

**Persistent Inequality:
The Chilean voucher system and its impacts on socio-
economic segregation and quality of education.**

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Author's Declaration

This is to certify that the intellectual content of this thesis is solely the product of my own work. Due acknowledgement has been made in the text to all other materials used and for all assistance received in preparation.

This thesis does not exceed the word length for this degree and it has not been submitted for any other degree or purpose.

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Abstract

In the last decades, the Chilean educational system is carrying on a process of increasing reforms, beginning with the instauration of a voucher system. Since the implementation of this scheme, however, researchers have pointed out the low academic efficacy and remarkable problem of equity that have developed from this intended reform. After the resulting social discontent, education became an undeniable priority in the national debate; consequently, a significant adjustment to the system was enacted in 2008. Existing scholarly work points to the need for expanding the study of school effectiveness to include a wider notion of context. Theoretically, part of the existing research isolates school performance from its wider sociocultural context, which can be defined as the policy environment and socioeconomic composition of the school. Both of these definitions of context have been avoided or reduced. Although the current effectiveness research emphasises school processes as a way to centralise the idea that school can make a difference, it nevertheless remains acritical with regard to specific policy ideological assumptions and their implications on the notion of effectiveness and the real power of the school to take part in social change.

The purpose of this research is to broaden the study of school effectiveness within a long-lasting market oriented system. Using a mixed method research design, the data is collected and analysed through quantitative and qualitative approaches. Deploying multilevel analysis (HLM), the study analyses the presence and impact of the socioeconomic composition of school related to the effectiveness and equity of mathematics academic distribution in 4th grade students at a national level. Aiming to decode the impact of recent policy accountability, the qualitative approach interviews principals and teachers, thereby examining practices for effectiveness and the impact of accountability on the teachers' sense of professionalisation. Nvivo software is used to initiate a grounded theory explanation of the sensemaking of principals and teachers in three socioeconomic disadvantaged school cases.

The study concludes that the level of socioeconomic composition of a school impacts more strongly than the family socioeconomic composition, constituting a double disadvantage for vulnerable students. Disadvantaged students attending disadvantaged schools are doubly affected by socioeconomic segregation. These contextual variables affect the effectiveness of schools, resulting in school comparisons that are unfair and misleading. Public schools appear to perform better than private schools when contextual variables are taken into account;

however, the existing public policy of school classification does not include multilevel analysis or the type of contextual variables incorporated in this research.

Another important conclusion of this study is that the policy of accountability erodes teacher professionalisation and encourages an authoritarian type of leadership. The practice of emphasising specific subjects and the idea of equating student learning with results on standardised evaluations affect the pedagogical practices of teachers, limiting their process to undertaking a series of routine actions for test preparation. Moreover, the urgency toward achieving good test results encourage schools to focus their practices on accomplishing these results, and not on the process of learning. A successful approach to effectiveness within the accountability system seems to be related to highly organised schools with a top-down type of leadership. Disadvantaged schools with a high sense of teacher professionalism and with democratic and flexible school organisation appear to be in opposition to the accountability policy.

These findings have significant implications for the operation of a market oriented system. The market oriented system operating in Chile affects the distribution of student opportunities based on their socioeconomic background. The existing school segregation impacts both the operations inside the school and the purpose of the system that is intended to equalise and develop opportunities for students, thereby making school a social institution that can have a positive effect on the lives of pupils and staff. Persisting in a view of the market as a social regulator of effectiveness is not supported by empirical evidence; instead, this view shifts responsibility to the schools and encourages them to compete with each other as a logic of productivity, which affects how schools respond to students who are most in need of their care. Reducing the objectives of education to performativity leads to an impoverishing of the educational experience of students, and a diminishing sense of professionalism of staff. The notion of educational quality requires broadening to include a democratic experience of knowledge construction.

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1 Chapter One: Introduction

1.1 Background

Issues of equity and disadvantaged schools are key worldwide concerns. In this area, Chile presents a useful mix of indicators. From the macroeconomic point of view, Chile exhibits stability, competitiveness, economic freedom and is classified as a middle high income country by the OECD; but Chile has also long manifested an extensive problem in terms of educational equity. On the economic distribution and social equity front, Chile still has much work to do.

In the educational field, Chile displays an advanced level compared to the rest of Latin America in most international studies (PISA and TIMSS & PIRLS), and has been raising its indicators on almost all aspects (Castro-Hidalgo & Gomez-Alvarez, 2016). Public funding increases constantly; the retention and completion rate in primary and secondary level is high. The continuing school reforms in recent years, however, still mask a bigger concern: the equity and quality of school impact.

The Chilean educational system reflects a long-established voucher design that was installed during the Pinochet dictatorship and signified a huge transformation. Although successive democratic governments have adjusted the system, the fundamental principles remain. The voucher design is still based on a market oriented policy that rests on two main assumptions: that parent choice and school competition will spur effectiveness.

One of the most important adjustments to the system that initiated the current series of reforms is the *Preferential Education Subsidy* law (SEP in Spanish) (CEPPE, 2010; Weinstein, Fuenzalida, & Muñoz, 2010). This program, incorporated in 2008, introduced two significant modifications to the system: adjusting the funding scheme in favour of disadvantaged students, and holding the school responsible for the quality of education (BCN, 2008). This educational reform is a new push in the direction of the market logic, introducing an accountability measure to ensure school success. Undertaken after the first cycle of its implementation, this research evaluates empirically the market logic assumptions that the SEP reform would yield school effectiveness.

Although the Chilean system has improved the schooling experience for students, the system still presents endemic problems of socioeconomic school segregation that impact the opportunities for students from disadvantaged background (Donoso-Díaz & Castro-Paredes, 2017). Although disparities on funding have been reduced between schools, the general system seems to sustain a low level of quality, especially when student performance is compared with other OECD countries (Chakrabarti, 2013; Elacqua, Contreras, Salazar, & Santos, 2011; Hsieh & Urquiola, 2006; Ravitch, 2010; Torche, 2005).

Behind these social problems of low effectiveness and equity in education, there are theoretical, methodological and policy implications from the Chilean case that need to be discussed.

1.2 Theoretical framework

This thesis connects two distanced theoretical corpuses: The enormous empirical evidence produced by educational effective research (EER), and the sociology of education and its critique.

With regard to the EER evidence, the concept of school effectiveness and the internal mechanisms that make a school successful are discussed; and the idea that school can make a difference is finally tested. Substantially, the methodological use of multilevel analysis is applied, and extended to the analysis of socioeconomic composition and its effects.

In respect to the sociology of education, the concept of context forms the main reference for analysis. This theoretical framework serves to examine the implementation of policy and the related implications on school effectiveness within a structural condition of socioeconomic school segregation. The argument of this thesis is: Disregarding the socioeconomic context of a school leads to a misleading interpretation of its functioning and effectiveness (Cervini, 2009; Dumay & Dupriez, 2007, 2008, 2014; Dupriez & Dumay, 2006; Hans Luyten, Hendriks, & Scheerens, 2014; Mizala & Torche, 2012; OECD, 2008, 2010, 2012b). The factors of teacher sensemaking and school institutional logics are also incorporated to develop a comprehensive theoretical approach.

This thesis also includes a discussion of the most fundamental assumption of the market-oriented system as applied to education. The theoretical framework that advances public-private partnerships as a policy solution to quality and access problems of educational systems (Verger, BonaL, & Zancajo, 2016) is empirically tested.

1.3 Statement of the problem, the gap in the research

As indicated, the Chilean case represents an ideal opportunity to test market principles in education; however, to be able to do so, it is necessary to confront theoretical, methodological and empirical restrictions.

In spite of a general acknowledgement of the importance of context in the theoretical sphere, it has only been partially introduced. Indeed, one of the main criticisms of educational effectiveness research (EER) is the lack of contextualisation (Carney, 2003; Chudgar & Luschei, 2009; Murillo & Hernández Rincón, 2002; Proudford & Baker, 1995; Scheerens, 2001; Wrigley, 2013). Researchers have often evaluated the effectiveness of schools with little consideration of the specific conditions present in different educational systems.

The school effectiveness literature, like much research in education, is restricted by having been largely conducted in, and applied to, the most developed countries (Televantou et al., 2015). It is important to know more about equity and quality of education in order to test, and perhaps modify, a body of theory that has been mainly constructed by and carried out in the developed world.

One of the empirical consequences of only partially introducing the notion of context is that the resulting analysis of the performance of the educational system is biased and to some extent mistaken. For example, the voucher system operating in Chile has been analysed with traditional methodologies and a restricted notion of context. The use of statistical techniques (OLS) that suppress the effect of context (Hox, 2002; Rasbash, 2008; Raudenbush & Bryk, 1986; Snijders & Bosker, 2012) leads to a misperception of comparisons of the impact of school effectiveness that favours private managed schools over public ones.

Another theoretical restriction is the concept of what constitutes school effectiveness. EER has been criticised for its restricted view of quality as represented by standardised measures

of a limited choice of subjects (Carney, 2003; Proudford & Baker, 1995; Wrigley, 2013). The Chilean researchers echo this representation, and have analysed the impact of major school adjustments according to academic gains (MINEDUC, 2012; Peticara, Roman, & Selman, 2013; Raczynski, Muñoz, Weinstein, & Pascual, 2013; J. Valenzuela, Villarroel, & Villalobos, 2013) rather than including other aspects of school quality, such as democratic governance and teacher professionalism. School reform evaluation has been undertaken using the prism of technocratic analysis that excluded critical and socio-political discussion of reforms. The existing literature has evaluated the effects of SEP law in terms of its implementation without discussing the implications of this reform in the context of the voucher system, where contextual variables have played an important effect on effectiveness.

Hence the analysis of the new accountability process inaugurated by the SEP program has been unnecessarily restricted. Concentrating investigative efforts on establishing the academic gains only produces a partial analysis of the efficacy of the program. Current research in the Chilean context has excluded the sensemaking of principals and teachers, which again marks only a partial vision of improvement. This thesis argues that the experiences and discourses of persons who are directly involved in the reforms comprise a significant contribution to the understanding of educational changes (Fullan, 2001) and the type of effectiveness that ultimately results from the reforms (Bridwell-Mitchell, 2013; Coburn, 2001; Fullan, 2001; Louis, Febey, & Schroeder, 2005).

Methodologically, research in the area of educational effectiveness lacks an integrated vision of the problem (Reynolds et al., 2014; Sammons, 2010). The most common research strategy in this area is quantitative. Although the macro perspective is useful in obtaining the big picture of effectiveness, it lacks an understanding of processes. Qualitative perspectives are useful to bring vivid details and significant quality to the approach, although those strategies also have limitations, especially with regard to generalisation and scope. Therefore, methodologically, a viable integration strategy has not been developed in the study of school reforms (Thrupp, 1995) in the research of school effectiveness.

1.4 Rationale for the context of study

The Chilean educational system is an interesting case to study. For those countries exploring expanding parent choices and academic accountability, Chile represents a case with a universal and enduring voucher system (Portales Olivares, 2012; Quaresma & Valenzuela, 2017). The Chilean case is thus an exceptional one, with the potential to overcome the theoretical and empirical limitations of the partial introduction of quasi-markets. The country serves as a critical reality check (Vergier et al., 2016) of the market assumptions regarding effectiveness in education. The high level of private provision in education in Chile makes it possible to test the notion of private effectiveness over public service in education. Also, the prevailing socioeconomic segregation provides a useful context to study the schools capacity to redress social inequalities.

Furthermore, the Chilean case illustrates the transition from parent choice based on weak public scrutiny to high-stakes consequence public accountability. For critical sociology, the Chilean case forms a good example to analyse the impact of high-stakes testing on teacher identity and school organisation, and more deeply on the concept of education promoted by a market oriented system.

1.5 Aim of the project

1.5.1 General

This study focuses on school effectiveness within a market-oriented system. One of the most important aspects that this thesis brings to the analysis is the inclusion of context as a determinant variable in explaining school effectiveness and the possibility of the school becoming responsible for its academic results. It is argued that the analysis of school effectiveness needs to consider the policy environment and the ideological assumption that sustains the intervention.

To accomplish a holistic and pragmatic evaluation of school effectiveness in Chile, this approach is based on two perspectives -- a macro and micro analysis. Using both perspectives facilitates the development of a holistic approach for studying effectiveness in socioeconomically disadvantaged schools, and for evaluating the market design of education policy. Fundamentally, the notion of school effectiveness is the focus of analysis.

Ultimately the research was able to answer the following questions:

1. Does the structural context affect the equity and effectiveness of schools in Chile?
2. How does the SES context affect school processes, teacher practices and teacher identity?
3. How does the combination of a quantitative approach in studying the effects of context on school outcome and a qualitative enquiry of principals and teachers in disadvantaged schools enhance the study of school effectiveness in a market oriented system?

1.5.2 Specific aim

The specific aim of this research is divided into quantitative and qualitative research approaches. The scope of the aim is limited to the study of school effectiveness at the primary level in Chile, considering the socioeconomic composition of schools and the impacts of new accountability measures on school processes and teacher identity.

1.5.3 Quantitative research questions.

Determining the level of the SES compositional effect and the extent of its impact on school achievement is an essential and substantial component of understanding and measuring the level of school effectiveness correctly. This evaluation seeks to establish the level of SES compositional effect within and between schools with regard to a reformed voucher scheme. The following sub-objectives were developed sequentially. Each stage represents a necessary step toward the next more complex analysis; however, each stage also represents valuable information gained about the Chilean context. From this methodology and particular methods, I respond to the following objectives: (1) the actual variance allocated to student intakes and school level variables on student math achievement (2) the differential impacts of effectiveness considering the student and aggregated SES characteristics (3) the influence of schooling policy variables on math achievement using an analysis of SES compositional impacts.

The following presents the research questions for each stage of analysis in sequence.

The first sub-objective involves an analysis of mathematics variance allocated within and between levels, with the following research question for this stage:

1. What is the relative importance of each of the relevant levels of the educational system in relation to the total variance structure of mathematical attainment?

The general research question for the second sub-objective is:

2. To what extent does the compositional SES effect vary by type of school?

The third sub-objective seeks to **determine the degree of equity of mathematics achievement distribution**. A fundamental goal of this step is to differentiate school effectiveness after controlling for family and for aggregated SES background and selection mechanisms. Here the research question is:

3. What are the impacts of different types of schools on effectiveness and equity, after controlling for SES composition effects and student selection policy?

1.5.4 Qualitative Research questions

The qualitative part of the study responds to the necessity to complement and make a profound effort to understand school effectiveness in a market-oriented system. Three schools in disadvantaged areas are included in this study with the purpose of challenging the prevailing idea of school effectiveness, which discounts particular conditions or circumstances, especially those that are conflictual and dynamic.

Thus, to run a more contextualised analysis of school potential, the accountability process must take into consideration how SES composition affects the internal dynamics of the ongoing everyday activities of teachers and principals. SES composition affects, both directly and indirectly, not just school results, but also how principals and teachers make sense of policy reforms. The purpose of including schools with highly disadvantaged contexts as part of the study is twofold: It amplifies the methodological concern over capturing a dynamic phenomenon, and eliminates the theoretical restriction of school effectiveness research that fails to connect achievement with particular social and educational configurations (Thrupp & Lupton, 2006). Examining school practices in the context of disadvantage helps to understand the connection between setting and student achievement, and how this connection works (Angus, 1993).

The qualitative research questions are organised into two broad streams, based on different and complementary perspectives. One set of questions is designed to provide a visualisation and an impression of the reactions and dynamics associated with school socioeconomic composition. A description of school life serves to distinguish the institutional logics that support the fundamental dynamic of principals and teachers in defining success in disadvantaged socioeconomic schools.

The second set of research questions centres around critical sociology and seeks to unravel how schools respond to accountability and market policies. These questions focus on teacher identity; on the pressure created by extreme forms of accountability and performativity; on the types of managerial governance within schools; and on the external environment. This orientation represents an attempt to recognise the specific practices and dilemmas that principals and teachers confront in times of constant demand for performativity and competition, when working in a vulnerable context. These questions are:

1. What are the distinct institutional logics and school practices that are used to define level of achievement, with respect to comparable peers?
2. How do these schools explain their distinct performance? What are the principal and manager group discourses? How do teachers account for the results of their practices, and how, if at all, do their accounts differ from those of school leaders?
3. How do individual schools and teachers explain the current processes of competition and performativity? How do individual schools respond to the current system of accountability and competition policies? Are there differences? Do some schools know how to play the game? Do some schools refuse to play the game?
4. How do teachers define the current style of teaching and management within the SEP program? How has the accountability process affected teacher identity? Effectiveness? Morale? Are there signs of resistance to this regime? If so, of what kind(s), and of what significance?

1.6 Methodology

This research applies a mixed method approach; it not only includes the big picture of the macro processes in the Chilean educational system, but also incorporates relevant dynamic micro processes to illustrate the agency of individual actors within schools, as well as policy contradictions and long-lasting educational effects. The specific design is defined as an explanatory sequential design (Creswell, 2015a, 2015b). The integration of data is achieved at two specific moments of the study; first, when selecting interesting qualitative case studies from quantitative analysis, and then during the discussion of the findings according to both research approaches (Fetters, Curry, & Creswell, 2013).

