capacity Framework Survey Items for Organizational Capacity and Programmatic Capacity

CCF Component	CCF Element	CCF Sub-Element	Zander (2012)	Zander (2015)	Draft CCF Survey Item
Organizational Capacity	Effective Leadership	Develops positive internal and external relations	X		The principal supports and contributes to a positive and productive relationship with community stakeholders
	Effective Leadership	Visionary	X		The principal has a vision for overall school improvement that includes a formal coalition with community stakeholders
	Continuous Improvement Orientation	Responds to feedback and shifting conditions	X	X	School staff and community stakeholders monitor the ongoing needs of students and adjust their support accordingly
	Effective	Timely and	X	X	There is timely and frequent

	Communication	frequent information sharing, problem discussion, and resolution			information sharing, problem discussion, and resolution between school staff and community stakeholders
	Formalized Procedures	Work group/committee structure	X		Meetings between school staff and community stakeholders are well attended and productive
	Sufficient Resources	Financial resources to implement new programs and operate the coalition	X		There are sufficient financial resources to implement programs and operate the coalition
	Sufficient Resources	Time	X	X	There is sufficient time for planning and participating in the coalition with community stakeholders
Programmatic Capacity	Clear, Focused, Programmatic Objectives	N/A	X		There are clear, focused objectives for each program/resource provided to students
	Unique and Innovative	Program fills unmet community needs	X		Whenever possible, programming provided to students satisfies a previously unmet need
	Ecologically Valid	Program culturally competent in design	X		Student programming is culturally competent in design

Note. An "X" under Zander (2012) indicates findings from my previous review support the inclusion of the related draft CCF survey item.
Note. An "X" under Zander (2015) indicates findings from the present study support the inclusion of the related draft CCF survey item.

Research that develops items specific to the CCF would also solve for the second limitation of the present study, the lack of survey data representing the fourth CCF Component, Programmatic Capacity. Generally speaking, Programmatic Capacity refers to the collective ability of the SCC to identify and implement of services that have a tangible impact on the school or community (Foster-Fishman et al., 2001). Programmatic Capacity is reflected in coalition's ability to develop resources that are directly grounded in the needs of their stakeholders and to deliver them in a high quality manner (Zander, 2012). While the other components of the CCF are intentionally broad in order to apply to a wider variety of coalition

types, items assessing Programmatic Capacity should be highly specific to the types of services or resources being offered. Subsequent studies should assess Programmatic Capacity through perception based survey items completed by stakeholders and accompanied by the direct measurement of program effectiveness through a tool like the Youth Program Quality Assessment (Smith, 2005).

A third limitation of the present study was the sole reliance on teachers' self-reported perceptions of SCC functioning. Although it was strength of the present study to highlight the important role that teachers play in SCC success, by surveying other stakeholders such as representatives from community-based organizations, parents, or students, researchers can better triangulate data to accurately measure Collaborative Capacity. This approach would also allow practitioners to assess the degree to which perceptions vary by stakeholder type to inform targeted implementation support. Furthermore, assessing CCF Components through the perceptions of trained observers or technical assistance providers would alleviate some of the concerns around the social desirability biases inherent in self-report data (Brown et al., 2012).

Relatedly, the fourth limitation of this study was the singular focus on schools that were implementing a specific community school model in the same geographic location. Sampling from schools implementing other reform efforts (e.g., Full Service Schools) that focus on developing SCCs across a broader range of settings (i.e., urban versus rural), would directly increase the internal validity of the study. For instance, we do not know if the moderate to strong psychometric properties reported on the CCF in this study would hold true in other settings with different types of SCC models. A broader sampling approach that examines if the CCF is a valid framework in a wide variety of settings would also increase the external validity of the framework and the generalizability of related research.

Collecting data from multiple types of SCC models and a variety of stakeholders would also help to resolve the fifth limitation of the present study, relatively small sample sizes at the individual- and school level. Although the number of teachers and schools sampled for this study were sufficient to employ a multi-level confirmatory factor analysis, they barely met the minimum sample size thresholds suggested in the literature (Hoogland & Boomsma, 1998; Meuleman, Davidov, & Billiet, 2009). In particular, increasing the number of schools sampled in future research would provide more statistical power to identify empirically distinct factors of coalition functioning at the individual- and group-level. Also, as mentioned previously, increasing the average number of respondents per school would likely result in more satisfactory reliability coefficients for each CCF component.

