

# **Distributed Leadership and Social Networks in the School-Based Development of the International Baccalaureate's Middle Years Programme in a Venezuelan K-12**

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Executive Summary

There is widespread public acknowledgement that the information-rich 21<sup>st</sup> century presents new exciting challenges that require a paradigm shift in education, from an industrial model of schooling to one that shapes the student as a lifelong learner. The development and implementation of curricula that responds to the needs of 21<sup>st</sup>-century learners and to contemporary developments in education requires schools with organizational structures that are based on the principle of collaboration (Hargreaves, 1994; Henderson & Hawthorne, 2000). Deep and careful analysis of the collective work of teachers and school administrators as they embark on the development of innovative instructional programs, such as the International Baccalaureate's Middle Years Programme (MYP), is essential to building models for 21st century education.

### **Theoretical Framework**

Two theoretical frameworks, distributed leadership and social networks, have emerged in the educational research literature that present leadership for school-based change and innovation efforts in terms of actions related to the school's central mission and emphasize the importance of social interactions for their enactment.

From the distributed leadership perspective, the idea of leadership moves away from personality traits, roles, and positions and is defined instead in terms of actions and processes as "the design and enactment of tasks involving the identification, acquisition, allocation, coordination and use of social, material and cultural resources tied to the core work of the organization" (Spillane, Coldren, & Diamond, 2001; Spillane, 2006). This theory emphasizes that the enactment of school leadership tasks involve multiple actors that go beyond formally appointed leaders and that they do so in a diversity of social configurations that range from centralized to distributed.

Social networks, this study's second theoretical frame, also highlights the interactive nature of leadership and school processes. It proposes that the social relationships and the resources embedded within them such as knowledge, influence and personal support harness the real power to make organizational action happen. In addition, social networks provides a methodology, Social Network Analysis, (Borgatti, Jones, & Everett, 1998) that enables research to measure, graph and interpret the patterns of social interactions that undergird the enactment of leadership tasks in organizations.