The quantitative approach uses a large-scale cross sectional data merged from different Ministry databases. Using the 2012 nation-wide data of 4th grade students, this research includes a comprehensive range of variables at two levels; student intakes and school characteristics. Using mathematics achievement as a dependent variable and school SES as the main predictor, school effectiveness and equity of academic distribution are analysed. The analysis is performed using a two-level Hierarchical Linear Model (HLM) (Goldstein, 2003; Hox, 2002; Snijders & Bosker, 2012). Four models are specified using *Mplus 7.4* (Muthén & Muthén, 2014). The models include random intercepts and random slope analysis.

The second part of research employs a qualitative approach. Using three case studies, described as three highly socioeconomically disadvantaged schools, the qualitative study conducts 25 semi-structured interviews with principals and teachers. In total, nineteen teachers, 3 principals and 3 head teachers were interviewed. The data were collected in Chile over a period of two months in 2015. Through grounded theory methodology (Corbin & Strauss, 2015) the study codifies principal and teacher responses to construct axial and selective analysis. The research uses the software programme Nvivo 10, to make comparisons, queries and matrices of analysis (Bazeley, 2007).

1.7 Significant of research

In the area of school effectiveness research, including a policy environment with a long-standing market system represents an empirical opportunity to improve the theory. While its findings could have a significant impact on any educational system that incorporates market principles and competition, knowing more about how successful schools work effectively

with the disadvantaged context of their pupils will extend the applicability of school effectiveness theory since it will highlight effective educational practices in vulnerable contexts with disadvantaged students.

This study is therefore of use for policymakers and practitioners. Taking into account the system configuration and how it impacts school classification and the definition of efficacy, policymakers can evaluate the effects of policy oriented to promote the market, on both academic gains and on the equity in distribution of school success. This research is also significant for education providers and administrators. Through offering information related to school organisation and how schools can succeed in socioeconomically disadvantaged contexts, this study adds practical examples of the importance of teacher sensemaking and school organisation and leadership, relevant to the concept of pedagogical care, and to democratic and systematic school organisation.

This research also provides a good case study for researchers who are seeking to integrate quantitative and qualitative research approaches (Johnson, Onwuegbuzie, & Turner, 2007; Tashakkori & Teddlie, 2010). The level of integration and the degree of combination of both approaches represent a useful contribution to the so-called third research paradigm (Johnson et al. (2007) and to the use of more complex research questions.

Beyond the specific aims of this research, this study contributes to the necessary discussion of equity and social justice in education. The school is a social institution that is under increasing pressure for academic results; however, its contribution to social cohesion and to a democratic space has not been sufficiently considered or discussed. The Chilean case represents a political debate about what constitutes the optimal paradigm in education: one that maintains market principles (with corrections), or a new model that assumes social rights and public education as central (Donoso-Díaz & Castro-Paredes, 2017).

1.8 Outline of chapters

Chapter two examines the relevant literature in three parts. The first part presents the Chilean context, discusses the empirical evidence of voucher systems on school effectiveness, and introduces one educational reform to the system. The second part argues the contribution of educational effectiveness research and the use of multilevel methodology.

The information in this part of the review provides a background for the quantitative study. Finally, a critical discussion associated with the long-lasting effects of the accountability process on teacher identity and school functioning sets out the basis for the qualitative research.

Chapter three presents the methodology used in the study and justifies the mixed method research. The chapter is divided into three sections. The first section discusses the general research approach (defined as mixed method) and presents the arguments and main classifications. The second section introduces the quantitative part of the research, including a definition of the methods, data and planned process of analysis. The third section details the qualitative research, providing an explanation of the chosen strategy and of the rationale behind the selection of the three case studies.

Chapter four presents the macro analysis of the Chilean educational system. The chapter is divided into two sections. The first section presents a description of the magnitude of the contextual variables in the schools, such as achievement distribution by SES and selection mechanisms employed by the schools. The second section presents the multilevel analysis. Through different model specifications, this segment documents the SES compositional effect in Chile, examining its impact within and between schools.

Chapter five focuses on a qualitative analysis of the three schools that are used as case studies. The chapter is divided into three parts. Section one describes, explains and compares school success according to principal and teacher sensemaking. Section two is oriented toward deciphering how schools react to the pressures of accountability, and to determining the impact of those pressures on the school and on teacher identities. The final sections summarise the most general findings, with both research questions considered.

Chapter six offers a discussion of the main research, synthesising the quantitative and qualitative findings. The analysis and discussion follow the order formulated in the methodological design. Starting with a contextualised discussion of the quantitative research results, an argument is presented concerning the impacts of SES composition on school effectiveness and on the equity of academic achievement. This chapter also argues the qualitative impacts evidenced in principal and teacher sensemaking attributed to the new system of accountability introduced by the adjusted funding system. The last section

integrates the quantitative and qualitative results and discusses the notion of effectiveness and capacity and the obligation of schools to respond to accountability measures.

Chapter seven presents the conclusion and a reflexion on the thesis. The chapter highlights the main findings, discussing and concluding the theoretical, methodological and policy implications, not only of the adjusted funding mechanism in the Chilean system, but also of the voucher system and its underlying assumptions. The chapter acknowledges the limitations and contributions of the study and suggests further directions for future research.

2. Chapter Two: Literature Review

2.1 Introduction

This chapter examines the relevant literature in three parts. The first part presents the Chilean context, including the principles of the voucher system, as a necessary background for the next part, which presents a discussion of the empirical evidence that exists in Chile with regard to the relationship between socioeconomic segregation and levels of school effectiveness. Although there is ample research related to socio-economic segregation in education, the implications of those factors on school effectiveness have been missed. Following a review of the empirical evidence is an exploration of the possibilities for rectifying inequalities in the context of one of the most significant adjustments to the voucher system in Chile, from 2008.

The second part of this chapter reviews the contributions of Educational Effective Research (EER), as well as the main criticisms of that agenda. One of the main contributions from EER acknowledged by this research is the use of multilevel analysis for studying the impact of the school on student achievement. At the same time, this research takes into account the fundamental criticism that EER has received related to lack of contextual analysis by including the study of socioeconomic compositional effect as a means of overcoming this limitation. The information in this part of the review provides a background to the quantitative study.

The third section of this chapter introduces a critical discussion associated with the side effects of the current policy of accountability under a market-oriented system. A review of critical sociology in the study of educational policy helps to visualise the micro and long-lasting effects on equity and comparisons of school effectiveness. The final discussion in this chapter emphasizes these effects and explains the need to include teachers and principals in disadvantaged contexts when evaluating policy reforms. The findings reviewed in this part of the literature serve as background for the qualitative study.

2.2 The Chilean Voucher System

2.2.1 Voucher principles and criticisms.

School vouchers are defined in the OECD (2012b, p. 3) as “certificates issued by the government with which parents can pay for education of their children at a school of their choice”. In the Chilean educational system, a school voucher is a payment based on student attendance. The State makes direct payments to the schools, not to the parents. The vouchers are intended to give parents the autonomy to choose schools that meet their needs and preferences. This government funding is available to both public and private schools, thus creating a market-oriented system.

A review of the literature indicates that vouchers are one of the most controversial of all the different educational policies aimed at improving the quality of schooling (Mizala & Torche, 2012). Since its instauration, the intrinsic economic logic that has supported its principles has been subjected to discussion and analysis. In order to fully understand the political context of this reform, it is important to note that this market-oriented system was part of the stringent social and economic reconstruction instigated by Great Britain and the United States in the 1980's. Both of these nations encouraged the introduction of policies based on a market economy that would enhance competition and provide a choice for parents; however, the UK did not apply a voucher system, and the use of vouchers has been reduced in some USA states. In contrast, the Chilean nation implemented this ideology in all social spheres; as a result, the privatisation of education took place in record time (Torche, 2005). The idea and design was implemented in 18 months (Gauri, 1998) under the military government of Augusto Pinochet.

The most fundamental principles of educational voucher systems are freedom and competition (Friedman & Friedman, 1982; Moe, 2001, 2008). According to Moe (2008), the new expression of freedom is the notion of choice itself. It assumes that the market will promote schools that provide what parents and students demand. In this context, parents have the power to switch, just as they can choose or change their choice of any other goods as consumers in a capitalist economy. This parental power creates the need for schools to compete with one another for support (Moe, 2001). As Hoxby (2003) argues, “If a school

could raise a student's achievement while spending the same amount as the current school, it would be expected to draw the student away from his or her current school.” (p. 288)

According to Friedman and Friedman (1982) a top-down control system does not constitute a serious attempt to take advantage of choice and competition. Some authors assert that a conventional paternalistic governmental intervention exists in education, whereas Friedman's economic logic, implicitly grounded in respect for fundamental individual values, lacks this paternalistic government vision (Moe, 2001). According to proponents of the voucher system, expanding educational choices and stimulating competition among schools through the use of vouchers will enable poorer families not to stay trapped in failing institutions and will spur competition between public and private schools, making them more responsive to families and students, increasing students achievement and improving the effectiveness of all schools.

In different countries where the voucher system has been applied, both its design and range varies enormously (OECD, 2012b). For example, in some nations it is only oriented toward and applied for disadvantaged families, while other countries attempt to introduce school choice and competition more broadly. In Chile, the voucher system is universal and its design has been defined as paradigmatic (Torche, 2005). According to González, Mizala, and Romaguera (2004) the structure and the implementation of the voucher system in Chile has four aspects. First, the voucher is delivered directly to the schools as a function of student enrolment and attendance. Second, the voucher is applied universally, with only private fee-paying schools being outside of the system. This aspect differs in countries such as Germany and some USA states, which restrict vouchers to eligible schools or students with disadvantaged backgrounds (OECD, 2012b). Third, the voucher is applied to every student, with the same amount of funding for all students, irrespective of their social background. This aspect was modified in 2008 when the Chilean government passed the *Preferential Education Subsidy* law (SEP, in Spanish). Fourth, the vouchers did not constitute the school's total funding, and parents were allowed to make additional contributions to the school¹. This system, applied in 1994, was known as “shared financing”, and allowed primary and secondary private voucher schools to supplement their resources via parental fees². Two

¹ Public schools can obtain additional funding directly from their municipalities and also have the option to obtain funds from the regional government to finance school investment (Gonzalez et al., 2004).

² The public schools only can charge additional fees at the secondary level, though few of them do so. Additionally, there are some restrictions for private voucher schools; for example, there is a limit to the amount they can charge, (and it is reverse with the government fund, but not greater than 35 per cent).

elements (flat vouchers for every student and shared financing), have been pinpointed as principally responsible for school segregation, as explained in the information that follows.

The Chilean design exhibits some particular differences from, for example, the USA design. One difference can be seen in that the USA government does not give a tuition certificate to the families, but rather pays the subsidy directly to the schools that the students choose (Torche, 2005). Another difference is the Chilean nationwide system, which contrasts with only partial and particular implementation in the US. Despite these differences, the Chilean case remains useful to voucher debates, owing to its scale and scope. As Portales Olivares (2012) states, the intense competition in Chilean schools provides a useful "test case" for examining the impact of expanded voucher systems elsewhere. Specific design options and policies, such as whether financial incentives are limited only to disadvantaged students, are crucial to exploring, for example, the reasons for the levels of socio-economic segregation within the system (OECD, 2012b).

The development of a market oriented system through vouchers in the field of education has not been exempt from criticism, and has produced broad and deep concerns, especially with regard to impacts on social equity. Vouchers have also been implicated in questions related to student achievement. One dominant opposing view argues that vouchers skim off students with higher performance and direct more socio-economic resources to improve their outcomes, without significantly improving the overall educational system (Chakrabarti, 2013; Elacqua, 2010; Ravitch, 2010). According to critics, the economic principles of the market, i.e., choice and competition, cannot ensure other benefits that the educational system should promote, such as social inclusion.

Taking into account criticisms of the voucher system's effects on equity and achievement, as well as its difficulties and limited scale of operation in the USA, Moe (2008) has concluded that the impacts of vouchers and their effectiveness depends on the structure of implementation. When there are failures in terms of educational attainment and social values, it is not the voucher system itself that is not working properly, but rather that the particular structure for implementing the system has not been designed to take optimal advantage of particular circumstances and situation. Across countries of application, empirical evidence is

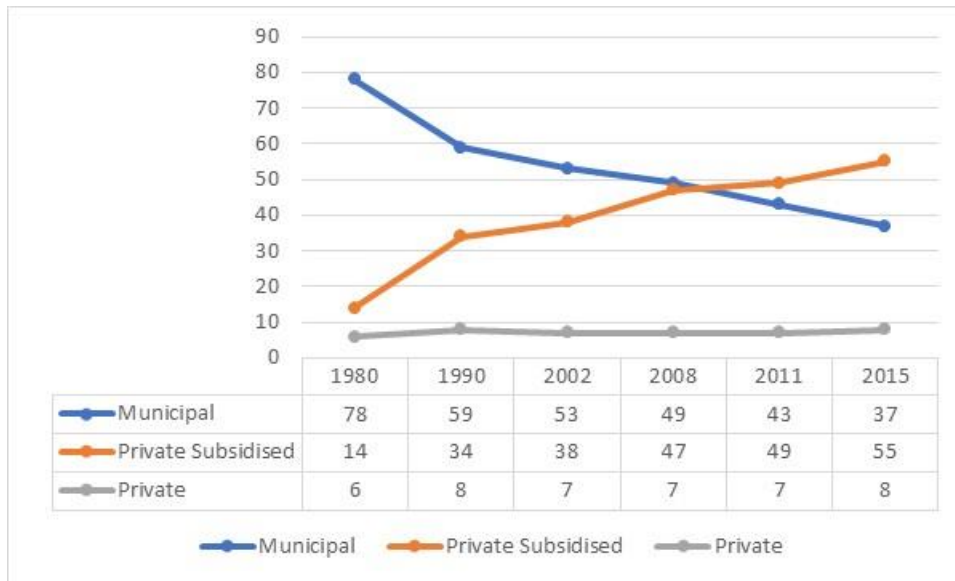
mixed (Waslander, Pater, & Maartje van der, 2010), although political-educational analysis tends to be critical of aspects that reflect equity and quality in educational processes. The following presents the Chilean case and empirical evidence of its impact. A more critical literature follows thereafter to broaden the spectrum of analysis.

2.2.2 The Chilean schooling system

According to several authors (Elacqua, 2009; González et al., 2004; Mizala & Torche, 2012; Torche, 2005), a description of Chilean schooling reform must consider many important aspects to fully understand the current process, including the obvious crucial role of history. This section discusses some fundamental issues that have a decisive impact on the current level of socio-economic segregation, and the overall level of achievement of the primary and secondary Chilean educational system. It is important to keep in mind that the reforms began in the early 80's, because the changes instituted by the former military government had an enormous and lasting impact. The dictatorship (1973-1990) significantly transformed all social spheres, particularly the educational system. Three facets of the Chilean system will be introduced next: The general system, the process of decentralisation, and the type of funding.

In the 1980's, the type of educational system in Chile changed from state centre to providing parents with the option to choose their children's schools (Torche, 2005). Proponents of this model aimed to promote more competition among primary and secondary schools, and to encourage and improve the efficiency and diversity of the system (González et al., 2004). As a result, the private sector proportion of the market increased sharply, to the detriment of public school enrolment, which dropped from 78 per cent in 1981 (Mizala & Torche, 2012) to 37 per cent in 2015 (MINEDUC, 2015). The figure 2.1 clearly demonstrates this development.

Figure 2-1: Enrolment by School Administrative Categories, percentage, Primary and Secondary Education, 1980-2015.



Source: Ministry of Education, Chile.

To fully understand this outcome it is necessary to be aware of the four types of school that exist in Chile, each with its own administration: Municipal schools, Private Subsidised schools, Private fee-paying schools and Corporation schools³. Municipal schools are public schools, administered by local government. In general, municipal schools attract the most disadvantaged students, and are found across the country in both urban and rural locations. In contrast, private subsidised schools attract students mainly from middle and upper middle class families. Student enrolment in both primary and secondary schools in this sector has increased significantly from 14 per cent in 1980 to 55 per cent in 2015 (MINEDUC, 2015). Additionally, the reform from state to parental choice allowed voucher schools to operate as for-profit institutions, and by 2008 about 70 per cent of them did so (Mizala & Torche, 2012), creating two sub-types of these schools, for-profit and not-for-profit. For-profit voucher schools account for 31 per cent of the total enrolment, and not-for-profit voucher schools attracted 16 per cent of students in 2008 (Elacqua, 2010). In ideological terms, however, the main idea of reform advocates was to expand opportunities for disadvantaged parents to choose better schools and follow their particular vision of education.

The new plan instituted a profound process of decentralisation in the Chilean educational system, i.e., the shift from a fully centralised system to one in which families can choose

³ Private paid and corporation schools have remained steady over the years.

between public and private subsidised school (Hsieh & Urquiola, 2006). This process of decentralisation was accomplished in four steps: de-concentration, devolution, delegation, and privatisation (Parry, 1997). In the beginning, the Ministry of Education transferred their responsibilities to the Regional Ministry Secretariats (SEREMIs) and to the respective Provincial Services of Education. Next, the devolution process designated the responsibility for providing pre-primary, primary and secondary education to municipalities. To administer these responsibilities, municipalities then either created Departments of Municipal Education or delegated these responsibilities to a Municipal Corporation⁴.