The sixth and final limitation of the present study was the lack of analysis focused on student outcomes. Although implementing SCCs may have a number of other hypothesized benefits such as improving school climate or parent engagement, ultimately, continued financial and political support for this reform approach will necessitate strong empirical evidence of its impact on student achievement (Sanders, 2006). The present study represents an important first step in this process by demonstrating initial empirical support for the use of the CCF to evaluate SCCs. However, it is vital for subsequent research to not only more accurately measure SCC functioning using the CCF, but to then examine the relationship between SCC functioning and a variety of student outcomes.

Brown et al. (2012) recommended a longitudinal approach that is sensitive to coalition development and change over time as the preferred methodology to examine SCC impact on stakeholder outcomes. This avenue of research would provide: (a) further support for the convergent validity for the CCF, (b) knowledge around which CCF components and elements are

most strongly related to student outcomes, thereby informing support to stakeholders, and (c) strong evidence that implementing a SCC model and building the Collaborative Capacity of school and community stakeholders can positively influence student outcomes.

Conclusion

The CCF was originally developed through an iterative process by Foster-Fishman et al. (2001) to capture the core competencies and processes necessary to implement community coalitions of all kinds. My previous review of the SCC literature established qualitatively that the CCF can also be applied effectively to coalitions taking place specifically within in a school setting (Zander, 2012). The present study collected and analyzed survey data from teachers implementing a community school model in an attempt to operationalize the CCF and quantitatively assess the reliability and validity of the framework's content and structure. Collectively, the breadth and rigor of this body of work provides a strong foundation that future research can build on to further advance the science and practice of SCCs.

However, due to the inconclusive nature of the quantitative findings and the previously mentioned methodological limitations of the present study, additional research is needed before the CCF can be confidently shared with researchers and practitioners as a reliable and valid framework to utilize in the development or implementation of SCCs. As noted previously, the true potential of this framework cannot be fully realized until further research is conducted to develop and test a formal measure of SCC functioning that more comprehensively represents the competencies and processes described in the CCF. Once this research is complete, stakeholders attempting to create a new SCC could use the CCF as a guide or checklist to inform their planning and execution and those who have already begun implementing a SCC could apply the CCF to assess the ongoing strengths and weaknesses of their coalition.

Despite the limitations of the present study, it represents a substantial progress for the SCC literature as the first multi-level assessment of a framework that identifies and classifies the core competencies and processes that facilitate effective collaboration between school and community stakeholders. This study is particularly timely given the lack of similar research available and the amount of recent financial and political support being funneled towards SCCs. By leveraging a theoretically grounded and empirically supported framework like the CCF, researchers and practitioners can begin to harness the transformative power of school reform efforts that focus on building and sustaining meaningful collaborations with the surrounding community.

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APPENDICES

APPENDIX A

Please respond to each question with the following definitions in mind:

Programs and services refers to the full domain of afterschool, extracurricular, and out-of-school time activities and services being provided at your school to either students or nonstudents.

Lead Partner Agency (LPA) refers to the organization that helps oversee community school programming in the school. This phrase refers organization as a whole, and not to any particular individual.

Resource Coordinator(s) refers to the individual(s) employed by the Lead Partner Agency who coordinate community school programs in the school.

To view the names of your school's Lead Partner Agency and Resource Coordinator(s), please click here:
School-LPA-RClist.pdf

Q1. Please rate the extent to which the following statements are true of your school. *(Select the best option for each row.)*

		Not at all (1)	To a minimal extent (2)	To a moderate extent (3)	To a great extent (4)	Not sure (5)
a.	The principal is enthusiastic about the idea of community schooling.	○	○	○	○	○
b.	The principal's actions contribute to a trusting relationship with the Lead Partner Agency.	○	○	○	○	○
c.	The principal wants the school to be a community hub with resources for families and other community members.	○	○	○	○	○
d.	Providing programs and services for students is part of the principal's vision for overall school improvement.	○	○	○	○	○
e.	Providing programs and services for *families* is part of the principal's vision for overall school improvement.	○	○	○	○	○
f.	The principal demonstrates or communicates to school staff that community schooling is important to her/him.	○	○	○	○	○

Q2. Based on your observations, how influential is the community school Lead Partner Agency in improving the well-being of students in this school?