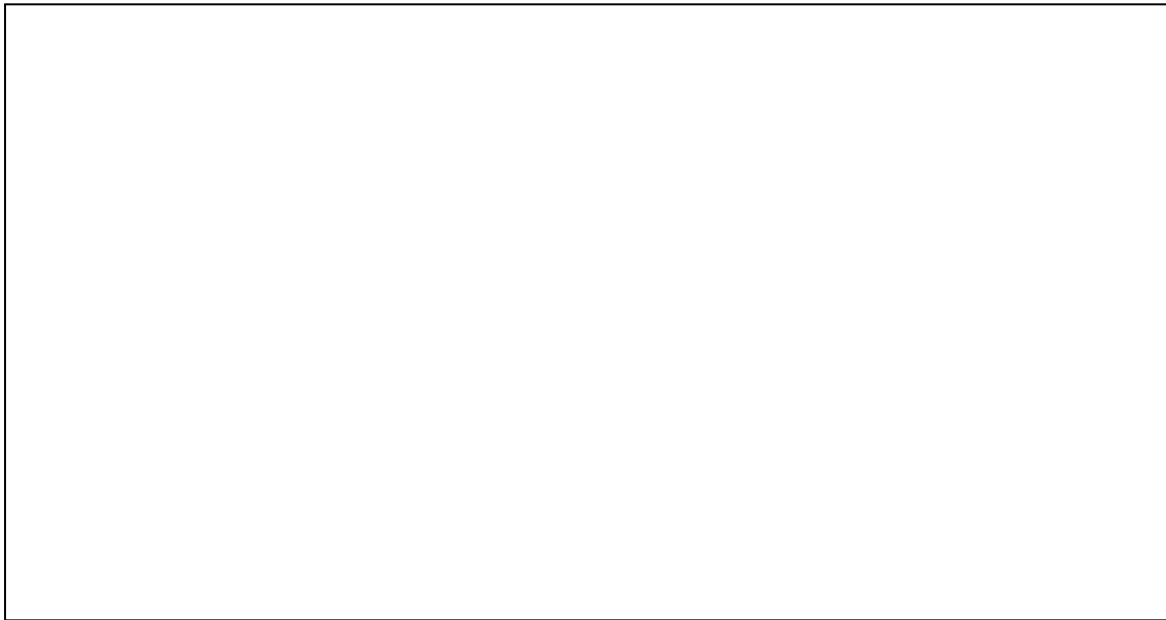
### **Methods**

This exploratory case study draws upon its integration of these theories to describe and understand leadership in action during the school-based design and early implementation of the MYP curricular master plan as well as the social networks underlying enactment of leadership actions. The study was conducted in the Juan XXIII IB School in Valencia, Venezuela who at the beginning point of the study was designing its MYP master plan and was about to formally implement it for

the first year. Data for this study consisted of social network data on information flow, curriculum collaboration, pedagogical support among other relationships collected through a survey instrument, interviews with a total of 22 school administrators, coordinators and teachers, observation of planning meetings and review of school documents dealing with design of the MYP.

## Findings

The study arrives at several important findings regarding design and early implementation of the MYP in the school studied:



*MYP master plan development depended on the enactment of two sets of leadership tasks: design tasks and teacher-support tasks.*

Design tasks: Three sequential tasks were found to be fundamental in assembling the school's master plan for adoption of the MYP. The first action, *reorganization of content*, consisted on the redistribution of subject content along 6<sup>th</sup> to 9<sup>th</sup> grade to meet the more demanding MYP's criteria and incorporate new and relevant knowledge. As revealed by social network and interview data, this task took on a collaborative distribution of leadership with area departments making participative decisions based on consensus and guided by each area coordinator. The second action was the *alignment of content* assigned to each grade level with the corresponding MYP learning objectives. In contrast to the first task, content alignment was a much more individualized task with each teacher separately taking charge of aligning his or her own content resulting in an "atomized" distribution. Once the master plan was completed through the first two tasks, the final design

task, *design of interdisciplinary instruction*, was enacted. It consisted of the development of learning units that integrate knowledge in the interdisciplinary way essential to the MYP's philosophy. This task was enacted by collaborative, informal and fluid patterns of interaction among teachers depending on the unit to be designed and teacher buy-in into this new form of planning and instruction. Overall, MYP design tasks reflected the variety of actions and corresponding distribution of leadership that shape this dynamic process. Together they enable the horizontal (within grade levels) and vertical (within area departments) articulation and coherence necessary to achieve a systemic academic vision.

Teacher-support tasks: In addition to design tasks it was found that they were critically supported by actions that were meant to provide teachers with the necessary resources to accomplish them. This support tasks are classified into three general types: 1) administrative support which consisted of information on procedures and deadlines as well as dissemination of planning instruments; pedagogical support through which teachers learned about instructional practices aligned with the school's vision; and socio-emotional support in terms of recognition of teachers' efforts and advice on personal issues. These tasks were strongly centralized on the MYP coordinator and the area coordinators for their respective colleagues. Overall, centralization of these tasks offers the potential advantage of a unifying direction to the program by disseminating consistent logistical information, minimizing divergent interpretations and giving regular teachers the ability to focus on instructional issues.

*Certain school- and team-level conditions support and constrain teacher teams' collaborative processes.*

Team variability in terms of their respective distribution of leadership and levels of collaboration was correlated to a number of conditions that either supported or constrained teacher collaboration.

Conditions that support collaboration:

First, area departments' autonomy for instructional decision-making promotes teacher collaboration by distributing responsibility away from centralized planning to all teachers. In this context, teachers are then able to work together within their area of expertise towards shared curricular outcomes.