Finally, after the reforms of the 80's, the State became, primarily, the financier, while the market regulated the quality of education (Parry, 1997). In their evaluation of the effectiveness of this process, some researchers state that it has produced a diffuse attribution of responsiveness (A. Mizala, 2007). For instance, while according to Parry (1997), the process of decentralisation was successful from an administrative point of view, Beyer and Araneda (2009b) argue that it has been only a process of de-concentration rather than a real process of decentralisation. Although the first objective of the reform was to ensure that schools respond to local necessities, this aim was never accomplished; at the end, actors felt a responsibility to respond to quality of education instead (Waissbluth, Arredondo, Quiroga, & Diez, 2010).

As previously noted, the impact of this series of reforms was not available for evaluation after 1995, when The National System of Evaluation of Quality of Education (SIMCE) score for each school was first published (González, 2008). Obviously, this undermined the (hypothetical) ability for parents to choose their schools, as well as to estimate the real effect of the reforms on the educational system as a whole. Successive democratic governments made quality and equity the top priority of the public agenda while maintaining the essential features of the earlier voucher reforms (González, 2008; González et al., 2004).

2.2.3 Principal reforms and programmes of Chilean democratic governments

Since 1990, subsequent Chilean democratic governments have implemented different programmes to improve the quality and equity of the educational system (Cox, 2004;

⁴ According to Parry (1997), the municipal corporations were banned after 1988 because they were declared as “not constitutionally desirable”.

González et al., 2004; OECD, 2004). According to Cox (2004), the state shifted its role from a subsidiary to a proactive role "working towards quality objective throughout the system and specific equity related goals" (p. 19). When analysing how public policies in democratic governments were put in place, it is possible to differentiate three main stages.

In the early 90's, public policy oriented its attention towards more remedial and basic issues (Cox, 2004). Clearly, the priorities were to repair the differentiated completion rates (particularly at the secondary level) and to create different programmes in public schools. To achieve this purpose, Chile's educational system experienced a substantial increase in public funding, which more than tripled between 1990 and 2003. To illustrate, different MECE⁵ Programmes were applied to primary and rural education to provide new investment in material input, and innovations in pedagogy and school management were developed (Cox, 2004). Moreover, a new regulation was enacted in relation to the teaching profession that was applied mainly to teachers in the public sector⁶.

A second recognised stage, in the middle of the 90's, according to González (2008) was a series of attempts to harmonise the market and supply side. For instance, the voucher amount was altered depending on the type of education provision⁷ and "shared financing" was enacted to complement the funding, especially in private voucher schools. Additionally, other significant reforms were enacted, such as updating curricula and the total of hours of schooling⁸. Despite this series of programmes, the relationship between SES and academic achievement was not seriously taken into consideration. The first measure intended to encourage school improvement was the National Evaluation System of Publicly financed Schools (SNED in Spanish), which incorporated financial incentives for the teacher in the 25 per cent best-performing schools. This system divides all subsidised schools into

⁵ MECE (*Programa de Mejoramiento de la Calidad y Equidad de la Educación Preescolar y Básica*) was a systemic intervention in primary education to upgrade the conditions, processes and outcomes of municipal and private subsidised schools through investment in material inputs and innovations in pedagogy and school-management. This program was launched in 1992 with the financial and technical support of the World Bank (Cox, 2004).

⁶ There are some concerns about this, because this new legislation was considered a rigid piece of labor legislation that included a pay scale dependent mainly on experience, and made it impossible for principals to fire teachers (Cox, 2004).

⁷ For example, the voucher is higher in secondary education than in primary education, and rural schools receive more than urban schools. These adjustments were made after the 1990's.

⁸ According to OECD (2012), Chile ranked first in compulsory instruction time per year among OECD countries, accounting for 1083 hours per student from 7 to 14 years of age.

homogeneous groups to compare schools that have similar student bodies⁹. The successful schools were classified as academically excellent and teachers received a monetary bonus for two years. According to OECD (2004), this left a severe problem with equity, with the most disadvantaged students still receiving the same amount of funding compared to those with a better socio-economic background.

At the beginning of the new century, the educational system in Chile was assessed as grossly unfair (BBC, 2011) and all educational changes came under active and critical social evaluation, which defined another transition in the educational system. The effects of SES on equity were revealed and created public concern, after well-organised secondary student protests that paralysed the educational system in 2006, and massive secondary and tertiary student protests in 2011 (Cristian Bellei & Cabalin, 2013). One of the most important reasons expressed by these movements was the belief that the current educational system did not improve academic achievement, especially for those who attended vulnerable schools, as the gap in achievement between those schools and better performing schools remained steady throughout time. At that point, the movement increased toward deeper changes in the educational system, which were accomplished to some degree in 2008 when the government began to modify the rules and regulations of the voucher system (Elacqua & Martinez, 2011). During this year, the Ministry of Education enacted the *Preferential Education Subsidy* (SEP, in Spanish), which recognised that it costs more to teach disadvantaged students and thus introduced an extra per-pupil subsidy for students classified as vulnerable, mainly those with low socio-economic backgrounds (Elacqua, Martínez, Santos, & Urbina, 2012). The Preferential Education Subsidy is considered the first reform to the voucher system in favour of disadvantaged students.

To summarise this section: The basic idea of early reform was to make schools compete for enrolment by allowing the parent to choose their children's school, thereby improving the educational system as a whole. After the return of democracy in Chile, although early governments focused mainly on development programmes to compensate for inequalities, the "essential features of the national voucher system have remained in place for almost three decades" (Elacqua et al., 2011, p. 241). Toward the end of the first decade of the 21st century, however, the government implemented a significant adjustment to the system that facilitates

⁹ The SNED has been applied since 1996; however, it has not be used in the Chilean research.

the possibility of change to the persistent inequality. All these events attest to the value of assessing the changes following a massive reform in a developing country and the transition from a public centralised system to a more privatised form with some family options (González et al., 2004; Hsieh & Urquiola, 2006; Mizala & Torche, 2012; Torche, 2005). The following section discusses further implications of these reforms; considers the current evidence and research; demonstrates the need for more research and provides a sketch of the approach to be adopted (detailed discussion of methodology is found in Chapter Three).

2.2.4 Evaluating the voucher system.

Taking into account the multiple transformations and the current state of the educational system, the following review discusses two central phenomena. First, an evaluation of the level of socio-economic segregation after the implementation of one of the most significant adjustments to the voucher system in Chile is analysed. Second, an evaluation of the relative efficacy of the different types of schools and their differential impact according to the student body is discussed.

2.2.5 The level of socio-economic segregation in the Chilean educational system.

Most researchers in Chile have recognised that socio-economic segregation in the educational system is strongly evident. The impacts that the voucher system has had on socio-economic segregation have been widely discussed, with the conclusion that there is still a high level of socio-economic segregation in the student body. Over time, the literature has developed a more detailed view of this phenomenon. According to the OECD (2010), Chile has one of the most privatised educational systems in the world. Studies suggest that this educational system has exacerbated the socio-economic stratification between public and private schools (Elacqua, 2012; Elacqua et al., 2012; Mizala & Torche, 2012; OECD, 2012b). For example, an analysis of 4th grade student enrolment in 2012 reveals that public schools have almost 75 per cent of their total enrolment from the two first quintiles (see Table 2.1), whereas private-voucher schools have almost 75 per cent of their total enrolment from the third and fourth quintiles. In the case of private fee-paying schools, nearly all the students come from the wealthiest quintile.

Table 2-1: Enrolment in school sector by family SES quintile, 4th graders, Chile 2012.

	Family SES* by quintile	School sector by per cent			Total
		Public	Private Subsidized	Private fee	
Low	1	21	4.9	0	11.1
	2	52.6	17.5	0	30.4
	3	24.1	46.1	0	33.8
	4	2.4	29.2	2.5	16.4
High	5	0	2.2	97.5	8.3
Total		100	100	100	100

*Sch_SES comprised five categories: 1- Low SES; 2- Middle low SES; 3- Middle SES; 4- Middle high SES; 5- High SES.

Acknowledging this level of segregation, Elacqua (2009) argues for a more adequate differentiation to incorporate diversity within the private voucher sector. The author states that private subsidised schools have been considered as an aggregate category where all schools are mostly identical. Hence, one of the first criticisms of the findings is that few researchers have distinguished school segregation between sectors, and within the sector (Elacqua, 2009; Mizala & Torche, 2012). To illustrate, the private subsidised sector can be divided into two broad categories: for-profit schools, and not-for-profit schools. It is possible to separate the last category into sub-divisions: lay (secular) and religious. Additionally, the private sector can be defined according to organisational scale: independent (one school), small franchise (two or three schools) and large franchise (more than four schools) (Corvalan, Elacqua, & Salazar, 2009). Taking into account these classifications, Elacqua (2009) specifies that vulnerable students are less segregated among religious (Protestant & Catholic) schools than among for-profit and secular schools; and for-profit independent schools display higher levels of selectivity than other school sectors. Therefore, notwithstanding that voucher schools serve a broad range of populations, individual voucher schools reveal high homogeneity in the socio-economic status of their student body (Mizala & Torche, 2012).

Considering the longitudinal study of school segregation in Chile, J. Valenzuela (2008) states that there is a high level of segregation of Chilean students (measured by the Duncan index¹⁰) ranging from 0.45 to 0.53¹¹, and showing a slight but continuing increase from 1998

¹⁰ According to Valenzuela, Bellei and de los Rios (2014), the Duncan index “estimates the percentage of disadvantaged students (low-SES) that need to be transferred between schools in order to have a homogeneous distribution among all schools of a given territory” (pp. 223).

¹¹ According to the author, considering student at level 4, the segregation in public school by Duncan index is 0.38, higher in private subsidized schools (0.53) and extreme between private schools (0.98).

to 2006. This index uses a range from 0 to 1 where the value 0 means no segregation, and 1 means absolute inequality; values of up to 0.6 are defined as high segregation. The final result of the study describes socio-economic segregation as very prevalent; as having increased slightly in the last decade; and as being comparatively greater among primary students than among secondary students. To achieve a more inclusive and diverse student body, J. Valenzuela (2008) argues that vulnerable students¹² should enrol more often in middle-class schools, such as private subsidised schools, especially those that charge additional fees¹³. In another study, using data from PISA-2009 (language) and comparing 64 countries, C. Bellei (2013) revealed that Chile had one of the lower social and academic inclusion index scores, as opposed to Finland, which has one of the higher levels of inclusion of both measures. This equity gap has increased in the last decade, and is higher in primary than in secondary school.

The extent of segregation in applies not only to socioeconomic variables, but also to academic criteria. Treviño, Valenzuela, and Villalobos (2014) state that segregation between schools is higher than within schools. SES variables are more important in the former, but in the latter academic variables seem to reflect better criteria for internal grouping. Relevant to this finding, in the Chilean educational system, a double and successive segregation begins in early years and has widened by year 10. According to the main findings in this research, academic segregation is an inefficient measure for learning achievement. In fact, the schools that applied educational segregation have lower SIMCE mathematics and language test scores. For instance, with regard to language, within-school segregation is associated with a loss of 10.5 per cent of the standard deviation of SIMCE scores. Moreover, the effect of academic segregation is unequally distributed. The students located in the middle of the band (1-4), according to prior academic achievement and SES scale, bear the major burden. This suggests that within-school segregation amplifies academic difficulties for students at the start of the secondary level.

The OECD (2012b) report states that while the level of public funding for privately managed schools is related to the magnitude of socio-economic stratification, the design of funding schemes can also influence the degree of stratification. The Chilean educational system

¹² According to Valenzuela (2008), to satisfy the idea of a more heterogeneous student body, the 53.4 per cent of the vulnerable student should be translated to school with a low concentration of this type of students.

¹³ Since 2006, these schools must enrol 15 per cent of vulnerable students under a scholarship scheme. However, selection is still pervasive, and there is a lack of enforcement of this aspect.

shows high socio-economic stratification in privately managed schools, even after accounting for the level of public funding invested in individual schools. To illustrate, according to the PISA index of economic, social, and cultural status (ESCS), attendance at privately managed schools comprises 80 per cent of Chile's most advantaged quartile of students, and only 38 per cent of the country's least advantaged quartile. This difference of 42 percentage points in the Chilean system is 20 percentage points greater than the OECD average (OECD, 2012b). Since the type and quantity of funding alone cannot account for the high attendance of advantaged students in privately managed schools, the report also explores other educational variables that may help to explain the enrolment differences, such as the students' average reading performance; the quality of the school's educational material; the degree of autonomy employed in curriculum development and assessment; and the disciplinary climate of the school. Nevertheless, after including these variables in the study, the OECD (2012b) measures still indicate a high probability that advantaged students will continue to attend privately managed schools. Additional research conducted over time offers some explanations for this ongoing trend.

Researchers have identified three leading causes as contributing to the existing level of segregation. The first and one of the main causes is the type of funding. Because the Chilean educational system operated for nearly 30 years with a uniform, flat voucher, i.e. a standard amount for every student regardless of his or her socio-economic background¹⁴, private voucher schools favoured locations in more urban settings and in big cities, thereby limiting the likelihood of attendance by students from particular groups that they did not want to include in their enrolment. Relatedly, since 1994, private voucher schools were allowed to charge parents an additional fee, a mechanism known as "shared financing". As Elacqua (2009) and J. Valenzuela (2008) stated, using shared financing resulted in forming the student population on the basis of the family's ability to pay. Thus, the additional fee type of funding and the chosen locations for the schools have been identified as two of the most important factors that contribute to the level of segregation in the Chilean educational system.

The second cause identified as promoting segregation in the educational system relates to the actual boundaries of parental choice (Elacqua, 2012; Elacqua & Martinez, 2011; J. Valenzuela, 2008). One of the most basic principles of the universal voucher system is to

¹⁴ According to Makovec, Mizala and Barrera, (2010) the monthly per student subsidy amounted to approximately US\$61.5 for primary school and US\$73.3 for secondary schools in 2006.

allow parents to choose their children's schools. Obviously, in order for the choice to be meaningful, it is crucial to have information available to parents; but circumstances have often impeded this process. The official results of SIMCE standardised tests were not made public until 1995, and even then, that information, although public, was not easily accessible to parents. Parents were not able to use this official information to make comparisons and inform their choice of available schools. In addition, disadvantaged parents may lack the ability to make "good" informed choices (Elacqua, 2009); and in general, parents appear more likely to choose a school based on the class composition of the student body than on academic objectives¹⁵ (Verger et al., 2016). Both of these phenomena are confirmed and reinforced in the international literature (Ball, 1993). In their analytical review of empirical research on market mechanism, Waslander et al. (2010) stated that while the rational choice of a parent is only one part of the decision, many other cultural and social aspects play a crucial role on parental decisions.

Indeed, parental decisions tend to reinforce the existing differences in the social composition of families, with disadvantaged parents choosing local public schools¹⁶ whereas better informed middle-class parents are more willing to pay and travel large distances to choose the best available option (Elacqua & Martinez, 2011). According to the OECD (2012b) report, in the case of the Chilean voucher system, the quality of the schools' educational resources in privately managed schools does not appear to be related to advantaged student attendance. The reasons for the persistent preference of parents for privately managed schools may be more accurately attributed to the pervasive difference in social classes and continued socio-economic differentiation. Parents in Chile tend to be more concerned with peer effect on the student body and other non-academic school characteristics. Hence, private voucher schools respond to this parental concern by working to attract families with higher socio-economic status to minimise expenditure and maximise profit, as well as considering academic results (Hsieh & Urquiola, 2006). The relationship between this type of parent choice and school composition was reinforced as a result of the biased measure of school effectiveness employed by the Chilean system. For many years, the Ministry of Education displayed only the average score of the national test, without applying any adjustments for socioeconomic factors or adding value-added measures. In recent years, the Ministry of Education has finally

¹⁵ However, Elacqua and Martinez (2011), reviewing 2003-2009 data, conclude that, in general, "*parents have become more informed consumers of education*" (pp.15).

¹⁶ This aspect became problematic due to the high level of urban segregation that exists in Chile.

introduced a new form of school classification, although without including multilevel analysis (E. San Martin & A. Carrasco, 2012; Troncoso, Pampaka, & Olsen, 2015).

The student admission process constitutes the third major case of the increasing level of socio-economic segregation in the Chilean schooling system (Macovek, Mizala, & Barrera, 2010). In contrast to public schools, which must accept all students¹⁷, private voucher schools utilise certain screening mechanisms to select students based on academic requirements, religious orientation and fees. This process of admission becomes more complex for parents to negotiate when high-quality alternatives are scarce and oversubscribed (Elacqua & Martinez, 2011). To illustrate, in the case of Catholic schools, Elacqua and Santos (2013) state that 23.5 per cent of schools select students according by ability only; another 10 per cent select according to student ability and parent interviews; 11 per cent of schools select by student ability and religious issues; and 24 per cent include student ability, parent interviews and religious issues in their selection criteria. The private voucher school system of selection favours students from advantaged families while relegating disadvantaged students to the public schools (Hsieh & Urquiola, 2006), a process that Campbell, Proctor, and Sherington (2009) refer to as “residualisation.” This situation persists in spite of regulations and modifications pertaining to the admission process, such as the requirement for all private voucher schools to have at least 15 per cent enrolment of vulnerable students, and the mandate not to apply admission criteria before grade 6. Schools have consistently failed to apply these rules. In effect, the market created by voucher private schools produces a mechanism (Gewirtz, Ball, & Bowe, 1995) through which instead of the school being chosen by the parents, the aspiring parents and students are “chosen” by the school (Campbell et al., 2009).