- ○ a. Very influential **(1)**
- ○ b. Somewhat influential **(2)**
- ○ c. A little bit influential **(3)**
- ○ d. Not influential **(4)**
- ○ e. Not sure/not applicable **(5)**

Q3. Based on your observations, how influential is the community school Lead Partner Agency in improving the well-being of *parents and families* in this school?

- ○ a. Very influential **(1)**
- ○ b. Somewhat influential **(2)**
- ○ c. A little bit influential **(3)**
- ○ d. Not influential **(4)**
- ○ e. Not sure/not applicable **(5)**

Q4. How many Resource Coordinators work in your school?

- ○ a. One **(1) [Skip Question 6]**
- ○ b. Two **(2) [Skip Question 5]**
- ○ c. More than two **(3) [Skip Question 5]**
- ○ d. The school does not currently have a Resource Coordinator **(4) [Skip Question 5, 6, 7]**

Q5. How long has the Resource Coordinator with the most experience in your school been working at the school?

- a. Less than 1 year **(1)**
- b. 1-2 years **(2)**
- c. 3-5 years **(3)**
- d. More than 5 years **(4)**
- e. Not sure/not applicable **(5)**

Q6. How long has the Resource Coordinator with the most experience in your school been working at the school?

- a. Less than 1 year **(1)**
- b. 1-2 years **(2)**
- c. 3-5 years **(3)**
- d. More than 5 years **(4)**
- e. Not sure/not applicable **(5)**

Q7. To what extent do the following statements apply to your experiences with the community school Resource Coordinator(s) in your school? *(Select the best option for each row.)*

	The Resource Coordinator(s)...	Not at all (1)	To a minimal extent (2)	To a moderate extent (3)	To a great extent (4)	Not sure (5)
a.	...has (or have) good relationships with teachers.	○	○	○	○	○
b.	...has (or have) good relationships with students.	○	○	○	○	○
c.	...has (or have) good relationships with parents and families.	○	○	○	○	○
d.	...helps (or help) make it possible for students to have positive school experiences.	○	○	○	○	○
e.	...helps (or help) reduce barriers to learning in the school.	○	○	○	○	○
f.	...considered members of the school community.	○	○	○	○	○

Q8. Does your school currently have an advisory group or steering committee that guides community school-related decision-making?

- a. Yes **(1)**
- b. No **(2) [Skip Question 9, 10, 11]**
- c. Not sure **(3) [Skip Question 9, 10, 11]**

Q9. Is the committee an independent group, or is it part of another committee (for example, the SIPAAA committee)?

- a. Independent group **(1)**
- b. Part of another committee **(2)**
- c. Not sure **(3)**

Q10. Are you a member of the committee?

- a. Yes **(1)**
- b. No **(2) [Skip Question 11]**

Q11. Based on your observations of meetings of the committee, please rate the extent to which the following statements apply. *(Select the best option for each row.)*

		Not at all (1)	To a minimal extent (2)	To a moderate extent (3)	To a great extent (4)	Not sure (5)
a.	Members have a clear understanding of their roles and responsibilities.	○	○	○	○	○
b.	Members communicate well with each other.	○	○	○	○	○
c.	The committee comes up with creative ideas for addressing pertinent issues.	○	○	○	○	○
d.	Members tend to stay involved with the committee for a long time.	○	○	○	○	○

Q12. Based on **your observations** during the current academic year, what percentage of students participating in community school programming have benefited from their participation?

- a. Less than 25% of participants have benefited **(1)**
- b. Between 26% and 50% of participants have benefited **(2)**
- c. Between 51% and 75% of participants have benefited **(3)**
- d. More than 75% of participants have benefited **(4)**
- e. Not sure or not applicable **(5)**

Q13.