Second, the guiding and moderating role of formal leaders such as area coordinators critically assists teacher collaboration. Their formal position of authority and recognized expertise help move collaborative process along by building consensus and finalizing team decisions (Harrison, 2005; Lin, 2001).

Third, teachers' sense of shared responsibility for student learning supports high levels of collaboration in instruction. The belief that jointly developed lessons are an effective way to engage students and promote their learning may positively influence teachers' interactions. Furthermore, collective efficacy has been linked to higher levels of student achievement (Goddard, Hoy, & Hoy, 2004).

And fourth, intuitive working relationships among colleagues can be developed through the establishment of successful institutionalized structures in the school. Because intuitive relationships are the result of repeated patterns of interactions leading to positive results, formalizing effective working relationships have the potential to deepen collaboration.

Conditions that constrain collaboration:

First, a lack of established formal structures that guide collaborative processes, as was the case with grade level lesson planning in this study, negatively impacts collaboration. Teachers have been found to be reluctant to take on leadership roles in an informal context (Krisiko, 2001; Smylie, 1995). Under this condition, teachers' work together over relies on spontaneous forms of collaboration considerably less stable than institutionalized working relationships (Gronn, 2003).

Second, team instability resulting from teacher turnover and unavailability of part time teachers to participate in team meetings limited team collaboration. This lack of consistency prevents teams for establishing stable and frequent collaborative ties focused on instruction and change efforts (Smylie & Brownlee-Conyers, 1992). Issues of time have been salient in studies of teacher collaboration over the years and its appropriate allocation has been found to be more important than other school factors such as facilities and staff development (Fullan & Miles, 1992; Grossman, Wineburg, & Woolworth, 2001).

Third, a multiplicity of administrative requirements such as different levels of planning formats restricts collaboration by redirecting teacher's efforts towards their completion. Teachers employ a disproportionate amount of their administrative hours meeting administrative deadlines, which prevent them from spending time to develop lessons together (Hennessy, Ruthven, & Brindley, 2004).

And fourth, low levels of teacher program buy-in within a team can also constrain their participation in collaborative processes. Resistance to an interdisciplinary vision and joint lesson planning may translate into fewer teacher interactions. Overall, these conditions constrain collaboration and foster teacher isolation which can in turn lead to decreased team-level outcomes and uncertainty regarding effective teaching practices (Rosenholtz, 1989).

*Interdisciplinary, grade-level networks became significantly denser during the first year of MYP implementation*

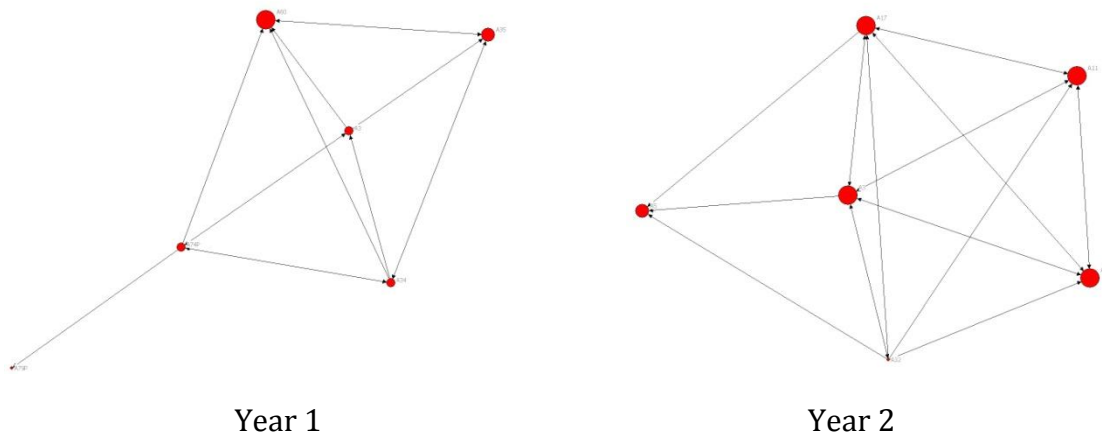
An important finding uncovered by Social Network Analysis was the positive evolution of interdisciplinary planning, central to the MYP pedagogical philosophy, during the first year of the program's implementation. Longitudinal network data from Year 1 to Year 2 indicates that teachers within grade levels were working together significantly more on lesson planning in Year 2 than in Year 1. Grade level densities saw an average increase of 0.13 in their curriculum collaboration (Table 1). Individual teachers' interactions within their grade level also increased