In conclusion, this combination of factors -- the type of funding under the voucher system scheme, parental choice, and the process of student selection by schools -- results in a pronounced level of socio-economic segregation in the educational system. Over time, there had been little reduction in educational stratification in spite of a series of adjustments and new programmes to the Chilean voucher educational system (Torche, 2005). In this sense, this reproductive social and educational process can be defined as a system of effectively maintained inequality (EMI) (Lucas, 2001). Lucas (2001) states that students move from one

¹⁷ Public schools can only reject students when they can demonstrate that there are no vacancies available.

stratified curriculum to another; that is, when disadvantaged students progress through a quantitative integration (increase in their numbers in school) they must face a qualitative differentiation, as there is no change in their previous social background, which at the very least will have an effect on their chances of making a successful transition. Thus taking into account the entire picture of the Chilean educational system, Torche (2005) characterises it as a significant resource in maintaining qualitative inequality in Chile.

2.2.6 The impact of the voucher system on academic achievement.

Evaluation of the efficiency of the educational system exhibits two main areas of focus -- the effect of school competition on student achievement, and the relative effectiveness of private voucher schools compared to public schools (Mizala & Torche, 2012). The following describes and discusses these two essential aspects of the literature to demonstrate the need for further research in this area.

In the Chilean debate, there is a wide consensus that in terms of educational achievement, school competition has not significantly reduced the gap between disadvantaged and advantaged students. This finding has been acknowledged by most researchers in Chile, where the return on investment in educational achievement is questionable (García Palomer & Paredes, 2010). According to SIMCE and taking into account the public and subsidised schools attended by 93 per cent of students from 1996 to 2012, average scores in literacy skills increased from 246 to 263 (MINEDUC, 2013; OECD, 2004). Although this modest increase could be considered positive, its outcome has not been constant and, more significantly, serves to hide endemic problems. In 2012 an assessment of the national average reading performance revealed that 30 per cent of students in Grade 4 demonstrated an insufficient level of achievement and another 29 per cent displayed only elementary knowledge (MINEDUC, 2013). Additionally, despite the fact that the private voucher sector has grown significantly since 1980, it has neither contributed to diversification with regard to disadvantaged students (Elacqua et al., 2012) nor significantly improved their academic achievement (Hsieh & Urquiola, 2006). For example, according to Elacqua et al. (2011) between 2003 and 2009 only 13 per cent of the new private voucher schools in the Metropolitan Region in Chile had over 25 per cent of their students performing at an advanced level in Math and reading, as measured by SIMCE test results. As a possible explanation of this finding, Hsieh and Urquiola (2006) suggest that private voucher schools

may be responding to the market not by raising their productivity, but rather by choosing ‘better’ (more middle-class) students.

In terms of international evaluations, Chile shows a relatively high quality of education in comparison with other Latin American countries (OECD, 2006, 2009, 2012a, 2015). To compare Chilean educational performance internationally, The Programme for International Student Assessment (PISA) is recurrently used. Chile has participated since 2000 (excluding 2003) displaying a privileged position in comparison with other Latin America countries participating in the evaluations (Argentina, Brazil, Uruguay, Colombia, Mexico, Costa Rica, Peru). In PISA 2012 and 2015, Chile outperforms to all countries in Latin America in all subjects and Chile has shown continuing and significant improvement in Reading. Table 2.2 displays the average score of PISA in all subjects and years.

Table 2.2: Average PISA score by subjects and year, Chile.

Subjects	2000	2006	2009	2012	2015
Reading	410	442	449	441	459
Mathematics	384	411	421	423	423
Science	415	438	447	445	447

However, when Chilean case is compared with other OECD countries, the panorama change. Chile exhibits constantly, lower score than average OECD countries and in Mathematics and Science its results show no progress since 2009. In a more detailed analysis, Castro-Hidalgo et al (2017) evaluate the performance between different types of schools in Chile. The authors stated that considering data from 2009 to 2012 the apparent reduction of performance gap between public and private schools in math is due to a sharper decrease in score of private schools and not by a general improvement of schools.

Regarding equity, PISA reports display a critical condition of Chilean case. In Chile the variance in science performance is strongly correlated to student socio-economic status compared to other countries and economies participating in PISA (16%, rank 9/69). Also, in 2015, the index of social inclusion was one of the lowest among PISA participating countries (54.9%, rank 65/68) (OECD, 2017).

In this sense, another finding in the Chilean literature relates to examining the relative efficiency of different types of schools in the nation. Comparisons of the effectiveness of private voucher schools with that of public schools often show that private voucher schools are not significantly more effective than public schools. Some scholars argue that differences among results can be explained by the type of methodological approach¹⁸ (González, 2008) that was used, and perhaps also some bias present in the comparison. For example, when the schools are compared on the single basis of the SIMCE score, without controlling for any variable, especially SES, the private schools appear better than public schools (Manzi, Strasser, San Martín, & Contreras, 2008; E. San Martín & A. Carrasco, 2012; San Martín & Carrasco, 2013; Troncoso et al., 2015)¹⁹. This is a crucial point with regard to the Chilean educational system, considering that researchers have found that around 60 per cent of the variance in academic achievement can be explained by the characteristics of the student body, especially SES variables (González, 2008; Mizala & Torche, 2012).

Fortunately, the increasing concern about the effects of comparing school performance using raw scores has led to more developed techniques (and modelling). For instance, using a longitudinal study, San Martín and Carrasco (2012), stated that 60 per cent of schools showed a different level of effectiveness depending on which method was used for comparison. Specifically, 44 per cent of private voucher schools improved their position when SIMCE average was used. By contrast, 48 per cent of public schools that were classified using SIMCE average instead of contextual value-added (CVA) showed a decline in their position regarding effectiveness. Similarly, Troncoso et al. (2015) evaluated the level of student progress in schools, and found that pupils in private fee-paying schools do not progress more than those in state-funded schools. Although the researchers did not compare the effectiveness between voucher schools (public and private voucher), their work is significant because it incorporated variables considered to be non-malleable for the schools in their modelling.

Mizala and Torche (2012) state that most studies that have used individual-level data found that students who attend private voucher schools have slightly higher educational achievement than those who attend public schools, net of individual attributes. However,

¹⁸ This aspect will be discussed further in the section on methodological approach.

¹⁹ The reason for this public opinion in Chile is partly because, for many years, the Ministry of Education published the results without reference to the difference between SES and student academic achievement also because public political discourse favours the voucher system.

once the analysis incorporated the association between school-level SES and test scores, the authors found a much stronger association -- twice as much -- in private voucher schools than in public schools: *“For students attending private voucher schools, their educational achievement is more closely related to the aggregate SES of their schools than to their family’s socio-economic resources”* (p. 140). This illustrates the Torche (2005) assertion that the voucher sector became a medium where inequality is actualised and reproduced. In view of this position, it becomes crucial to distinguish the differences between and within sectors (Elacqua, 2010; Mizala & Torche, 2012) and their differential impact on the academic outcome.

Elacqua et al. (2011) and Mizala and Torche (2012) have established that private voucher schools are not an undifferentiated agglomeration. In fact, the impact on student achievement in different types of voucher schools, once it is controlled for SES and different unobserved variables, is significant. For instance, independent for-profit voucher schools produce much the same academic achievement as public schools do. There is a significant difference, however, between not-for-profit schools and for-profit voucher schools as compared to public schools (Elacqua et al., 2011; García Palomer & Paredes, 2010). Controlling results for selection method and religious affiliation leaves the door open to explore other variables that may influence the relative efficiency of non-profit schools. For example, in attempting to determine the optimal size of a schooling operation, Elacqua et al. (2011), found that the schools that belonged to large franchises²⁰ produce better results than independent voucher schools or small franchises. In similarly oriented research, García Palomer and Paredes (2010) attributed differences in efficiency to superior teaching and management methods in large franchise schools.

As has been pointed out, Chilean research has revolved around the socioeconomic impact of the voucher and the differences in achievement between types of schools. The results of the research have generated a consensus that the flat voucher and fee-added system has had a negative impact on inclusion in the nation’s educational system. In contrast, there is no definite consensus regarding the academic advantage of private subsidised schools. More research is needed in order to compare school effectiveness, particularly in light of the introduction of reforms such as the SEP law.

²⁰ The authors have defined the private voucher school franchise as *“Schools that belong to a network of schools that are operated by the same legal private voucher school owner”* (Elacqua et al., 2011, p. 241).

Methodologically, to establish school comparisons, many Chilean researchers have failed to include the significant contribution of those non-malleable school characteristics that on one hand reflect the system configuration – school segregation – and on the other hand offer a real possibility of evaluating a school in a highly disadvantaged context. One of the most important contextual variables that has been omitted is the school’s SES composition background. This contextual variable can affect both a comparison of school achievement and school functioning. A proper study of school segregation must take into account the SES composition of the schools, and examine the fundamental implications that exist in terms of policy evaluation.

2.3 A new evaluation under SEP law.

2.3.1 Main features of SEP law.

The *Preferential Education Subsidy* law (SEP, in Spanish) has been one of the most significant measures of improvement in the context of high vulnerability. In 2008, the Chilean government passed the SEP law, which increases the amount of funds for each vulnerable student. According to some authors, this adjustment has improved teaching conditions in vulnerable schools (CEPPE, 2010; Weinstein et al., 2010) and has also been associated with some reduction of the level of socioeconomic segregation (Elacqua, 2009; OECD, 2012b; Valenzuela Allende, Gomez and Trivelli, 2015).

The SEP law marries new subsidies for socio-economically disadvantaged students with greater school accountability and government oversight of these schools (BCN, 2008). Inclusion in the SEP is voluntary, but all schools eligible to receive the extra funds must sign an **Agreement on Equal Opportunities and Academic Excellence**. Recognising that it is more costly to teach disadvantaged students, the SEP law introduces an extra per-pupil subsidy for each student classified as vulnerable (from a low socio-economic background) by the Ministry of Education (Elacqua et al., 2012). This agreement grants the school over 50 per cent more funding for each priority student and an additional 15 per cent for greater concentrations of student vulnerability. Despite the voluntary nature of implementing the SEP scheme, in 2008 approximately 7400 schools took part in the program, with *99 per cent of*

*municipal schools and 60 per cent of subsidised schools*²¹ participating actively and beginning to receive funds in 2011 (Elacqua et al., 2012).

An important aspect of this law is that schools are classified according to their previous performance, which both determines how much autonomy they have in spending the extra funds, and also prohibits charging tuition fees for priority students (OECD, 2012b). In the new SEP law system of school classification according to recent performance, schools demonstrating a systematic high educational achievement (over the last three years) are classified as "Autonomous" and have flexibility in managing the additional SEP resources. Schools that meet minimum standards or do not reach high standards are classified as "Emerging" and are required to present a plan to the Ministry of Education explaining how they will use the extra resources. Schools with consistent low results are classified as "In Recovery", and a plan for allocating the SEP resources is elaborated by the school and the Ministry of Education, with reduced school autonomy in managing the extra resources (Elacqua et al., 2012).

"In Recovery" schools that do not meet their goal face the possibility of de-registration. In the event that the school is de-registered, students would be relocated to another school that shows better performance; however, if there is no better alternative nearby, there is a high probability that they would then be relocated to a school with similar performance to the one they left (Elacqua et al., 2012). This first high-stake consequence for schools introduced as part of the new Chilean policy was reinforced by the inclusion of Agency of Quality in 2011.

According to CEPPE (2010), increasing the amount of funding for each vulnerable student has improved the condition of teaching in sensitive educational contexts. Much evidence of school effectiveness has demonstrated that one of the most significant factors that contribute to improving student achievement is for schools to focus their resources on improving the teaching process (Mckinsey & Company, 2007; OECD, 2012b; Trevino et al., 2010). Improvement in educational resources has allowed schools to implement many measures that focus on internal improvement processes. For example, schools have invested in technical assistance and training, hiring more teachers, obtaining new equipment for pedagogical

²¹ One point for discussion is how the non-compulsory aspect of the SEP law affects segregation in all schools. According to Elacqua and Santos (2013), approximately 48 thousand priority students were kept out of the program when private voucher schools elected not to apply belong to the SEP law.

support and implementing various support programs such as extra mathematics classes (Elacqua et al., 2012; OECD, 2012b). These measures have resulted in an improvement in teaching conditions in vulnerable schools since 2008; however, their effect on school organisation and on learning acquisition in the student population remains an open question. The CEPPE (2010) study did not specify the situations that made it possible for schools to improve teaching conditions with the extra resources. There is no information to ascertain, how a school with an extremely disadvantaged student population should use the extra resources to improve their performance, or if there are contraindications for such a school under the accountability and market system.

2.3.2 Current evidence of the SEP law implementation and impacts

The Chilean educational system is now facing a new reform context. Since its inception, two of the most important characteristics of the voucher system have been the competition between schools and method for distribution of student enrolment. After more than 30 years, the impacts of these two elements can be seen clearly: Public schools have lost important participation, and student body segregation remains widely prevalent with no significant qualitative improvement. After the regulation of the voucher system in 2008, however, it has become necessary to focus on its future development. At present, the new process of accountability required by the SEP law from all schools involved in the program remains the most challenging component, especially for schools with low performance. Taking the present state of affairs into account, it is necessary to first identify the current effects of the SEP law on different aspects of school functioning, and secondly to discuss future implications of the law, i.e., to reduce socio-economic segregation and increase quality of learning.

An evaluation of the main impacts of the SEP law since its implementation must begin with a description of the general findings in the research. Analysis of the current state of the art with regard to SEP impacts brings up four crucial points for discussion. The first one is a description of the initial condition of schools with regard to organisation and academic achievement, and how their goals were projected. The second point illustrated by Chilean research relates the academic impact associated with the program. The third element constitutes reactions in the teaching process related to the new parameters of accountability

and the pressure of a possible closure. Finally, schooling alternatives for families facing a school closure must be discussed.

Since the SEP law was enacted, researchers have focused on its possible outcomes. One of the most important diagnoses of the initial state of participating schools in the first cycle of the SEP program was "*Plan of Improvement: Systematisation, analysis and policy learning*" by The Study Centre of Policy and Practices in Education (CEPPE in Spanish) (2010). This study evaluated the schools through their Plan of Improvement (PI) which was presented and approved by the Ministry of Education. The plan had two components -- the institutional diagnosis, and the academic goals of schools. The study created a database of 4564 schools with PIs approved by the Chilean Ministry of Education in 2009. Considering a representative sample of 345 Emerging schools, the study analysed and codified the PIs of all participating schools. The most important aspect of this study is that it provided a baseline to project the possible impact of SEP law in the schools that joined the program in 2008.

The first dimension of the PI was *institutional management*, which was divided into four aspects that were evaluated in terms of their main weaknesses. The first and main aspect was "curriculum management", which embraced pedagogic monitoring actions, teaching planning and evaluation. According to the diagnosis, the worst issue in this area was related to erratic pedagogic monitoring actions, demonstrated by the fact that the principal seldom evaluated classroom teaching. The second aspect evaluated "leadership", which mainly uncovered a lack of collaborative work. The reason for this deficiency stemmed from the point of view of the principal, who saw his role as centred mainly around administrative processes rather than pedagogical aspects, for which reason he almost never involved teachers in his work. The third aspect studied was "school life", which showed parent participation as the weakest factor in this area. Finally, an evaluation of the "resources" component revealed that an inadequate policy of professional development and hiring new staff was their major relevant problem. The overall conclusion of the institutional management evaluation was that, despite the prevalence of low levels of institutional management in most schools, this area was still avoided in addressing the learning process, in favor of focusing on measuring student improvement and planning classes.

Once the institutional evaluation was made, the schools compromised to achieve improvements in two critical areas of learning: effectiveness and proficiency. The first part of

the evaluation and proposal dealt with effectiveness, defined as improvement in literacy and numeracy as measured by SIMCE scores. Researchers consider effectiveness to be a critical element because most schools had proposed unrealistic achievement goals. To illustrate, schools with initial participation in 2008 showed 4th grade students with an average score of 239.8 points in literacy as measured by the SIMCE test, whereas the proposed goal to be reached in four years was 273.1 points. Overcoming this gap of more than 30 points represented a task that was overly difficult, since only 11.7 per cent of schools advanced 25 points in literacy between 2005 to 2008. Even more challenging was the case of lower performing schools, which had to increase by 43.9 points on average. Obviously, the schools with lowest initial scores had the most difficult burden. Researchers became concerned with this problem because it is precisely those schools with the poorest performance that have a more endemic problem with organisation and teacher development, which puts even greater difficulties toward achieving the academic improvement goal.