Based on your observations during the current school year, to what extent do teachers and staff at your school...		**Not at all (1)**	**To a minimal extent (2)**	**To a moderate extent (3)**	**To a great extent (4)**	**Not sure (5)**
a.	...promote community school activities to students?	○	○	○	○	○
b.	...promote community school activities to parents?	○	○	○	○	○
c.	...view the goals of the community school as consistent with the goals of the school as a whole?	○	○	○	○	○
d.	...contribute ideas for improving community schooling?	○	○	○	○	○
e.	...demonstrate or communicate pride in the community schooling aspect of the school?	○	○	○	○	○

Q14. During the current academic year, how many of the following types of professional development (PD) events have you participated in?

		None (1)	**One (2)**	**Two or three (3)**	**More than three (4)**
a.	PD events that focused on the development or delivery of programs or services	○	○	○	○
b.	PD events that focused specifically on the community school model or on the delivery of programs and services within a community school setting	○	○	○	○

Q15. During the current academic year, approximately how often have you discussed strategies for addressing the needs of specific students or families with the following? *(Select the best option for each row.)*

		Less than once a month (1)	**One or two times per month (2)**	**Once or twice a week (3)**	**Almost daily or more (4)**	**Not applicable (5)**
a.	Other teachers	○	○	○	○	○
b.	The principal	○	○	○	○	○
c.	An assistant principal	○	○	○	○	○
d.	A school counselor	○	○	○	○	○
e.	The Resource Coordinator	○	○	○	○	○
f.	Community school activity leaders who are not also school-day teachers	○	○	○	○	○

Q16. During the current academic year, have you referred any students to community school programs?

- a. Yes **(1)**
- b. No **(2)**

Q17. Is there a **standard** process in place in your school for teachers to refer students to community school programs or services?

- a. Yes **(1)**
- b. No **(2) [Skip Question 18]**
- c. Not sure **(3) [Skip Question 18]**

Q18. Please describe the standard process(es) for teachers to refer students to community school programs or services.
[Text Box]

Q19. Based on your own experience or impressions, how much **influence** does each of the following groups have over your school's decisions about how to achieve school goals?

		None (1)	A minimal amount (2)	A moderate amount (3)	A great amount (4)	Not sure (5)
a.	Principal	○	○	○	○	○
b.	Assistant principal(s)	○	○	○	○	○
c.	Teachers	○	○	○	○	○
d.	Resource Coordinator	○	○	○	○	○
e.	Students	○	○	○	○	○
f.	Parents	○	○	○	○	○
g.	Community members (other than parents)	○	○	○	○	○

Q20. Based on your experiences during the current school year, to what extent are the following statements true?

		Not at all (1)	To a minimal extent (2)	To a moderate extent (3)	To a great extent (4)	Not sure (5)
a.	You feel you are able to make significant positive changes in students' lives.	○	○	○	○	○
b.	You feel accepted by the school staff.	○	○	○	○	○
c.	You feel respected by parents.	○	○	○	○	○
d.	Caring relationships built on trust and respect exists among staff members at the school.	○	○	○	○	○
e.	Teachers in the school have meaningful relationships with their students.	○	○	○	○	○
f.	Individuals are respected for trying new ways to meet student needs in the school.	○	○	○	○	○
g.	School staff members share a common vision for promoting student success.	○	○	○	○	○
h.	School staff members have created a welcoming environment for students, parents, and the community.	○	○	○	○	○
i.	There is an effective flow of information among school staff.	○	○	○	○	○
j.	There is an effective flow of information between the school and parents.	○	○	○	○	○
k.	There is an effective flow of information between the school and community members.	○	○	○	○	○
l.	There is adequate time for the planning and organization of instructional activities in the school.	○	○	○	○	○
m.	Decision-making at the school is shared among staff members.	○	○	○	○	○
n.	The school's administration is reliable and supportive.	○	○	○	○	○
o.	School staff members work hard to build trusting relationships with parents.	○	○	○	○	○
p.	The school encourages input from parents.	○	○	○	○	○
q.	The school encourages input from the community.	○	○	○	○	○
r.	Staff members in this school have high expectations for all students.	○	○	○	○	○
s.	The principal builds consensus around a common set of values for running the school.	○	○	○	○	○
t.	The principal supports decisions that people make on their own.	○	○	○	○	○

Q21. What is your highest level of education?

