

**The relationship between professional community and student
achievement in secondary education**

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Abstract

This study aims at revising and bringing clarifications on the debate of the possible impact of professional community on student achievement. The aim is achieved by an analysis of the quantitative studies that were performed in the last 30 years and that measured the effect of professional community on student achievement in secondary education. Criteria for selecting the articles and for analyzing the quality of the statistical techniques used and the results obtained were formulated. The effects of professional community on student achievement found were small, expressed in effect sizes, regardless the statistical modeling technique used. From this perspective, lines of future research are discussed.

1. Introduction

In the last thirty years, qualitative and quantitative research supported the idea that student's achievement increases significantly when teachers work together as a team. This implied a need for a clear operationalization of the concept of teachers' working together within schools, which stimulated and sustained the development of the concept of professional communities and its related concepts. Moreover, starting from the eighties, researchers defined the concept and its characteristics using qualitative designs and investigated its relations, development and effects using quantitative analyses.

The empirical search for school and teacher traits that enhance student achievement provided empirical proof that professional community is related to student achievement in secondary education (Louis & Marks, 1998)¹. In search for such empirical proof, this article reviewed the quantitative research-based evidence that exists on the relationship of professional community with student achievement and summarized the effects found, all this supported by the process of elaborating and defining the concept of professional community.

¹ More references will be presented later in this paper

In order to understand the structure and content of this paper, a short conceptualization of teacher professional learning community will be presented, together with the criteria used to select the articles reviewed.

Beginning with the work of Little (1982, 1983), Darling-Hamond (1984), Rosenholtz, et al. (1986), Bryk and Driscoll (1988) and Louis and Marks (1998), the concept was developed from “norms of collegiality” (Little, 1982, p.325) and “teachers’ collaboration with colleagues” (Rosenholtz, et al., 1986, p.91) to “professional community” (Louis & Marks, 1998, p.532; Bryk, Camburn, & Louis, 1999, p.751) and “professional learning community” (Bolam, et al., 2005, p.i). As first indices, teachers are part of a professional community when they reflect together on instructional practices and school mission, when they engage in cooperative practices and provide feedback on teaching activities, with a focus on student learning (Rosenholtz, et al., 1986; Louis, & Kruse, 1995; Louis, & Marks, 1998; Lee, & Smith, 1999; Bryk, Camburn, & Louis, 1999; McLaughlin, & Talbert, 2001; Wahlstrom, & Louis, 2008).

The criteria used to select the articles were related to the intended content of this review, as quantitative data analysis articles, focused on the relationship of professional community with student achievement in secondary education. Moreover, articles after 1980 were considered, when many researches started their work on defining and operationalizing the concept of professional communities and investigating its characteristics, relationships and effects.

Aim of the study

Professional community was hypothesized to have a significant positive impact on student achievement.

This is also the main aim and research question of this study:

- Is the empirical evidence available by now supporting the positive impact of professional community on student achievement in secondary schools?

In order to achieve the aim of this study, a detailed analysis of the quantitative evidence found was performed, completed by a summary of the size of the effects found and a discussion of the methodological limitations.

2. Conceptualization of professional community

The concept of professional community is frequently associated with concepts like teacher collaboration or professional learning community, measured in similar ways, which brings confusion when starting the investigation in this specific domain. A temporal perspective facilitates the understanding of the concept and its relation with similar terms, by looking closely at its development process, in theoretical, qualitative and quantitative empirical studies.

Even before 1980, the concept of professional community started its development from teacher interaction and norms of collaboration. Authors like Armor et al. (1976), Rutter et al. (1979) and Venezky and Winfield (1979) considered that teaching should be a collective action within the collaborative settings of effective schools, in order to sustain teacher learning and classroom success (Rosenholtz, Bassler, & Hoover-Dempsey, 1986, p.93), concluding that professional dialogue among teachers is frequent. In addition, authors like Bishop (1977), Bridges and Halliman (1978), concluded that “in comparison with their isolated counterparts, teachers committed to norms of collaboration interact more about professional matters and interact with a greater number of colleagues (Rosenholtz, Bassler, & Hoover-Dempsey, 1986, p.93).