Considering the level of proficiency in low performing schools, the authors of the study analysed projections utilising SIMCE scores in literacy and numeracy, dividing the levels of proficiency into initial, medium and advanced. On average, the study found that more than half of grade 4 students had not developed more than initial achievement in literacy and numeracy. As a result, the schools proposed a reduction of 30 points on average for students at the initial level, and an increase of 20 points for students at the advanced level. To reach this important goal, the schools chose to develop, in the first cycle of SEP, speed and comprehension in literacy. Again, the goals proved too ambitious. The conclusion of this study expressed concerns about the real possibility of the majority of schools that subscribed to the SEP law, especially lower performing schools, actually achieving their improvement goal.

After the final period of the first cycle of the SEP program, some researchers explored the program's possible impact on academic achievement. The initial evidence presented by Raczynski et al. (2013) affirmed that although academic results were lower than expected, and did not coincide with the high values formulated at the beginning of the Plan of Improvements the SEP program affected positively academic achievement. Based on data from 2005 to 2011, the authors asserted that SEP schools improved more than non-SEP schools, reducing the gap of achievement between both groups. Another report generated by the Ministry of Education (MINEDUC, 2012) established that the SEP program did indeed

have a positive effect on academic achievement in the participating schools. Acknowledging the impossibility of analysing public schools²², the MINEDUC (2012) investigated the trend in private subsidised schools. In general, SEP schools presented an increase of 4 and 3 points in Mathematics and Language after the first period of the SEP program.

Mizala and Torche (2013) analysed the academic impacts of SEP program considering its evolution through the time (2008-2011) in private subsidised schools. One of the main objectives was evaluate if SEP has reduced the gap based on socioeconomic background of schools. There were two main results. One, there is a positive and cumulative effect of SEP on academic achievement (mathematics and literacy) for schools according to the years in the programs. And two, the positive effect of SEP program was significantly more important in disadvantaged schools than in schools with high socio-economic background. These results are consistent with the objective of the program that is oriented toward the most vulnerable student population.

With dissimilar results J. Valenzuela et al. (2013) using a semi-parametric methodology based on matching the results of schools in and out of the program, investigated the gain in academic achievement of private subsidised schools. The researchers found that after three years of implementation, most of the private subsidised schools did not show any improvement associated with the program. On the other hand, schools classified as Autonomous after three years in the program were linked to positive academic gains ranging from 1.6 to 10.5 extra points in language, and 8.1 to 13.7 points in Mathematics. The researchers also noted that from 2008 to 2011, there was a general improvement in language which could not be associated with the SEP program. Relatedly, the authors also found that schools with high concentration of disadvantaged students showed a modest but nevertheless positive improvement.

Another study by Peticara et al. (2013) endeavoured to estimate the relationship between academic achievement and (1) school type and (2) management of SEP resources. Recognising the technical difficulties of establishing a causal relationship, the authors defined the study as descriptive for exploring the pattern of public schools and correlational when considering private subsidised schools. Using descriptive data, according to SEP law, 4 per

²² As almost all public schools are participating in SEP program, there is not control group to compare.

cent of Autonomous schools descended to the Emerging classification and three schools were classified as In Recovery. Most (89 per cent) of the Emerging schools maintained the same classification; 8 per cent of them ascended to Autonomous classification, and 4 per cent descended to In Recovery. Public schools (both urban and rural) evidenced an increase in SIMCE scores in mathematics and language. There was no evidence of different patterns between Autonomous and Emerging schools. The authors did, however, find differences related to the level of socioeconomic school classification. In general, schools with a higher concentration of disadvantaged students had lower SIMCE scores; and public schools with lower enrolment had a better level of achievements.

There was no pattern identified for private subsidised schools. A relevant difference, however, was evident between urban and rural schools, with Emerging rural schools showing more significant improvement than the urban group. According to the evidence, in 2010, Emerging rural schools began to progress, with a 12 point score in SIMCE for language and mathematics, followed by an increase to 20 points in language and 15 points in mathematics in 2011 (both compared to performance in 2007). Nevertheless, like J. Valenzuela et al. (2013), the authors advised that all this advancement could not be associated entirely with the SEP program.

Regarding the association between SEP resource management and academic achievement, the researchers did not detect a strong association between different choices in the use of resources and the general outcomes, with one exception: When the funds were used to obtain learning materials and to subsidise staff, either by hiring additional personnel or providing existent staff with additional work hours, the gains were significant but modest. For instance, after a 10 per cent increase in expenditure for those items, there was an average increase of 0.4 and 0.6 points in SIMCE, respectively. It can be said that after four years of program implementation, the results presented by the Chilean researchers demonstrate positive academic development that can be attributed to the SEP program, however modest, and in spite of several methodological limitations.

To further analyse the impact of SEP school classification on low-performing schools in Chile, and to provide evidence for the debate on the effects of the accountability system on teacher policies and practices, an important study was undertaken entitled “*Short-run effects of accountability pressures on teacher policies and practices in the voucher system in*

Santiago, Chile” by Elacqua, Martínez, Santos, and Urbina (2016). To collect data, the authors surveyed 134 fourth grade teachers of the 84 "In Recovery" schools in the Greater Santiago Area. One of the main findings of the study reveals that school leaders prefer to adopt measures that allow short-term improvements. This preference influenced the common policy of establishing minimum achievement goals for SIMCE test evaluations.

According to the authors, approximately 60 per cent of the teachers declared that they had used exercises similar to those from SIMCE in class, and had taught pupils how to respond to the test items every day or nearly every day. More than 70 per cent of the teachers admitted to evaluating their students by using practice SIMCE tests. These practices create the possibility that schools will only create short-term, spurious learning results, rather than conducting a real learning process. The authors of this study also cite evidence suggesting that many changes affecting the teaching process were implemented from the top down by school administration staff, without involving teachers in the process. Although this study cannot be generalised, it does reveal the result of one perverse reaction to the new accountability process that has also been discovered in a different context in the United States (Ravitch, 2010).

Finally, there are several different studies that explore the influence of the SEP program on school segregation. Regarding the ability of disadvantaged families to access better school alternatives, in the research by Elacqua and Santos (2013) titled “*Revealed preferences of private school owners in Chile: the case of adjusted voucher law*” the authors discuss the costs and benefits of participating in the SEP program. In terms of the study’s main objective, the authors analysed the owners response to SEP incentives, specifically the cost and benefits of 40 per cent of private subsidised schools that decided not to participate in SEP law programmes in 2008. Considering that the SEP scheme is voluntary, the researchers pointed out the need to evaluate the impact of this mechanism in terms of coverage of priority students. Around 49 thousand priority students were not covered, which represents 10 per cent of that entire student population. In order to understand this decision it is important to know the cost and benefits accorded to private subsidised schools. For example, in the most advantaged schools in terms of academic achievement, the increased funding did not compensate for the costs of accomplishing the SEP requirements, especially related to student selection, or the implications of a loss in reputation. Other schools, such as small voucher and

rural schools, did not join the SEP programme because they lacked the management and technical capacity to fulfill the high requirements of the law.

Generally, schools with less than 15 per cent priority students are less likely to participate (only 22.3 per cent do). Additionally, only 44.2 per cent of schools with a “shared financing” fee structure participate in SEP. In the case of schools with religious affiliations, Catholic schools participate less than Protestant schools, 56.4 per cent and 71.4 per cent respectively²³. Finally, lack of participation from the schools that do not operate in network and from rural schools not in the scheme could signify that management capacity is a determining factor, an area that can use improvement. Despite the need to acquire more funding, schools that lack management capacity cannot take advantage of the SEP opportunity because they are not prepared to implement the changes that the SEP law requires. Against this panorama, the researchers assert that accepting the existence of schools who cannot be included into the SEP programme means maintaining a segmented system where vulnerable students cannot have access to a better education.

According to Valenzuela et al., (2015), the SEP program allowed disadvantaged students to broaden their possibility to choose. In fact, vulnerable students moved from public school to private subsidised schools. The public school loose student enrolment and private subsidised schools with co-payment increased their enrolment by 8.7 per cent and private subsidised school without co-payment increased by 2.8 per cent.

In appearance, this means a process of disaggregation of vulnerable students that starting to migrate to private subsidised schools. However, this process has a double reading. On the one hand, the continuum loosing of enrolment of public schools is accentuated by SEP, meaning a negative effect for those advocating for public school provision. On the second hand, the middle class students also migrate to those private schools without SEP program. This increased the socioeconomic segregation of middle-class students. Thus, since SEP implementation, the researchers stated that the increasing social segregation stops and were reduced slightly in vulnerable students though with an increasing concentration of middle-high class students, reducing the possibility to construct inclusive schools.

²³ According to the authors, the reason for this difference is that Catholic schools have fewer priority students, possibly to the major process of selection.

From another angle, the study by Elacqua et al. (2012) called “*School closure in Chile: Access to quality alternatives in a school choice system*”, presents an analysis of the possible consequences of the new process for families who might face school closure. Using a novel methodological approach, the authors employed the SEP law classification to evaluate options for students who attend schools classified as failing, i.e., "In Recovery". The researchers also utilised administrative records from the Chilean Ministry of Education, which they linked and exported to the ArcGis Desktop software to conduct spatial analyses; and they identified three major implications in their principal findings.

The authors explained that parental options increase when the search expands to a larger radius around the failing school. In general, for all “In Recovery” schools, the researchers found a better school located an average of 0.84 kilometers away, though the distance was significantly greater in the case of rural schools (4.39 km); within a 5 km radius, close to one third of the rural schools have no better school alternatives. Another finding show that the distance to the nearest quality school increases when the socio-economic level of the population decrease. Additionally, the authors emphasise that a close distance to a school does not automatically make it possible for a family to enrol their children in that school. Recognising the prevalent system of student selection in the Chilean school system, the authors argue that even if the better schools were capable of accepting more students, there is a great likelihood that they would choose not to do so in cases of students with lower socioeconomic backgrounds. The non-acceptance might be attributed to a conflict with the school's educational mission (e.g. religious), or because the school applied other requirements for selection, such as a tuition fee or parent interview, despite the fact that this is forbidden by law²⁴. Finally, the researchers also discovered that many schools available to families with children in "In Recovery" schools do not offer significant improvement in SIMCE results, despite the school's higher SEP classification.

In view of all the indications explained above, the sanction of closing failing schools would not yield the expected outcome, i.e., student enrolment in a better school, owing to other determinants affecting the outcome, especially for those pupils with lower socio-economic status.

²⁴ The new LGE prohibitions apply to any student selection from grade 1 to 6. Fee tuition is also banned for priority students.

2.3.3 Further SEP law enquiries.

To restate, the SEP law has been considered a leading adjustment to the Chilean educational system, with its significant reforms of the universal voucher system, intended to redress fundamental practices that, according to research, have contributed to school segregation and inadequate quality of education. Since its implementation has been recent, it is time to start to evaluate the improvements that this law was expected to bring.

With regard to the level of academic achievement associated with the SEP law reform, Chilean researchers have reported some academic gains linked to the program, although these were lower than the expectations expressed in the initial plan. The researchers appear to be more interested in measuring academic progress than in investigating other elements related to accountability, such as teaching practices and curriculum impact. Although Elacqua et al. (2016) did analyse these elements, their approach still did not discuss the meaning of effectiveness and its implications for evaluating the effectiveness of a school.

The initial diagnosis formulated by CEPPE (2010) established that schools did not make much of adequate practices of management and leadership. There is still a lack of research related to the extent of the program's internal consequences in schools, and how they are defined and adjusted to by principals and teachers on a daily basis in the new context; for instance, what type of leadership and organisation does accountability encourage. The capacity of schools to initiate and sustain processes of qualitative improvement (J. Valenzuela et al., 2013; J. P. Valenzuela, Bellei, & Allende, 2016) remains a primary concern. Definitions and sensemaking from major participants can give special insight to policymakers and illustrate internal contradictions to better understand policy in the disadvantaged student context, particularly valuable in the case of "In Recovery" and "Emerging" schools.

Another facet that emerged slightly in the revised literature is the program impact on school segregation. Some authors, such as J. Valenzuela et al. (2013), affirmed that segregation has not changed significantly and that its modification depends on structural changes rather than on a partial system of funding. Peticara et al. (2013) pointed out that assigning funding according to enrolment numbers generates a regressive system because schools with a high number of disadvantaged students are middle or small schools that receive a lower level of

funding than the bigger and more successful schools, which in many cases have a lower number of vulnerable students. As a final note, Elacqua and Santos (2013) addressed the problem with the voluntary nature of the SEP program. In their view, allowing some schools not to participate reduces the number of options for families to access a different school environment, which diminishes the market and the available choices for parents. Although Valenzuela et al (2015) found an increasing enrolment of vulnerable students in private subsidized schools; the middle-class students also started a process of concentration in those no-SEP schools.

Methodologically, most of the current research comes from quantitative perspectives. Considering the several methodological limitations in the study of academic gains and the almost null investigation of school practices, a qualitative perspective would enrich our knowledge and inform future perspectives on the SEP program as a tool in adjusting the voucher system to upgrade its quality and equity. As highlighted by the literature on school effectiveness, improvement is not only a reflection of student academic achievement as measured by a standardised test; it is also an amalgam of processes and actors that contribute to creating the qualitative process of learning. Taking this into account, it becomes necessary to also evaluate the impact of the accountability process on these areas beyond test scores. To find out whether the SEP program had a positive effect on school life would be a valuable task, especially since the current evidence displayed a worrying tendency to work that resulted in short term advances rather than working toward an efficient and sustainable process of improvement (Elacqua et al., 2016).

2.4 The contribution and criticisms of Educational Effectiveness Research (EER)

2.4.1 Assessing school impacts

Various approaches have been used to understand the influence of schools and the educational system on society as a whole. Recent social science research has employed different approaches that emerged from specific geopolitical contexts. The dominant literature concerned with the relationship between schools and systems and student learning has been produced in particular European countries and in the USA, and later expanded and applied to different scenarios, such as Latin America.

Since the publication of the Coleman (1966) and Jencks (1972) argument that no matter what reform is implemented, it is the socio-economic factors that will predict the majority of the final outcomes in student performance, many other sociological theories have given substance to this assertion. It is widely known that “structure” plays a crucial role in maintaining the *status quo*; as Bourdieu and Passeron (1977) pointed out, there are symbolic structures that help to maintain the existing economic conditions of the society. In this sense, a distinct educational “ethos” contributes to continuing to perpetuate the existing structures of inequality. Other authors, such as Bernstein (1974) assign an important role to linguistic codes as an explanation of why some social classes continue to perform better than others.

All the above mentioned ideas served to establish the existence of an endemic inequality, and the role played by the educational system in perpetuating these differences rather than diminishing them and contributing to social change. Lucas (2001) refers to this situation as an effectively maintained inequality. All the perspectives in the literature view the school system as being geared toward preserving the establishment, rather than changing social dynamics, thus offering negligible possibilities for increasing equality as a result of educational experience. In countries with high levels of socio-economic segregation and inequality, the socio-economic background of the family becomes an important consideration when attempting to understand and explain differences in student attainment. Indeed, according to OECD (2012b) reports, family SES accounts for a considerable proportion of the variance in student attainment in countries with high levels of inequality. Chile is a clear example of this case (OECD, 2012b). The importance assigned to SES can reduce the capacity of schools to engender social change. If the school as an institution continues to sustain inequality, it is easy to explain exclusion and persistent differences between social classes. The Chilean case can be used to support this concept; several authors have provided evidence of persistent inequality (Torche, 2005) and pointed to the type of schools in the Chilean system as a vehicle for socioeconomic segregation (Mizala & Torche, 2012).

Although these perspectives offer a useful explanation for part of the problem, they are still subject to criticism for over-simplifying the school’s capacity to make a difference (the so-called “black box”) and for hiding the potential of personnel within the school system to effect change.

As a reaction to the pessimistic analyses, Educational Effectiveness Research (EER) and School Improvement conducted research that offered new hope of finding opportunities for schools to redress contextual factors. The central hypothesis of EER is that school characteristics have an effect on student performance; therefore the research focused on within-school processes to disentangle all the factors and uncover the specific effect of school on student attainment. Much of this literature provides support for the contribution of the school and its components (e.g. teaching practices, school organisation and school culture) towards explaining and understanding student achievement (Townsend, 2007). Despite the different methodological approaches within EER, the results coincide in formulating similar elements and dimensions that make a school successful. In the latest analysis, Reynolds et al. (2014) reported that the result of the foundational study (Edmonds, 1979 cited in Reynolds et al., 2014) remained quite stable. Dimensions such as effective leadership, a focus on learning, a positive school culture, high expectations of students and staff, monitoring progress, parent involvement, effectiveness of teaching, professional development of staff, and student involvement in the educational process, have all been identified as aspects that 'work'.

One of the clearest conclusions from these perspectives is that schools can boost student attainment, irrespective of contextual factors; how much of an effect it can have has been the subject of tremendous debate. Since the emblematic report from Coleman (1966) asserting that schools have a minimal impact on student achievement in comparison to social background, EER has developed an enormous quantity of research that has established that school 'matters'; however, the impact and significance of the results is a reflection of both the quality of research and the context of comparison that is taken into account. In the developed world, on average, school accounts for approximately 5-18 per cent of the variance in student achievement (Sammons & Bakkum, 2011); in Latin America it can be as high as 50 per cent (Trevino et al., 2010).