- ○ a. High school or GED **(1)**
- ○ b. Some college, other classes/training not related to a degree **(2)**
- ○ c. Completed two year college degree **(3)**
- ○ d. Completed four year college degree **(4)**
- ○ e. Some graduate work **(5)**
- ○ f. Master's degree or higher **(6)**
- ○ g. Other. Please specify: [ ] **(7)**

Q22. Do you hold a teaching credential or certification?

- ○ a. Yes **(1)**
- ○ b. No **(2)**

Q23. How long have you been a teacher in your current school?
[Text Box]

Q24. How many total years have you spent teaching?
[Text Box]

Appendix B

Table 1. Percentage of Studies that cited the Sub-Elements of Member Capacity

CCF Sub-Element – Member Capacity	# Studies Total	% Total Studies
Believes collaboration will be productive, worthwhile, achieve goals	15	58%
Provides technical support in needed areas	13	50%
Organizational support and institutional backing of coalition participation	13	50%
Views others as legitimate, capable, and experienced	11	42%
Understands target community	11	42%
Knowledgeable about norms and perspectives of other members	10	38%
Holds positive attitudes about collaboration	10	38%
Effective communication	9	35%
Respects different perspectives	9	35%
Holds positive attitudes about other stakeholders	9	35%
Committed to target issues or target program	8	31%
Ability to work collaboratively with others	7	27%
Social supports to facilitate active involvement	7	27%
Committed to collaboration as an idea	7	27%
Believes benefits of collaboration will offset costs	7	27%
Believes collaboration will serve own interests	6	23%
Trusts other stakeholders	6	23%
Logistical supports to assist members in attending meetings	5	19%
Understands targeted problem or intervention	5	19%
Knowledgeable and skilled in policy, politics, and community change	5	19%
Views current systems/efforts as inadequate	5	19%
Grant writing and program planning, design, implementation, & evaluation skills	4	15%
Skilled in coalition/group development	4	15%
Helps members identify innate expertise	4	15%
Broad understanding of problem domain	4	15%
Ability to create and build effective programs	4	15%
Views self as a legitimate and capable member	3	12%
Ability to build an effective coalition infrastructure	2	8%
Recognizes innate expertise and knowledge bases	2	8%
Appreciates interdependencies	1	4%
Knowledgeable about coalition member roles/responsibilities, committee work	1	4%
Skilled in conflict resolution	0	0%
Holds positive attitudes about self	0	0%

Note. Total *N* = 26.

Table 2. Percentage of Studies that cited the Sub-Elements of Relational Capacity

CCF Sub-Element– Relational Capacity	# Studies Total	% Total Studies
Superordinate goals	17	65%
Engages community residents in planning and implementation processes	16	62%
Participatory decision-making processes and shared power	14	54%
Multiple perspectives and competing goals coexist/incorporated in the work plan	12	46%
Open and honest	12	46%
Shared solutions	9	35%
Connects with other communities and coalitions targeting similar problems	8	31%
Trusting	7	27%
Cohesive	6	23%
Individual and group differences appreciated	6	23%
Cooperative	5	19%
Common understanding of problems	4	15%
Links with organizational sectors unrepresented on coalition	4	15%
Minimizes member status differences	3	12%
Links with key community leaders & policy makers	3	12%
Effectively handles conflict	2	8%

Note. Total $N = 26$.