After 1980, Little’s work (1982, 1983), added the concept of “collegiality” and “norms of collegiality”, and concluded that “in successful schools²..., teachers value and participate in norms of collegiality and continuous improvement; they persuade a greater range of professional interactions with fellow teachers and administrators, including talk about

² Schools with high capability of adapting successfully to major changes and of recording higher levels of student achievement

instruction, structured observation and shared planning or preparation” (Little, 1982, p.325). Also with the work of Little (1982), teacher collaboration or collegiality started to be defined and characterized as “teachers discussed classroom practice and student learning; they worked together to develop new content; they were sharing teaching materials; they were giving and receiving feedback and advice openly; they observed each others classroom, being eager to learn new ways of teaching” (Little, 2006, p.37, 38). Moreover, in 1983, Little also associated the focus of these collegial relationships in schools with teacher learning and student achievement (Little, 1983, p. 34).

The role of collegiality and collaboration with colleagues was put to the test in a quantitative manner by Rosenholtz, Bassler, and Hoover-Dempsey, (1986) and Rosenholtz and Simpson (1990)³ and concluded that it fosters teacher learning. Their studies indicate already that these concepts do not foster teacher learning alone, but together with other characteristics of the “working conditions”, as school level focus on student achievement, instructional coordination and school goal setting, using path analysis to investigate these indirect relations.

The work of Little (1993) and Talbert and McLaughlin (1994) sifted the focus of teacher collaboration and collegiality towards learning, community and learning communities (Little, 2006). Little (1993) concluded that when teachers engage in “concrete talk about teaching with one another, observe one another and provide feedback about teaching and collaborate around planning instruction” (in Jackson & Tasker, 2002), they are part of teacher professional learning communities within school. The work of Senge (1990), Block (1993), Galagan (1994), Whyte (1994) and others, emphasize the importance of “supporting the collective engagement of staff in activities as shared vision and development, problem identification, learning, and problem resolution (Hord, 1997, p.13), as manifestations of professional learning communities as well. When put to the test again by Talbert and McLaughlin (1994) in a qualitative manner, they found that active learning communities of teachers stimulate teacher professionalism and teacher commitment.

³ Building on the work of Glidewell et al. (1983), Cohen (1985), Mann and Fenwick (1985)

When Hord (1997) reviewed the literature that existed until then on teacher collaboration and professional learning community, it was concluded that it would manifest as “shared vision and teacher commitment to students’ learning, collective learning focused on effective solutions for students’ needs, the visitation and review of teachers’ classroom behavior as feedback and assistance activity” (Hord, 1997, p.27).

Starting 1995, the concept of professional learning community or professional community was put seriously to the test in a quantitative manner, as part of the comprehensive reform movement in the USA. Teachers organized in professional communities within schools, in primary, secondary or high schools, with the focus on student achievement, became a form of the comprehensive reform and its effect was evaluated using different designs. In studies like Lee and Smith, (1995)⁴, Newmann and Wehlange, (1995)⁵, Marks and Louis, (1997)⁶, Louis and Marks, (1998)⁷, Tighe, Wang, and Foley, (2002)⁸, Smylie and Wenzel (2003)⁹ and D’Amico, Harwell, Stein, and van den Heuvel, (2001 , April)¹⁰, Supovitz (2002), the effect of professional community on student achievement was investigated. Moreover, in studies like Bryk et al. (1994), Newmann, Marks, and Gamoran, (1996)¹¹, Louis and Kruse, (1995), Louis, Marks and Kruse, (1996)¹², Bryk, Camburn, and Louis, (1999)¹³, the effect of professional community on other teacher variables was investigated. The main contribution in conceptualization of these quantitative investigations was the definition of professional community based on its operationalization. As result of these quantitative investigations, professional community was operationalized and defined as: reflective dialogue, deprivatization of practice or feedback on instruction, collaborative activity, shared sense of purpose and a collective focus on student learning. “Reflective dialogue” represents

⁴ The concept of “communal organizational forms” (p.241)

⁵ The concept of “school wide professional community” (p.10)

⁶ The concept of “professional community” (p.248)

⁷ The concept of “professional community” (p.539)

⁸ The concept of “small learning communities” (p.18)

⁹ The concept of “teacher professional community” (p.73)