Nevertheless, acknowledging all the findings and important points that this research paradigm (Wrigley, 2013) has established, it has also met with significant criticisms, mostly in two main areas. The first criticism relates to a narrow measure of effectiveness. According to critics, the over-interpretation of student achievement regarding cognitive gain has produced an over-simplification of what type of student attainment is valuable enough to measure (Carney, 2003; Proudford & Baker, 1995; Wrigley, 2013). As a result, measures of effectiveness embody a particular vision of excellence and a narrow focus on the form of

progress. Additionally, EER displays a lack of development in theoretical approach. The results are essentially a form of pure empiricism without the support of a strong theoretical corpus²⁵. As part of an emergent discipline, EER appears to have difficulty in allocating causality and integrating different levels, as well as in adequately defining different variables. In many cases, EER works with mostly cross-sectional studies that use different operationalisations, which hinders the development of a robust theory (Wrigley, 2013).

The second criticism of the work relates to a lack of contextualisation. According to critics, EER is based upon a perception of the school as an island, apart from the wider social and political environment (Murillo & Hernández Rincón, 2002; Proudford & Baker, 1995; Scheerens, 2001; Wrigley, 2013). Although the analysis includes the family background of the student, it does not promote an understanding of the influence of the cultural, political and economic context in which the schooling process occurs. According to Proudford and Baker (1995), this functionalist view of schooling reduces the possibility of clarifying how effectiveness operates in different contexts; therefore, Wrigley (2013) professes that EER has developed a dominant and standardised view of effectiveness that can be exported from one context to another. Thus, empirical and a-contextual views of effectiveness have led to an emergence of perspectives that treat endemic low-performing schools as organisations that can be 'fixed' by the application of specific steps. One clear example of this is the 'turnaround school' movement in the USA, which promised that, by fixing five leading practices, schools can turn their history of failure into success (Herman et al., 2008). Another example is evident in the work of Hopkins, Stringfield, Harris, Stoll, and Mackay (2014), where their state-of-the-art analysis does not discuss the specific conditions of different systems, even though the main purpose of their review is system improvement. This de-contextualisation creates an absence of critical debates about which specific conditions lead to effectiveness or ineffectiveness and the related discussion about how injustices are produced/reproduced. According to Carney (2003), EER plays a crucial role in preserving conservatism in education, distorting "the possibilities for schooling to contribute to societal development"(p. 91).

Although EER has developed as a useful model for improving student attainment, some researchers argue that the formulations lead to a generic and sometimes ethnocentric view

²⁵ One of the contributions to this area is the development of Dynamic Theory in the work of Creemers and Kyriakides (2008).

that excludes particular contextual differences in effectiveness between teachers and schools around the world (Televantou et al., 2015). This internal criticism emphasises the need to establish different models of effectiveness that integrate the varying contexts and incorporate the current structure and design of the particular educational system, including recent reforms, in order to understand what constitutes progress and failure in education for different populations. In other words, the effectiveness of one school might not be comparable to that of another school in a different situation with a different student body. Goldstein (1997) conceived a differential model of school effectiveness with this idea in mind. Otherwise, the literature on effectiveness and improvement visualises schools as flat organisations that can be understood without considering the power relationship within the particular teaching contexts. It is undeniable that it is necessary for EER to introduce research with a more comprehensive and solid analysis of context. With this inclusion, school effectiveness studies from Latin America can make a substantive contribution to the international debate (Scheerens, 2001). The study **SES compositional effects and policy analysis** is one work of great value to a better comprehension of context as it relates to effectiveness, particularly in regard to defined inequality. The following presents the importance of introducing multilevel analysis to study school effectiveness, along with the relevance of compositional effect studies to counteract the existing criticism.

2.4.2 The multidimensional dependency of student's achievement

In order to study school effectiveness more precisely, EER has employed multilevel analysis for more than 30 years. The modern EER has overcome initial misspecification and bias found in the most impactful work in the field, Coleman (1966), and Jencks (1972) where the analysis was considered only at student level, without taking into consideration the dependence of students on the school (Goldstein, 1997) and the role of an explanation of school context. Borman and Dowling (2010) defined Coleman's report as the most influential research in the area; however, the most active debates are those that refer to using theoretical and analytical methods to determine the variance of student and school level. Currently, it is widely acknowledged that a contextual effect exists with regard to almost any kind of social situation, and must be taken into account. In education, the student's achievements are strongly affected by the characteristics of the classroom, the school and the school system. It is necessary to use specialised analytic tools to evaluate the multilevel nature of those concepts and relationships (Luke, 2004).

The following section is divided into two parts: The first part is an argument for the need to apply multilevel modelling to deal with dependence and clustering in the data, and also to consider the influence of context on student achievement. The second part, based on the analysis of several researchers, outlines the risk and bias of traditional techniques for treating clustering data, and presents the advantages of using multilevel modelling.

2.4.3 The need for multilevel modelling.

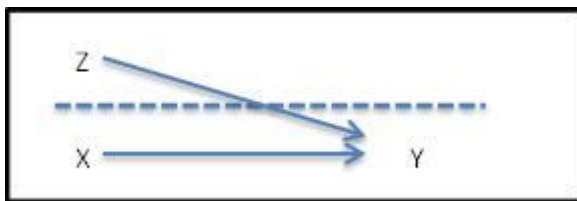
In social science, the effect of grouping on individuals is a fundamental element, because it represents part of the dependence between macro and micro levels. In terms of EER, this dependence has been defined as a structural relationship (Raudenbush & Bryk, 1986) that represents a complex and hierarchical structure (Rasbash, 2008). According to Goldstein (2003), such data hierarchies are not causal and cannot be ignored. Once individuals form groups or clusters, it is likely that those individuals will be more alike than those from other groups. This type of dependency of individuals to certain groups configures an interesting phenomenon for social researchers because it allows them to emphasise the contextual effect of grouping. An absence of dependency, in this case, implies an absence of institutional effect on individuals (Snijders & Bosker, 2012). A clear example of this type of data frame is readily acknowledged in educational research: when children learn in class, characteristics such as teacher pedagogy and classroom climate are likely to influence their achievement (Steele, 2008). The same idea can be extended to school and system levels. Therefore, as educational research often displays data that expresses this kind of structure and dependence, multilevel analysis becomes crucial to establishing an investigation that properly handles different variables measured at a number of different hierarchical levels (Hox, 2002). The multidimensional dependencies of social realities are phenomena that deserve special attention and analysis (H. Luyten & Sammos, 2010).

Taking into account the contextual effect, multilevel analysis can help to construct a richer definition of effectiveness because it includes not only mean achievement, but also the social contribution of achievement (Raudenbush & Bryk, 1986). Additionally, multilevel analysis is flexible, and can respond to rich questions about effectiveness for different student groups, such as stability (overtime), consistency (through different outcome measurements) and differential effectiveness (H. Luyten & Sammos, 2010). The last dimension permits one to

address one crucial aspect of effectiveness in developing countries -- the equity of outcome distribution. As several researchers state, a satisfactory approach to school effectiveness modelling requires the use of multilevel analysis (Goldstein, 2003).

In terms of its methodology, multilevel analysis connects variables at different levels simultaneously, including various dependencies on hierarchical structures (Hox, 2002; H. Luyten & Sammos, 2010; Snijders & Bosker, 2012). According to Bryk and Raudenbush (1992) each level is represented by its own model that displays the relationship among variables within a given level, specifying how variables at one level affect relationships occurring at another level. Schematically, Snijders and Bosker (2012) use multilevel proposition to represent this capacity. Figure 2.2 represents the effect of macro-level variable Z (e.g. school SES) on micro-level Y (e.g. pupil achievement), controlling for the micro-level variable X (e.g. student SES).

Figure 2-2: The structure of a multilevel proposition.



Therefore, multilevel analysis allows the separation of within-school phenomena from between-school phenomena, considering factors that have an effect not just on school means but also on structural relationships within schools (Raudenbush & Bryk, 1986).

2.4.4 Advantages of using multilevel modelling.

Despite the presence of hierarchical structures underpinning many phenomena in social science, there are still some scholars who prefer traditional approaches for analysing clustering data (Hox, 2002; Raudenbush & Bryk, 1986; Snijders & Bosker, 2012). There are clear consequences to employing this inadequate process.

In describing some of these strategies, Steele (2008) points out that although some can treat standard error correctly (for clustering), they treat clustering as a nuisance rather than as something of genuine and significant interest. For instance, some of them use a single-level model and simply ignore the structure. Technically, this approach would lead to a spurious

underestimation of standard error. Others include the use of a set of dummy variables for groups; however, this approach is not useful when there are a large number of groups, because of the numbers of extra parameters that would be required. Others employ a single level model using group-level predictors, but this approach contains a high probability of producing a type I error, because of the fact that the standard error coefficient of group-level predictor can be dramatically underestimated. In sum, as many researchers have concluded, all these examples demonstrate two basic types of problems: conceptual and statistical (Hox, 2002; Rasbash, 2008; Raudenbush & Bryk, 1986; Snijders & Bosker, 2012).

Conceptual problems are related to the erroneous interpretation of results. If the researcher aggregates or disaggregates higher order variables into individual levels, or vice versa, s/he can commit the fallacy (ecological / atomistic) of allocating findings to the wrong level; that is, analysing the data at one level, and formulating conclusion at another level (Hox, 2002; Luke, 2004; Snijders & Bosker, 2012). Statistical problems can lead to misleading results (Raudenbush & Bryk, 1986); when researchers do not consider the clustering in the data, they can obtain significant results that are totally spurious (Hox, 2002). Traditional techniques in the study of clustering data, such as OLS, could lead to reducing standard error, making it possible to commit type I errors and violate the crucial principle of independence of observation in statistical analysis (Raudenbush & Bryk, 1986; Snijders & Bosker, 2012). Moreover, Luke (2004) points out that traditional statistics usually contain the assumption that the regression coefficient applies equally to all contexts, thus ignoring the structural or institutional effects of clustering.

In general terms, it is commonly accepted in modern social research that multilevel modelling is a satisfactory approach for clustering data. In relation to educational effectiveness research, one of the most important strengths of multilevel analysis is its capacity to investigate the sociological nature of between-group variability and the effects of contextual characteristics on individual scores, explicitly recognizing and modelling how students are grouped within schools. Here, multilevel modelling offers at least three major advantages:

1. Through use of these techniques, the resulting statistical analyses provide a more efficient estimate (correcting for standard error) of the effects of predictor variables, generating generally more ‘conservative’ interpretations (Goldstein, 2003; Steele, 2008).

2. This approach allows for an estimate of the effect of individual schools with their related confident interval. This serves to identify more or less effective schools allowing for further individual cases for studies, for example, of failing or successful schools (H. Luyten & Sammos, 2010).
3. The technique can express random effect (differential effect), which serves to identify a more complex form of effectiveness, displaying different types of effective schools according to different student groups and outcomes (H. Luyten & Sammos, 2010).

2.4.5 The relevance of school SES compositional effects.

Compositional effects have been articulated differently in depending on the particular discipline. For example, in economics, the term 'peer effect' is normally used, while in social science the same concept is more often described as 'compositional effect' or 'contextual effect'. Dumay and Dupriez (2008) define compositional effect as "the impact of pupils' aggregated characteristics (SES, sociocultural capital, prior achievement, etc.), when these variables have been taken into account at the individual level" (p. 440). Thus, compositional effects are aggregated level phenomena that impact student outcome beyond student characteristics, and that include the essential question of the role of schooling and its impact.

There are different approaches to measuring school effectiveness. Some of them are more oriented toward analysis of school improvement, while others are better fitted to evaluate accountability systems (Timmermans, Doolaard, & de Wolf, 2011). Various strategies exist, known as 'raw evaluation', 'contextualised analysis' (CA), 'value-added model' (VA), and 'contextualised value added model' (CVA). Despite this increasing complexity and sophistication of research designs, EER study has been criticised as lacking awareness of context. Although CA and CVA have introduced different contextual variables at the individual and school level, the concept of what constitutes school effectiveness is the major difference between sociology of education and this research. EER investigation is more inclined to explore the educational variables that make a school effective, such as value-added models; and compositional effects are employed more as a control variable to obtain a 'correct' measure of effectiveness, rather than examined as an issue of interest in itself (Televantou et al., 2015). In fact, the term 'school effect' is related to educational processes (teacher pedagogy, school organisation, teacher expectation, etc.) and not to less malleable

aspects of school operations, such as student intake, school SES composition and school classification.

In contrast, the perspective from sociology of education views compositional effects as central, and potentially indicative of within school issues including the effect of important external contextual aspects (Harker & Tymms, 2004). The sociology of education takes a closer look at those elements that are not easily malleable, that largely defines the functioning of the school, and would have an impact both directly and indirectly on the school outcomes. These effects can be understood in this research as 'structural school effects'. Thus, the external features that are recreated through school functioning are chosen as the unit of analysis. These factors are related to the configuration and structural characteristics of the school that have a direct and indirect impact on school processes, such as the SES compositional effect.

In a segregated educational system, the compositional effect is much more than one component to be taken into account; it is central to understanding how, in many cases, school processes are organised and affect student learning. Currently there is a renewed interest in compositional effects because of their close relationship to controversial educational policies such as market competition (Nash, 2003) and the related consequences on school segregation. Evaluating compositional effect has great significance regarding accountability, especially when the school is given greater responsibility for boosting student learning. At a time when accountability puts pressure on schools to achieve high scores even within a disadvantaged context, the SES composition can lead to a differential approach by principals and teachers. As has been pointed out, group composition and school processes have an intricate connection; indeed, controlling for the effect of composition can reduce the importance of other processes (Dumay & Dupriez, 2007). The SES composition can affect the orientation of what can be defined as progress, and what can be considered to be quality and equity in education.

If school segregation concentrates students by intake (SES and Ability), then the emergence of compositional effects becomes an important aspect to discuss, especially for the significant implications on the manner of evaluating effectiveness and the real impact of school processes on student achievement. Compositional effects have both ideological and political implications. Ideological implications relate to the debate about the power of schools as either

a resource for social change or a vehicle for preserving the *status quo*. As Thrupp, Lauder, and Robinson (2002) have pointed out, if compositional effects play a minimal influence, school effectiveness and improvement are determined by the internal processes of school, and therefore the school can legitimately claim to be the agent of its results. In contrast, if compositional effects are substantial, then school effectiveness research has a limited power of explanation, not only of the initial school background but also how students subsequently interact within the social context of their school.

Beyond understanding the importance of compositional effect, it is also necessary to establish how it operates. To this end, both quantitative and qualitative²⁶ research is required (Thrupp, 1995). Compositional effects have been widely studied in quantitative research; which provides an intriguing part of school effectiveness analysis (Televantou et al., 2015). Although the definitions have been accepted, interpretation of the compositional effects remains a complex task. The presence of similar student intakes makes it challenging to determine if compositional effects have a direct influence on student achievement. Some researchers are inclined to understand the effects as a derivation of peer interaction, teacher practices or the characteristics of the school system (Nash, 2003), as well as by all of these factors simultaneously. This uncertainty has opened the methodological discussion regarding the existence and the interpretation of compositional effects.

2.4.6 Compositional effects in the Chilean context.

To obtain a better understanding of compositional effects, it is necessary to relate them to a specific educational system, as well as to a precise sociocultural context. Researchers in this area have given increasing attention to the potential role of these specifications in capturing the significance, size, and especially the impacts of compositional effects. Benito, Alegre, and González-Balletbò (2014) have pointed out that the compositional effect has a stronger impact on certain groups of students, mainly on underprivileged and ethnic minority students. Although determining whether compositional effects have a homogeneous or heterogeneous impact on student attainment is still under discussion, the impact does appear to be different for different groups. In general, positive compositional effects are associated with privileged groups, especially the effect of peer impact.

²⁶ This part of the research will be discussed in another section of this thesis.

Trevino et al. (2010) evaluated the factors associated with student learning in Latin America. Using 2-level hierarchical linear models, the authors developed a general and specific model for each of the 17 countries participating in the study. In general, in Latin America, the strong influence of the socio-cultural context on learning processes diminished the capacity of schools to promote or influence student achievement. Variance between schools ranged from 15 to 55 per cent; however, the compositional effect reduced school impact by 5 to 30 per cent. These differences reflect important disparities between countries. In the case of Chile, the between-school differences accounted for an average of approximately 20 per cent of student achievement; however, with regard to the average compositional school effect, Chile displayed one of the highest levels, with a decrease in the school contribution to 8 per cent. According to the authors, a possible explanation of the lower importance of school effects in Chile can be found in the high between/within-school segregation that tends to result in students from the same backgrounds attending the same school, thereby diminishing diversity and equitable inclusion across the school system.

C. Bellei (2013) and Mizala and Torche (2012) state that the influence of socioeconomic segregation can be measured through the compositional effects, where it is possible to identify aggregate student background as having a stronger effect than individual student characteristics. Indeed, in a comparative study, C. Bellei, Valenzuela, Osses, and Sevilla (2009) found that the compositional effect in the Chilean system is higher than in the European countries with which it was compared. Furthermore, Chilean research has shown that the compositional effects have dual implications: positive academic achievement for those who belong to advantaged socioeconomic groups, and negative academic achievement for those who belong to disadvantaged socioeconomic groups. These repercussions remained the same not just in terms of academic achievement, but also in terms of other indirect/direct school particulars such as school climate, teacher expectation, etc. (Mizala & Torche, 2012).