Table 3. Percentage of Studies that cited the Sub-Elements of Organizational Capacity

CCF Sub-Element – Organizational Capacity	# Studies Total	% Total Studies
Timely and frequent information sharing, problem discussion, and resolution	20	77%
Work group/committee structure	15	58%
Skilled staff/convener	14	54%
Financial resources to implement/sponsor programs and operate the coalition	14	54%
Responds to feedback and shifting conditions	13	50%
Develops monitoring system and adapts to evaluation information	11	42%
Develops positive internal & external relations	11	42%
Clear staff and member roles, responsibilities	11	42%
Skilled at conflict resolution and communication	8	31%
Well-developed internal operating procedures and guidelines	8	31%
Seeks input, external information/expertise	7	27%
Excellent administrator	7	27%
Detailed, focused work plan	6	23%
Effective internal communication system	5	19%
Effective at resource development	4	15%
Visionary	4	15%

Note. Total $N = 26$.

Table 4. Percentage of Studies that cited the Sub-Elements of Programmatic Capacity

CCF Sub-Element– Programmatic Capacity	# Studies Total	% Total Studies
Program driven by community needs	12	46%
Program fills unmet community needs	7	27%
Identifies intermediate goals	3	12%
Achieves “quick wins”	3	12%
Program provides innovative services	3	12%
Program culturally competent in design	3	12%

Note. Total $N = 26$.

IRB APPROVAL NOTICE

UNIVERSITY OF ILLINOIS
AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Notice of Determination of Human Subject Research

June 4, 2013

20130585-75231-1
20130585-75231-1

Keith Zander, BA
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Chicago, IL 60642
Phone: (773) 793-5219

RE: P**rotocol # 2013-0585**
A Multi-Level Investigation of School-Community Collaborative Capacity and Its Relationship to Student and School Outcomes

Sponsor: None

Dear Mr. Zander:

The UIC Office for the Protection of Research Subjects received your "Determination of Whether an Activity Represents Human Subjects Research" application, and has determined that this activity **DOES NOT meet the definition of human subject research** as defined by 45 CFR 46.102(f).

It is understood that this research will only involve the analysis of existing: 1) de-identified data; and 2) coded data for which you will not have access to the master list.

You may conduct your activity without further submission to the IRB; however, **please be reminded of the need to obtain Chicago Public Schools permission – or written verification that their approval is not required - prior to conducting this research.**

If this activity is used in conjunction with any other research involving human subjects or if it is modified in any way, it must be re-reviewed by OPRS staff.

CURRICULUM VITAE

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EDUCATION

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- **Ph.D.** Community and Prevention Research, Department of Psychology
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Sept 2013 – Present

- Conduct real-time and historical analysis of student-level data to directly inform regional and national strategy.
- Lead Performance Management for the organization, including the development and implementation of Performance Management tools and processes across work streams, as well as reporting progress to internal and external stakeholders.
- Collaborate with contracted external evaluators to provide direction and support concerning research goals, experimental design, written reports and other documents for internal/external use, as well as the strategic dissemination of findings

LEAD EVALUATION & RESEARCH ANALYST — **CHIGAGO, IL**
Community Schools Initiative, Chicago Public Schools

June 2009 – July 2013

- Led the design and implementation of a two year qualitative process evaluation consisting of interviews, observations, and focus groups with school and community stakeholders. The resulting framework now guides implementation and support for the district's 120 community schools.
- Create reports that summarize evaluation findings and provide actionable school- and district-level recommendations.
- Collaborate with contracted external evaluators to provide direction and support concerning research goals, experimental design, written reports and other documents for internal/external use, as well as the strategic dissemination of findings.
- Manage a team of three evaluators towards the collection and analysis of district-wide data that are summarized in community school profiles distributed annually to stakeholders to inform their planning and practice.

SPECIAL EDUCATION TEACHER — **ST. LOUIS, MO**
Teach for America, St. Louis Public Schools

May 2005 – June 2007

- One of 2,000 selected from more than 17,000 applicants to teach in under-resourced schools.
- Taught World Literature, Geometry, and multi-subject self-contained classes.
- Case Manager responsible for the Individualized Education Plans of 20 special education students.
- Created and led a weekly Geometry Club in which up to forty students received tutoring, ACT preparation, and opportunities to take math-related field trips.
- Varsity wrestling and baseball coach.

SKILLS

- Proficient in Microsoft Office, MPLUS, HLM, and SPSS.