¹⁰ The concept of “school professional community” (p.6)

¹¹ Dependent variable: “authentic pedagogy”

¹² Dependent variable: “teacher responsibility for student learning”

¹³ Dependent variable: “teacher professional learning and experimentation”

the amount of professional conversation directed at specific issues of instructional practice; “Deprivatized practice” represents the degree to which teachers observe each other’s classes to provide meaningful feedback on their colleagues’ teaching; “Collaborative activity” describes the extent to which teachers engage in cooperative practices together with a more temporal measure of collaboration; “Shared sense of purpose” refers to a consensus among school staff regarding the school mission and principles by which the school operates; “A collective focus on student learning” indicates the emphasis teachers place on high student achievement (Louis & Marks, 1998, p.545).

Related conceptualizations of professional community were formulated by DuFour and Eaker, (1998), Westheimer (1998) or Wenger (2000), DuFour (2004), as characterized by: shared beliefs, interaction and participation, interdependence, concern for individual and minority views and meaningful relationships. Starting 2000, more authors diversified the investigation on the concept of professional community, as Lieberman, (2000), Grossman et al. (2001), Sackney and Mitchell, (2001).

After 2005, the definition and conceptualization of professional community based on the five mentioned characteristics, was put to the test again in studies like Bolam et al. (2005)¹⁴, to measure its effect on student achievement. Based on the results obtained, three other characteristics of professional community were proposed to be added to the previous five ones, as “openness, networks and partnerships¹⁵, inclusive membership¹⁶ and mutual trust, respect and support¹⁷” (Bolam et al, 2005, p.i). In addition, Goddard, Goddard, and Tschannen-Moran, (2007)¹⁸ added also the importance of “the informal configuration within each collaboration may occur” (p.880).

¹⁴ The concept of “professional learning community” (p.iii)

¹⁵ Staff engaged in external partnerships and learning networks, encouraging risk-taking and innovation (Bolam et al, 2005, p.i)

¹⁶ A professional community should be large, involving staff across the school, as governors or school council members (Bolam et al, 2005, p.i)

¹⁷ The staff feels respected, trusted and competent (Bolam et al, 2005, p.i)

¹⁸ The concept of “teacher collaboration” (p.877)

As a conclusion, the concept of professional community is defined as collaboration with colleagues within school and it is characterized by reflective dialogue, deprivatization of practice, cooperative practices, shared sense of school purpose and collective responsibility or focus on student learning. All these five characteristics of professional community are the support for its operationalization. This is the working definition of professional community in this paper. However, other related conceptualizations were considered when selecting the appropriate articles for the aim of this investigation.

Background

The investigation into the concept of professional community and student achievement is complex and diverse. More reviews of the related literature were published, reviews focused on the concept and its development, on its relation with other predictors like professional development, or on its effects on student achievement.

Hord (1997) performed a first review of the related literature, focusing on the relationship between change and school improvement in education and professional communities and, implicitly, student outcomes. After reviewing more studies¹⁹ focused on the “linkage of staff and student results” (p.20), Hord (1997) concluded that

“professional learning communities can be a significant force for empowering staff that leads to school change and improvement and increased student outcomes” (p.30)

However, strictly related to the aim of this investigation, the only study that had a clear measurement of professional community and of its effect on student achievement in secondary education was Newmann and Wehlage (1995).

Ten years later, Little (2006) performed a new literature review aimed at investigating the relationship between professional community and teacher professional development,

¹⁹ The studies reviewed were: Lee, Smith and Croninger (1995), Lieberman (1995), Darling-Hammond (1995), Bryk et al. (1994), Lieberman and McLaughlin (1992), McLaughlin and Talbert (1993), Boyer (1995), Newmann and Wehlage (1995).

specifically related to learning-centered schools. After reviewing articles²⁰ that investigated the relationship at interest, the author points out the results of Lee & Smith (1995), that

“found measures of staff cooperation to be unrelated to student achievement, even though a spirit of cooperation is no doubt desirable from a workplace perspective” (p.40).

However, the study of Little (2006) does not focus on the impact of professional community on student achievement, but more on a comprehensive review of “the concept of professional community and a model for contexts of teaching” (p.12).