In another important and influential study, Mizala and Torche (2012), using a multilevel formulation, examined the socioeconomic distribution of achievement within and between public and private-voucher schools. In contrast to other scholars who explored the association between individual-level SES and achievement, these researchers found that the aggregated level of SES demonstrated a stronger relationship to test scores, showing the significance of socioeconomic stratification of achievement. Indeed, one of the most significant findings of this research is that the compositional SES in the public sector accounted for about 20 per cent of the standard deviation (SD) of test scores, slightly stronger than the influence of

individual SES. In the private-voucher sector, the effect was even more substantial. The compositional SES reached 40 per cent of SD, almost twice as much as the individual level. In light of these results, the authors affirmed that for students who belonged to the private-voucher sector, the aggregate SES of their school has a much greater influence on their achievement than their own family's SES.

Exploring compositional effects in a non-traditional subject, Collado, Lomos, and Nicaise (2015) assessed its impact on civic knowledge among eighth-grade students in Chile. In line with other research, the compositional SES effect was found to be significant and stronger for students with higher individual SES who attended private fee-paying schools. The authors conclude that once compositional effects have been isolated from individual, confounding and suppressor factors, the additional compositional SES effect on student achievement can be interpreted as follows: "For one point in average compositional SES, a student would increase on average his score in civic knowledge by approximately 41 points, net of school/classroom and student determinants that also affect civic knowledge" (p. 13).

Notwithstanding the differences in data sets, years of evaluation and even subject matter among various researchers, there is a clear consensus that the presence of compositional effects tends to widen the gap in achievement between students with low and high SES. In addition, the relationship between composition effect and achievement appears to be stronger in private-voucher schools than in public ones (Collado et al., 2015; Mizala & Torche, 2012; A. Mizala, Romaguera, & Ostoic, 2004). Considering the extent of school SES segregation and within-school academic segregation, the Chilean system exhibits highly dysfunctional performance regarding equity, leaving behind the most vulnerable parts of the population.

All the evidence discussed here underlines the presence of compositional effects in the Chilean educational system. Nevertheless, when considering the formation of new school agreements to promote excellence, new accountability processes and an increase in professional training for teachers, there are still questions about the value of these efforts as compared to the influence of student and school background. For example, how equitable is the achievement in mathematics? How much does the social contribution of SES affect this mathematics achievement? These are the remaining questions that this research is intended to answer.

The institutional arrangement of the Chilean system provides several aspects for consideration (e.g. voucher system, competition between schools, shared financing, school selection, profit, parent choice, etc.). Although numerous aspects have been studied, the school selection criteria have not sparked the interest of Chilean researchers, at least not toward undertaking a multilevel approach. Yet this factor marks one of the initial conditions for segregation, because -- as some authors have proclaimed -- there is clear evidence that the process results in having the school select their students, rather than enabling parents to choose the school. This phenomenon leads to the selection of a specific student body, which produces further educational consequences. It is essential to determine how this specific student intake method results in a distinct ethos that exerts a strong influence on student achievement²⁷ in the Chilean context, in order to provide an example for other systems with high levels of socioeconomic segregation.

2.4.7 Possible causes of compositional effects in Chile

The degree of compositional effect present in the Chilean context can be explained by examining the nature of different and interrelated political factors. C. Bellei (2013) grouped three possible explanations for school segregation: a) contextual factors such as residential segregation; b) factors deriving from the educational system itself; and c) socio-cultural factors such as family preferences. According to C. Bellei (2013), Treviño et al. (2014), and J. Valenzuela (2008), socioeconomic segregation between schools is higher than residential segregation. Since that finding eliminates residential segregation as the primordial cause of the situation in the schools, the Chilean explanations are therefore more attributed to factors associated with the system itself.

There are three main elements associated with the design of the educational system that must be emphasised as possible contributors to segregation. The first element concerns the quasi-market orientation of the Chilean system. One of the methods used to emulate the market system in education is to introduce the principle of competition. On the supply side, in principle, the parents are allowed to select the school they want; but as Chilean researchers have pointed out, in reality, private schools select the most academically able students to increase their productivity and decrease their costs. This practice creates a distorted version of the competition principle, making it difficult to evaluate effectiveness and true value-

²⁷ This last aspect will be studied using a qualitative approach in the second part of this research.

added impact, especially for parents. This process has been defined by van Zanten (2009) as ‘second order competition’ - defined as the process of schools gaining prestige through their method of student intake. The outcome consists of private schools attracting and selecting families with higher socioeconomic status in order to minimise school expenditures and maximise profit, and acquiring a symbolic prestigious status (Elacqua, Schneider, & Buckley, 2006; Hsieh & Urquiola, 2006).

The second element that contributes to the compositional effect is the funding system. Researchers have stated that the flat voucher scheme and its subsequent “share financing” adjustment raised the motivation for schools to try to select students by type. This mechanism enabled schools to accomplish differentiation goals more easily, and allowed them to enhance their reputation without the need to introduce improvements in quality (Elacqua et al., 2006; J. Valenzuela, 2008), effectively polarising the school background (Mizala & Torche, 2012; Torche, 2005). In summary, the reaction of schools and parents to policies intended to reform segregation resulted in motivating a type of behaviour that established an undeniably high level of socioeconomic segregation within the school system. This composition effect served to undermine the real capacity of the schools to redress inequalities.

The third element that bears upon the existing school compositional effect relates to the cultural aspects of the demand side of the market model. As mentioned before, Chilean parents are formally allowed to choose their children’s school, a decision that was intended to inspire the schools to compete for enrolment by striving for higher quality. However, as demonstrated by different authors, family school choices are driven by socioeconomic status rather than by school quality (Elacqua, 2012; Elacqua & Martinez, 2011; Elacqua et al., 2006; OECD, 2012b; J. Valenzuela, 2008). The nature of these decisions, i.e. choosing a school with desirable background characteristics that are by no means related to school performance, tends to reinforce the segregation trend. Evidence shows that SIMCE results are not the family’s main consideration when choosing a school (Quaresma & Valenzuela, 2017).

2.4.8 The theoretical relevance of the disadvantaged school context

The impact of different student settings on school performance, especially in schools with substantial enrolments of low SES students, has not been taken seriously (Thrupp & Lupton, 2006). The authors call for more attention to this context because, even in similar SES schools, there are other circumstantial differences that may have a significant effect on school

process and student achievement. Notwithstanding that SES differences are recognised in the literature, along with the expectation that students with different backgrounds will perform differently at school, **inadequate attention is given to why these differences occur, and to the internal and external processes that produce such differences.** According to Angus (1993), **the simple statistical connection between student setting and achievement is insufficient to explain how the relationship works.**

Investigating contextual differences helps to identify the social and economic inequalities that inhibit some students and schools from doing as well as others. The standardised approach to effectiveness and all the respective mechanisms of technocratic intervention are often considered by teachers to be part of the problem. The current trend of pressuring for certain types of curricula, pedagogy, and focus on the 'basics' deflects attention away from the needs of schools that are highly disadvantaged. These needs and priorities are stated by Thrupp and Lupton (2006) as students requiring more attention, and needing to work with other rhythms and other modes implemented by the teacher and by the school's leadership team. Schooling in marginalised environments may demand more individual tuition; curricular options that value different skills and qualities; and even a differentiated evaluation procedure. Taking into account the need to adjust and adapt in these ways, the binary dichotomy of good/bad school becomes not useful, or even biased. Ball (1997) calls for problematising the concept of 'good school' in order not to reduce the idea of a 'good school' to a set of simple performativities and representations. Although some schools with disadvantaged students may be classified as failing schools, it is difficult to make a fair evaluation without separating school effects from non-school effects (Downey, Paul, & Hughes, 2008). Therefore, a continuous understanding and explanation of the complex notion of "what counts" as effectiveness should be visualised as an interaction between educational practices and the social formation of the context (Angus, 1993).

The main criticism of EER is that many of the contributing factors identified by the work are difficult to replicate, perhaps because they are school-based rather than school-caused (Thrupp, 1999). For this reason, understanding how principals and teachers are actually working in disadvantaged areas is not only an empirical necessity and methodological strategy, it is also **an important objective to expand both the methodological concern about capturing a dynamic phenomenon and ending the theoretical restriction in school effectiveness research that sees achievement as unconnected to specific social and**

educational configurations, notably the internal processes of active actors seeking to make sense of different dynamic scenarios.

2.5 Policy Analysis

2.5.1 Market-oriented systems and accountability through testing.

There are two main aspects that critical sociology has problematised, sought to explain and confront. One is an explanation of how schools construe success, and how this mindset links to the denomination of winners and losers within school systems. The other aspect is the definition of quality, and the consequent classification of schools as successful or failing.

To respond to the critics of effectiveness and improvement perspectives, the analysis must be done within a particular policy context. Among the most controversial systems are those that have elected to implement and encourage market participation. Although it is hard to establish causality with respect to **markets** and effectiveness, relevant research in different countries has presented certain types of school financing systems and levels of effectiveness (OECD, 2012b). In the case of Chile, which is considered one of the most privatised countries in OECD, many researchers have linked the voucher system and competition between schools to high levels of socioeconomic segregation and low student productivity in international achievement tests, despite a high number of hours of instruction. Certainly, in the Chilean case, the growing segregation process encouraged by intense **school competition**, student selection and payment of extra fees, impacts strongly on the capacity of the school to function effectively, especially schools with a high concentration of vulnerable students. The Chilean market environment is characterised by school differences based on social class, but largely ignores differences based on school innovations in curriculum and pedagogy (Falabella, 2014).

Another aspect to consider is the impact of accountability systems on school capacity within a market-oriented environment, especially those through high-stake testing. According to Stephen Ball (2003), these reforms are presented as a form of deregulation, when they are in fact based on a process of re-regulation. Ball (2003) defines performativity as follows: “performativity is a technology, a cultural and mode of regulation that employs judgements, comparisons and displays as a means of incentive, control, attrition and change - based on rewards and sanctions” (p. 216). The assumption is that schools are responsible for their

results (success/or failure) and that in a competitive environment embedded with constant evaluations, the effectiveness of the system will spur gains in achievement.

There are three clear examples of the creation and expansion of high-stakes testing in England, the United States, and Chile. In England, the visible change began with 1980 and 1988 legislation that introduced a national curriculum and related assessment (Minarechová, 2012; West, 2010). The bases of the changes were to introduce a quasi-market where schools compete for consumers and where parents can hypothetically choose their schools. Standardised testing was to provide the objective information about the 'quality' of education through school comparisons. Market logic dictated that schools would be forced to improve; otherwise, the parents would send their children to other schools (McCarthy & Lambert, 2006).

The United States has long exhibited a tradition of accountability and use of data that authors such as Pandya (2011) has called an extreme accountability culture with an obsession for testing (Taubman, 2009). According to Taubman (2009), high-stakes testing began with the policy of the minimum competency movement around 1970; however, when the No Child Left Behind (NCLB) Act of 2001 was established, the use of tests was exploited further. In the United States a complex system of accountability exists from Federal governments to states and districts. For instance, NCLB mandates that every state must construct an accountability system to audit student progress, school achievement, teacher quality and achievement gaps (Taubman, 2009).

In the Chilean case, neoliberalism attained political power with the dictatorship of Pinochet, who completely re-structured the educational system and other social spheres. Since 1980 the introduction of parent choice and school competition led to an increase in school competition, establishing a quasi-market in education. While the Chilean case was characterised by a comprehensive system before the Pinochet dictatorship, the introduction of the market-oriented system of accountability became part of the accepted logic, albeit very poorly introduced. During the 1980-90's accountability relied on parent choice based on public information and some vague school reputation, but not via official examination by school authorities. Public information about school performance was not reliable; after 1995, the technical improvement known as SIMCE was introduced to the National test. Accountability

was then defined as determined by parent choice until 2008, when a special law was enacted that made explicit the responsibility of the state to ensure the quality of schools. This first attempt was finally completed with the introduction of an Educational Quality Assurance System, under the Quality Agency Law of 2011.

Despite the structural differences between these three countries, the discursive logic of the educational reforms is the same. To strengthen the market -- and consequently the improvement process -- the schools and teachers must be made accountable. In most cases, the system is designed from the top down (centralised) to provide information to the public and the stakeholders (West, 2010; Wrigley, Lingard, & Thomson, 2012). For example, in England parents can compare school achievements through league tables. In Chile, the SIMCE test displayed school averages, comparing schools with similar SES backgrounds. These systems of accountability have been defined as high-stakes testing because they have important consequences for the schools, the teachers, and the students, and in the United States, tests have implications for all three groups. In the Chilean case, however, only the schools are directly impacted by school classification and possible shut-down if a school does not improve within a given period.

While accountability processes have been in place for a long time, recently the testing programs have become more punitive and detrimental than ever before (McCarthy & Lambert, 2006), inspiring authors to call for recognising the negative effects of these policy reforms. Ravitch (2010) stated, "the unrelenting focus on data that has become commonplace in recent years is distorting the nature and quality of education" (p. 185); and Taubman (2009) declares that the constant test pressure intended to implement control and surveillance, "reduces education to right answers and information" (p. 53). The critical literature is now challenging the claims of enhanced student achievement, educator performance and improved test scores (Webb, 2006) that allegedly result from constant testing, suggesting that this practice does not necessarily provide objective information about the complex process of learning and the quality of school operation, but is more likely to perpetuate the inequality in the system through the use of assessments that jeopardise the needs of both students and schools (Wrigley et al., 2012). Some authors have remarked that schools cannot sustain and produce significant change while under threat (Ravitch, 2010; Taubman, 2009; Wrigley et al., 2012). Indeed, the policy of accountability through testing deeply affects the teaching process, the quality of schooling, and teacher morale (Webb, 2006).

According to Ravitch (2010), public schools have been seriously damaged, and their survival is in danger. Reform as an application of accountability through testing reduces and simplifies the process of change to a few steps, whereas the steps that make a successful school are not obvious; and what has worked for some schools or contexts cannot be easily transferred to a different scenario. In essence, standard testing and accountability reforms have degraded the quality of education, and the purpose of these reforms has been negated by a series of side effects to all components of schooling. According to critical literature, high-stakes testing imposes serious consequences on teaching and learning processes and on students, teachers, schools and states.

Elucidating the damage caused by high-stakes testing on the quality of the teaching process, Wrigley et al. (2012) describe how the fear of failure has led to a pedagogical reductionism where teachers provide instruction only on content covered by the test, a phenomenon called "the pedagogy of the same" (p. 2). This is a short-term strategy engendered by the pressure and obsession for data and the short-term idea of effectiveness. The way that students are being taught is changing, and the curricular contents are reduced and distorted (Minarechová, 2012). There is an overconcentration in subjects related to the testing that creates a narrow and shallow form of learning through low levels of teaching innovation (West, 2010). As Webb (2006) pointed out, the pressure of accountability reduces the teaching process "to a dichotomy of breadth versus depth for teachers" (p. 10). The normalisation of testing practices promotes the idea that tests and their results are incontrovertible, and that tests can actually measure real student abilities (Pandya, 2011). In this way, test results are equated to quality and improvement or failure. As Taubman (2009) explained, the data become the 'objective' reality used to justify the educational policy. Ravitch (2010) criticises this simplistic view, declaring that testing cannot replace curriculum and instruction; and that the quality of education cannot be achieved by over-testing students and shaming educators. Accountability through testing makes strong, direct and indirect inferences about teacher impact on student achievement without considering the context of teaching and using no valid measures of the quality of the process of teaching (McCarthy & Lambert, 2006).

It is not only the process of teaching that is being damaged, but also the teachers who suffer adverse consequences from the continuing pressure of accountability. One of the most significant and immediate effects is the increase in teacher stress (McCarthy & Lambert,

2006; Webb, 2006). Webb (2006) and Pandya (2011) conducted interviews of teachers working in low socio-economic situations and found that teacher stress was pronounced, and related to the conflict between curriculum delivery and the needs of the students. Teacher dilemmas begin with the pressure to teach a narrow curriculum in a fixed time-frame to students in impoverished environments. Besides suffering from the pressure, teachers also feel that the narrow scope of the curriculum limits their pedagogical decisions and impairs their sense of professionalism. In her reviews, Webb (2006) reported a rise in teacher demoralisation; teachers' anxiety about the legitimacy of their professional decisions; and an increase in teacher attrition. The stressful environment led to teachers leaving the profession or resorting to some type of cheating (Webb, 2006; West, 2010).

This continuous and increasing process of micro-management yields a de-professionalisation of the teacher's role. This de-professionalisation created by constant accountability and the process of 'efficacy' results in the loss of autonomy and an increase in insecurity for teachers. This new idea of achieving quality through competition between schools and teachers requires a new type of teacher who can use his or her own common sense to add value to themselves and improve their productivity in spite of the faulty logic of formal requirements or achievement targets, namely, notwithstanding the things that have been erroneously defined as important and are said to work (Ball, 2003).