significantly from an average of 3.42 grade level ties per teacher in year 1 to 4.48 ties in year 2 ( $p>0.01$ ). These findings suggests that while area team ties are still utilized by teachers to access information about subject-specific content and teaching strategies, grade level interactions have become as important for planning lessons in response to the interdisciplinary nature of the MYP.

*Table 1: Grade Level Curriculum Collaboration Density Year 1 & 2*

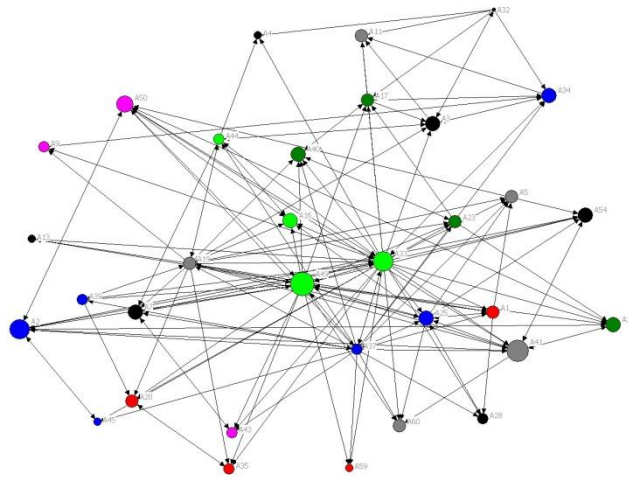
Grade Level	Curriculum Collab. Density	
	Year 1	Year 2
6 <sup>th</sup>	0.4667	0.6667
7 <sup>th</sup>	0.1389	0.3333
8 <sup>th</sup>	0.2857	0.3036
9 <sup>th</sup>	0.2321	0.3333
Avg.	0.2809	0.4092

Although grade-level, interdisciplinary collaboration was observed to increase overall in the first year of MYP implementation, social networks show significant differences in its form and development among MYP grade levels. While all grade levels from 6<sup>th</sup> to 9<sup>th</sup> saw significant increases in their curriculum collaboration densities, the 6<sup>th</sup> grade, confirming findings from qualitative data, clearly stood out in their interdisciplinary interaction with a .667 network density that more than doubled the rest of grade levels. Graphical representation of grade level collaboration in year 2 also illustrates interdisciplinary planning evolution, as can be seen in the 6<sup>th</sup> grade’s case:



*Figure 1: 6<sup>th</sup> grade evolution of curriculum collaboration network*

In addition to illustrating teacher interactions in the highly collaborative 6<sup>th</sup> grade, social networks indicate that for the upper MYP grade levels the entrepreneurship team was in a particularly active position in support of interdisciplinary networks. While teachers in all subject areas were participating in lesson planning across area departments, entrepreneurship teachers were accessed significantly more by teachers in other area teams for the development of interdisciplinary units. The team as a whole had the highest EI index, .804, of all area departments signaling a strong outward focus in their lesson collaboration. Individually, entrepreneurship teachers had the highest average of external ties (23 external ties per teacher) than teachers in any other area department. Network representation of lesson collaboration from grades 7<sup>th</sup> to 9<sup>th</sup> in Figure 2 shows the central role the relatively small department, in bright green, played (color node indicates area department, node size indicates in-degree centrality).