Stoll et al. (2006) performed a third review of the literature, with the main aim of reviewing articles focused on the effectiveness and development of professional learning communities. The study is important strictly for this paper because of organizing the existing evidence on the five key characteristics of professional community, as: “shared values and vision, collective responsibility, reflective professional inquiry, collaboration and group learning” (p.226).

Even if the study is not reviewing empirical evidence of the relationship between professional community and student achievement, it concludes that

“a key purpose of professional learning communities is to enhance teacher effectiveness as professionals, for students’ ultimate benefit... the ultimate outcome of professional learning communities has to be experienced by students” (p.229).

Later in 2006, Lavié performed a fourth literature review, where he organized the empirical evidence on “school-based teacher collaboration” (p.773) on five discourses, one of them being the school effectiveness discourse, where most of the quantitative evidence can be found. The “school effectiveness and improvement discourses depict teacher collaboration as a product of cultural management led by the school’s principal” and other related factors (p.773).

²⁰ Newmann & Wehlage (1995), Louis and Kruse (1995), Lee and Smith (1995)

Based on the empirical evidence²¹ mentioned within the school effectiveness discourse, Lavié concluded that

“factors such as vision and shared goals correlate with effectiveness of student learning and early reviews include explicit references to teacher collaboration as a factor of school effectiveness” (p.779).

However, this review did not have as a main goal a throughout analysis of the quantitative empirical evidence of the relationship of teacher collaboration with student achievement, as the present paper has.

The most recent literature review was performed in 2008 by Vescio, Ross, and Adams and the focus was on reviewing research “on the impact of professional learning communities on teaching practice and student achievement” (p.80). After reviewing the evidence²² of increase in student achievement, the authors concluded

“although few in number, the collective results of these studies offer an unequivocal answer to the question about whether the literature supports the assumption that student learning increases when teachers participate in professional learning communities. The answer is resounding and encouraging yes.” (p.87).

However, the eight studies considered as evidence of the increase in student achievement are a combination of qualitative and quantitative studies, both types of empirical evidence being considered.

Other short reviews on the concept of professional community or organizational learning are performed by Imants (2003) or Jackson and Tasker (2002), focusing on defining and characterizing the concept.

²¹ Rutter, Maughan, Mortimore, and Ouston (1979), Purkey and Smith (1983), Rosenholtz (1985), Rosenholtz (1991), Stevenson (1987), Bryk and Driscoll (1988), Lee, Dedrick, and Smith (1991), Newmann, Rutter, and Smith (1989), Lee and Smith (1996)

²² Berry et al. (2005), Bolam et al. (2005), Hollins et al. (2004), Louis and Marks (1998), Phillips (2003), Strahan (2003), Supovitz (2002), Supovitz and Christman (2003)

When looking at the existing background, a need for a clear presentation of the quantitative empirical evidence of the relation between professional community and student achievement is needed. Quantitative empirical evidence offers information on the operationalization and measurement of professional community and on the size of its effects on student achievement. Moreover, an analysis of the quality of the quantitative evidence presented, as methodology implemented or covariate's effects considered, represented useful information when concluding on the existing effects.

School trait or subject department trait

Another way to look at the concept of professional community is to consider it either as a subject department trait or as a school trait. In other words, professional community was defined and operationalized similarly, but studied differently, as a school or as a subject department trait.

As a first general observation, quantitative studies took a preference in studying professional community as a school trait, being more interested on its effects as a school general trait (Lee & Smith, (1995); Newmann & Wehlange, (1995); Marks & Louis, (1997); Louis & Marks, (1998); Tighe, Wang, & Foley, (2002); Smylie & Wenzel, (2003); D'Amico, Harwell, Stein, & van den Heuvel, (2001), April; Supovitz (2002); Bryk et al., (1994); Newmann, Marks, & Gamoran, (1996); Louis & Kruse, (1995); Louis, Marks, & Kruse, (1996); Bryk, Camburn, & Louis, (1999); Bolam et al, (2005); Goddard, Goddard, & Tschannen-Moran, (2007); and others). In addition, qualitative studies focused their interested more on professional community as a subject department trait (Becher, (1989); Grossman, (1991); Talbert, (1991); McLaughlin & Talbert, (1994); Siskin, (1991, 1994); Grossman & Stodolsky, (1994; 1995); Evans-Stout, (1998); Berry, Johnson, & Montgomery, (2005); Spillane (2005); Burch & Spillane, (2005); Dalgarno & Colgan, (2007); and others).