*Figure 2: MYP Lesson collaboration network*

### **Implications/Recommendations for Practice**

There are several implications for school practice and the in-house development of 21<sup>st</sup>-century academic programs from the study's findings. One implication is that school-based design of curricula such as the MYP's requires the active involvement of all teachers through strong vertical structures, such as area departments, to build the initial curricular foundation. This form of teacher teaming should enjoy a considerable degree of autonomy on instructional decision-making and count on formal leaders with the expertise and social credentials to move collaborative processes forward. Given the long-term importance of the curricular outcome of these teams' work, the school should ensure levels of quality through expert and timely supervision of design tasks.

A second implication for schools designing these programs is that their approach to learning will most significantly impact traditional teaching practices by requiring joint, interdisciplinary lesson planning. This pedagogical practice translates into a challenging shift for teachers from discipline-based to grade level-based instruction focused on offering an integrated perspective of subject knowledge. Formally creating opportunities and structures for these teams to flourish and generate appropriate and useful pedagogical knowledge may be an important intrinsic element of program design itself (Chrispeels, Andrews, & González, 2007; Smylie & Evans, 2006). Requiring a number of project-based lessons per subject area, formalizing successful lessons developed so they become routine, and appointment of formal leaders responsible for promoting interdisciplinary collaboration may lead to more and better team outcomes in this regard. However, schools should avoid the trap of merely mandating time and directives to collaborate as forced collaboration may solidify opposition to a program perceived as imposed making future efforts more challenging. Therefore, the development of formal structure and routines should follow careful study of existing working relationships on which to build them.

A third implication is that schools should guarantee the effective dissemination and access to teachers of resources related to design and implementation of the program. On one hand, the flow of administrative and logistical information critical for quality and timely completion of design tasks can be centralized to maximize efficiency of this form of routine information and ensure consistency across the school. On the other hand, the flow of pedagogical resources should be structured so that is supported by school members with the authority, expertise, and respect to make them relevant to teachers. The school should also strive for the establishment and maintenance of a socio-emotional network through which teachers engage on a personal level and are able to recognize each other's efforts which is critical for the flow of instrumental resources and collaboration.

A fourth implication of this study is the critical need for schools to address three key constraining conditions to teacher collaboration and implementation of programs relying on it. First, team instability resulting from teacher turnover and time commitments of part-time teachers prevents them from developing the professional relationships and routines necessary for collaboration. Although teacher turnover is a complex issue, the issue of instability could be partially address by designing schedules that incorporate part-time teachers to planning meetings. A possibility might be holding these meetings at the beginning of the school day as opposed to the end of the day when part-time teachers need to leave for their other jobs. Second, the multiplicity and redundancy of planning requirements should be addressed as they limit the time teachers are able to spend on collaborative work during their administrative hours. A serious consideration of the need for each planning format and constructive ways to collapse them would benefit teachers and coordinators alike by making most efficient use of their time. And third, pockets of low teacher buy-in into novel programs constrict team efforts to work together and foster teacher isolation. Although a challenging constraint, schools could make use of these resistant individuals' expressive relationships with other teachers and coordinators, critical for the development of instrumental



relationships, to build their confidence in the program and open them to collaborative processes. The social pressure exerted by school colleagues and the existence of expressive relationships among them has been found to have a deciding effect in its adoption and implementation (Frank, Zhao, & Borman, 2004).

The final implication of this study for educational practice is the potential for schools to use social network data to provide insight into their overall collaborative and information flow structures. Network measures and maps can provide critical information about the best ways to move knowledge throughout the system, identify relational weaknesses to be addressed as well as working structures to be duplicated in the school. As was mentioned before the formalization of collaborative structures and routines could be instrumentally informed by social network analysis of existing relationships on which to build them. Thus, this method can inform a coordinated and thoughtful effort to build teacher ties and enhance the whole school's capacity for collaboration and program implementation (Daly & Finnigan, 2009; Smylie & Evans, 2006).

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