It is important to know if these two manifestations of professional community are equally strong, opposite or supporting each other. Specifically for this study, it is good to know as what type of trait is professional community measured and if it is conditioned in any way. Little (2002, a) explained more in-depth the relationship that exists between school based and subject based professional communities, in this case in relation to school reform. “A school engaged in whole-school reform sustained high teacher commitment and school-level community by constituting professional communities strongly at the school level but its departments are the ones that displayed varying capacity and disposition to examine problems of teaching and learning at the classroom level” (Little, 2002, p.673).

However, some authors like Little (2002,a) or Talbert and McLaughlin (2002), mentioned the existence of a tension between school and subject professional communities. Talbert and McLaughlin mentioned, “teachers’ perceptions of the students differ according to the cultural lens and experience of teachers in different subject department communities” (2002, p.337). Moreover, Little (1993) concluded that teacher collaboration, as professional development, needs to attend systematically to the subject-specific aspects of schoolwork.

Even in this case, the presence of professional community as a school trait is important for its impact on teacher’s activity and student achievement.

This is the reason why it is important to mention as what type of trait is professional community measured when its effect on student achievement is investigated.

3. Method

This analysis focuses on studies that investigated the direct effect of professional community on student achievement in secondary schools using quantitative²³ methods between 1978 and 2008. The year 1978 was chosen because it represents the moment when the concept of professional community started its development and its methodological investigations. This paper presents a conceptual and in-depth analysis of these quantitative studies and an international perspective on the development of the investigation of the direct effects of professional community on student achievement in secondary education.

Selection of studies

In order to find quantitative empirical investigations of the effect of professional community on student achievement in secondary education, a systematic and comprehensive search was conducted, based on EBSCOhost, ERIC and PiCarta documentary databases. Considering that these search engines cover only scholarly journals and library books, the search was continued using GOOGLE Scholar in order to find online research reports or conference presentations. Moreover, the reviews and the articles used for the conceptualization part were examined for references to empirical studies. Moreover, all the selected studies were examined for any other references that were not yet covered.

In the next stage, the empirical studies found were selected again based on three main criteria. The first criterion was that these investigations were focused on secondary education²⁴. The second criterion was a clear conceptualization and operationalization of

²³ It is useful to mention also the qualitative studies that investigated professional communities as a school trait and its effect on student achievement, as Newmann, King, and Youngs (2000); Caron and McLaughlin (2002); Strahan (2003); Hipp and Huffman, (2003); Phillips (2003); Hollins et al. (2004); Thompson, Gregg, and Niska, (2004); Berry, Johnson, and Montgomery (2005).

²⁴ It is useful to name also the articles that did not focus on secondary education, but had a clear conceptualization and operationalization of professional community and included an explicit measure of student achievement as the dependent variable. For example, such articles that focused on primary

professional community used. Moreover, the third criterion was that all these studies included an explicit measure of student achievement as the dependent variable. Respecting these three criteria, in total, seven studies were selected (Appendix A).

The analysis of the studies

Two types of criteria were used to analyze the seven articles selected. These criteria were related to the conceptualization and the methodology of the studies, and were organized into conceptual criteria and methodological criteria.

The content related criteria used started with the country where the study was performed (being an international perspective), the concept used (definition and operationalization), and type of trait (school or subject trait). The methodological criteria focused on sample size, dependent variable (type of student achievement), the data source employed (teacher data or principal data), type of test employed (questionnaire, interviews), type of statistical modeling techniques used (multilevel analysis or not), results (of the relationship of professional community and student achievement), value added (whether or not the study adjusted for covariates at student level) and effect sizes reported.

Based on these content related and methodological criteria, the seven articles selected were analyzed (Appendix C).

The results of the complete analysis of the seven articles are presented in Table 1.

education were: Tighe, Wang, and Foley, (2002), Smylie and Wenzel, (2003), D'Amico, Harwell, Stein, and van den Heuvel, (2001, April), Goddard, Goddard, and Tschannen-Moran, (2007).