High-stakes testing also has negative consequences for students. Under a regimen of standard accountability, students are supposed to pass appropriate benchmarks at the appropriate time (Pandya, 2011). In the context of the United States where tests are highly associated with future possibilities for students, the constant pressure to pass takes a toll on psychological and emotional well-being (Minarechová, 2012). Another profound impact of high-stakes testing comes from the fact that students are threatened by schools according to their expectation of passing the tests, suggesting a preferential focus on some groups of children as opposed to others (West, 2010). Students at the top or well below the benchmark are not considered to be a 'priority'; the emphasis is placed on borderline students. This school engineering yields more benefits for the school and its associated position on a league table than it does for the well-being of all pupils. As Ravitch (2010) stated, "what matters most is for the school, the district, and the state to be able to say that more students have reached 'proficiency'" (p. 159).

Finally, schools and states have also been found to be affected negatively by high-stakes testing. In a market-oriented system, the average school scores serve as an indicator for parents who are looking for high quality schools. The pressure of having school scores displayed can motivate schools toward initiating the process of socio-economic and academic selection. Just as parents are free to select schools for their apparent achievements, schools can also select students based on their prospect of achieving the desired scores (Minarechová, 2012; West, 2010). The challenge for schools in the context of poverty is to respond to student needs while also fulfilling the demands of policy. In their investigation of schools in vulnerable contexts, Wrigley et al. (2012) highlighted the tension and the tight margin of action in schools within a standardised system of evaluation. According to the authors, schools cannot accomplish all the tasks necessary to correct existing inequalities; they are only capable of make a certain amount of difference. To do more, schools need to develop other approaches to the challenge than those encouraged by official reforms.

In the United States, where testing is considered excessive (Taubman, 2009; Webb, 2006), the economic impact of the testing policy has been widely criticised. Minarechová (2012) questions whether this policy represents the right path, considering the negative consequences associated with it. Pandya (2011) also argues that the most persuasive argument for reducing high-stakes testing is that valuable time can be gained. From a more sceptical position, Taubman (2009) argues that the explosion in testing after NCLB can be explained by the huge profit it represents for several USA companies. The author connects the market ideology directly to not only the idea of improvement and efficiency, but also to economic and business advantages.

2.5.2 Teacher sensemaking of accountability policy.

The review of the market-oriented system was conducted to elucidate how much this policy has affected schools; however, little work has been dedicated to studying how teachers shape this policy within classroom practices. The idea of these actors shaping the policy has solid theoretical and methodological justifications.

From a theoretical point of view, studying the policy implementation from the perspective of the actors provides a meaningful and profound understanding of how macro policies are adapted, adopted or ignored by those who apply the policy reforms. Adopting this

perspective, the success or failure of a policy can be explained according to the specific arena of its implementation. Involving those who are the object of policy changes the lens on how the implementation of reform is investigated. A top-down view is essentially a static approach that omits school as a dynamic unit of analysis. Within this epistemological context, the question of how teachers react becomes crucial to visualising the mechanisms by which the logic of performativity is recreated, and also resisted. In this respect, (Ball & Olmedo, 2013) refer to different responses, although they may depend on market position. Teachers and institutions are likely to display different mechanisms of resistance that could be conceptualised as a 'cost' of this particular process of performativity. For instance, teachers and institutions can work purposefully to create an impression of compliance and the appearance of accountability, creating a representation that does not ensure and in reality does not conform to the transparency required by the new process of accountability.

In the methodological sense, considering the teachers and the principal as key elements required for an understanding of reform policies implies a more comprehensive research approach. Sophisticated quantitative approaches are not sensitive enough to capture the essential aspect of negotiation that, in many cases, the school reform demands. That is why a qualitative research approach can access the fine grain of teacher and principal negotiations, allowing the unfolding of subtle and iterative processes of sensemaking by teachers and principals (Coburn, 2001).

Teacher interpretations are an essential element to study; they form the dynamics of the way that teachers either implement or neglect particular policy reforms (Bridwell-Mitchell, 2013; Coburn, 2001; Fullan, 2001; Louis et al., 2005). The specialised literature has taken teacher interpretations of reforms and linked them to their professional learning community (Fullan, 2001), their informal interactions (Coburn, 2001; Louis et al., 2005) or their institutional logics (Bridwell-Mitchell, 2013). These perspectives offer valuable phenomenological and cultural explanations of teacher interpretations and responses to schooling reform and to external messages. Current research also suggests that teacher and principal interpretations of reform may also be associated with composition of the student body. The extensive school segregation in Chile makes student body composition an essential factor to consider when trying to understand and explain the interpretations and reactions of teachers and principals, as well as the possible consequences regarding effectiveness.

Assuming the position that the inclusion of teachers and school staff in studies is essential to understanding the implications of a macro-policy, the following presents how some authors have explained teachers' sensemaking regarding policy and its consequences when actually implementing the policy in the classroom.

In 'the new meaning of educational change', Fullan (2001) called for a necessary revision in schools. He recognised that one of the most complicated aspects of understanding the meaning of change is to acknowledge schools are fragmented and overloaded. In many educational systems that are introducing reforms or innovations, schools must begin with unwanted and often uncoordinated policies that come from the top down. Within this context, the teachers play a critical role in understanding and sustaining the change; however, trying to identify the teachers' sensemaking in this scenario represents a complex task.

For this author, the problem of change cannot be solved by only considering individual aspects. The issue of what educational change means is systemic; both the small and the big picture have to be elucidated. In the small picture, actors in the system have a role to play. Fullan (2001) confers a great deal of agency to teachers, especially to the professional learning community, to enhance and implement changes. He argued that "the degree of change was strongly related to the extent to which teachers interact with each other providing technical help" (p. 124). Teacher isolation would not sustain a long-term process of change. Thus, Fullan not only promotes teacher communities as a way to nourish long-term learning in students, but also to accommodate to the new culture of accountability. For the big picture, the author used the idea of an infrastructure defined as "the next layer above whatever unit we are focusing on" (p. 18). For example, teachers cannot sustain a change if they are working in a negative school culture.

For Louis et al. (2005) the focus on teacher sensemaking seems to provide a useful framework to study the effect of the accountability system. The authors defined sensemaking as "a process by which teachers' and administrators' interpretations of external demands culminate in formal or informal decisions about how they collectively respond to externally initiated policies" (p. 179). According to the authors, teacher sensemaking depends on the capacity of teachers to develop a collective interpretation of policies. To develop that collective sensemaking, administrators play an essential role in determining the cultural conditions for assuming and implementing policy. The authors argue that neither individual

sensemaking or policy characteristics alone can explain the direction of a policy implementation; instead, factors such as organisational culture and power relationships within the school may help with the final policy implementation. Despite the importance of all the evidence presented relating to collective sensemaking, in the end the authors established that experience with the policy, the role of the district, and the teachers' beliefs about power relations had the greatest impact on teachers' assumptions and implementation within the classroom.

In a similar vein, Coburn (2001) analyses teachers' sensemaking of policies with an emphasis on informal teacher interactions. One of the interests of the author is how individuals make sense of policy messages rooted in their social and interactive professional context. The sensemaking drive of the teachers, according to the author, is social for two reasons. First because it is based on constant interaction and negotiation with peers, and made according to the teachers' pre-existing practices and worldviews. Second, because teachers' sensemaking is a product of their embedded context.

A favourable context for successful sensemaking is one where the culture of collegiality encourages formal and informal interactions between teachers. Louis et al. (2005) assigns crucial importance to the principal and the administrators contributing to the spaces that foster teacher discussion. The authors' findings identify three sub-processes that facilitate sensemaking: creating understanding through interpersonal interactions; selecting in or out messages coming from within or outside the school; and negotiating technical and practical experiences with others. Across this process, teachers make decisions as to which messages can be implemented in their classroom and negotiate technical details of implementation. This researcher's approach expresses that in order to understand the possible impacts of reform, it is necessary to define the school as a dynamic place where different messages and relationships with other institutions mix. Embedded in this context, the formal and informal professional interactions between teachers become essential in describing teacher reconstruction and acceptance of reform policy messages.

A complementary view is presented by Bridwell-Mitchell (2013) who discusses the importance of cultural and institutionalised logic operating within the school in enhancing teacher interpretation and further action in respect of reform policies. According to Bridwell-Mitchell (2013), specific institutional logics form the framework from which teachers

interpret reform. These institutional logics contain the justification for teachers' attitudes and actions. The author identifies three types of institutionalised logics -- productivity logics, technocratic logics, and participatory logics. According to the author's definition, productivity logic, which is concerned with both market and bureaucracies, emphasises a rational and well-planned goal of achievement as well as the outcome itself. Schools that display productivity logic place great importance on the availability of resources and the effectiveness of instructional practices; their teachers can easily accept the prescribed practices of accountability required by policy reforms.

Technocratic logic considers a community of experts to be the appropriate source for making decisions and taking action in the organisation; therefore, professional teacher decisions about what needs to be taught in the classroom are a primary focus for schools that embody this logic. In this case, when policies prescribe teaching practices that are not consistent with the teachers' knowledge and experience, teachers may not be able to apply the mandated policy.

Participatory logic argues that democracy reinforces the importance of consent and participation by the governed. In the school context, the most important decisions made by teachers and principals are those in connection with teaching style and curriculum. A mandated regulation that undermines teacher decisions by creating pressure through continual and strict monitoring, time constraints and limitations on teaching style and curriculum delivery provides teachers and principals with a strong rationale for not using these practices, since they are inconsistent with their beliefs and institutional logic. Indeed, the author points out that a key aspect of policy reforms, especially those oriented around increasing accountability, is that they may impose pressures that are contrary to one of the most important school institutional logics of participation. This pressure to achieve improvement may impair the teachers' sense of professionalism and democracy, thus eroding their willingness to adopt new practices. For this reason, the author states that "understanding the nuance and dynamic and impact of institutional logics helps provide better explanations of school reform" Bridwell-Mitchell (2013, p. 193).

To summarise, there are three findings that are fruitful to pursue. The first one is that teacher sensemaking of a reform illustrates how the policy is perceived and ultimately applied within the school. Teacher sensemaking helps to unfold and understand the policy implications for

school practices. The analysis of this micro process, i.e., teacher interpretation, which is rooted in a complex local context, is indicative of the tensions and contradictions that the macro policy may generate within the school.

The second important dimension for discussion are the factors that make teacher sensemaking possible. Different conditions that facilitate teacher sensemaking have been identified in the research. Fullan (2001), Louis et al. (2005), and Coburn (2001) designate the professional community as a powerful influence on teacher sensemaking. The role of the administrator to enhance this collective space is therefore essential and a determinant of further teacher acceptance or resistance to policy reform. Bridwell-Mitchell (2013) proposes institutional logics as a significant component in understanding the possible justifications that support teacher interpretations. These contributions, however, are considered to be only preliminary and suggestive, leaving the area open for qualitative enquiries to find emerging categories, especially those related to the specific context in which the research is situated. For example, one significant factor that could be explored is the relationship between student body composition and teacher sensemaking. This study argues that in developing countries with endemic school socioeconomic segregation, the composition of the student body forms an important part of the formation of teacher sensemaking.

Finally, it is vital to identify the actual teacher sensemaking and how it connects to learning and school improvement. A significant contribution from critical sociology to this area is its fundamental role in understanding and visualising cost on teacher practices and identity. The meaning of efficacy is explored through an examination of how teachers and schools organise school improvement within a standardised logic of accountability. Schools located in disadvantaged areas in a standardised accountability system may engender additional tensions and conflicts; the participatory process of teacher sensemaking may not be in place. The continual pressure toward quick improvement in student results tends to motivate short-term practices from teachers and principals, which may provoke isolation, alienation and lack of collectivism in the process of teaching and school improvement.

2.6 Conclusion

The Chilean educational system can be situated inside the international logic that sees market principles as the engine of school effectiveness. Notwithstanding the fact that the Chilean model paradigmatically embraced the market principles enunciated by Friedman and

Friedman (1982), competition between schools and parent choice have not yielded the expected results. Chilean empirical research has found that, instead of an improvement in equity, the Chilean design produced a highly segregated educational system. Moreover, the positive achievements of this system cannot be confirmed, and the gains produced by competition have been negligible. The introduction of a significant adjustment to the voucher system was defined as an opportunity to repair the adverse effects of the regressive system of funding; however, a detailed analysis is needed to develop a more comprehensive understanding of the possibilities that this reform could bring, especially for the qualitative aspects of education, such as teaching and learning.

One of the points made in this literature review is that context is a central element to include in a discussion and evaluation of the effectiveness of the system. The criticisms directed at EER serve to recognise and emphasise the need to situate the analysis around the structural aspects that define the function of school as a social institution. One of the fundamental issues generated by the market-oriented system was the effect on the compositional background of the school. In the Chilean case, socioeconomic composition is a key variable that must be taken into account. Inclusion of the implications of the social configuration of enrolment in a school leads to a revision of the parameters used for institutional level comparisons of school effectiveness; and more specifically, to a critical examination of the extent to which schools can be accountable for their results.

In the disadvantaged context, schools facing deprivation and marked by very low socioeconomic backgrounds represent a valuable theoretical opportunity. An examination of this type of school can uncover the key contradictions in educational policies that have reduced the notion of quality to one of performativity. As has been pointed out, the accountability process installed in Chile, and in other countries, is more than a process that makes schools responsible for their results; it has been clearly identified as having a material effect on the processes of teaching and learning. The critical literature offers a conceptual framework to question and analyse this reform, seeking to find the consequences that stakeholders are failing to prevent. As most Chilean research has employed quantitative methods to examine the reforms, the role played by crucial actors such as teachers and principals has been marginalised, whereas a review of the literature establishes that teacher and principal sensemaking can be a valuable voice in interpreting deeply and critically the effects of a system that encourages competition and surveillance as primary forces in driving school improvement.

3 Chapter Three: Methodology

3.1 Introduction

This chapter presents the methodology used in the study, and is divided into three sections. The first section discusses the general research approach (defined as mixed method) and presents the argument and main classifications. The second section introduces the quantitative part of the research, including a definition of the methods, data and planned process of analysis. The third section details the qualitative research, providing an explanation of the chosen strategy and of the rationale behind the selection of the three case studies.

3.2 RESEARCH APPROACH: Mixed method

3.2.1 Background

The main methodological principle of this research is the supremacy of the object of study; in other words, the object of study determines the methodological approach necessary to account for the object. This epistemological approach to the research mandates a definition of the object first.

Education as an object of study is a complex phenomenon characterised by both statics and dynamics. Statics are defined as structural phenomena that, to some extent, help to form the actions of actors within the system. Although not completely deterministic, the structure of a system exerts a significant influence on those inside it. Nonetheless, this influence cannot completely account for educational phenomena. The voices of actors that negotiate and react to the structure must also be included to understand the complex issues of education. It is the interaction between the structure and the agency of the actors that ultimately identifies and gives meaning to schooling. Quantitative measures are useful in outlining and clarifying structure to contribute to the big picture of a complex phenomenon. The big picture, however, remains incomplete in a methodological sense when lacking the agency and meaning produced by relevant actors. The qualitative approach adds the missing elements to complete the picture.

A relevant example to consider is the investigation of school effectiveness illustrated by the studies from the Education Effective Research (EER) movement (Reynolds et al., 2014). The

approaches used to evaluate school effectiveness, teacher effectiveness, and school improvement have largely centred around the use of a single and arguably simplistic research paradigm. While quantitative approaches have improved with regard to methodological complexity and sophistication, they still lack procedures for incorporating sensitivity to specific dynamics and processes related to particular context. In contrast, qualitative approaches bring fruitful insights, but still tend to generate isolated findings disconnected to the larger context. As Sammons (2010) stated, large empirical quantitative research has proven useful for policymakers but less so for practitioners, while illuminating qualitative approaches have been useful for practitioners but less so for policymakers. In other words, both approaches if used exclusively will return a limited definition of context.

A good way to transcend this limitation is to employ **mixed methods research**. This approach has increased substantially in popularity and legitimacy for studying complex phenomena in social science (Johnson et al., 2007; Tashakkori & Teddlie, 2010). Among the reasons for supporting this approach is the fact that integration helps researchers to obtain a finer understanding not only of the structure, but also of the process behind it. For Johnson et al. (2007), defined mixed methods as ‘an intellectual and practical synthesis based on qualitative and quantitative research; it is the third methodological or research paradigm’ (p. 129).

Several authors of school effectiveness research literature have called for the use of mixed methods (Reynolds et al., 2014; Sammons, 2010); however, there is little empirical evidence of implementation in the research. The mechanisms for using mixed methods in this particular field are still under development. This research investigation demonstrates one way to use it, with a discussion of the implementation and the degree of possible complementarity between both methods. Specifically, the quantitative analysis is useful in determining the structural level; in this case, the extent to which student and school background affect the score of the school. This analysis leads inextricably to reflection about the importance of school as an institution that can either redress or maintain the existing system of inequality, and about the impact of school socio-economic segregation on the population. But we also need to comprehend school organisation and teaching practices in order to determine and explain the consequences of context on school effectiveness. Both personal and cultural discourses help to illuminate the role of context in school.

A study of the effect of school SES composition is a necessary task for analysing the particular case of the Chilean system. While socioeconomic background is a significant predictor of school effectiveness, the structural condition of the school remains an influential factor on the outcome; however, the composition of the school cannot be observed deterministically. Schools in disadvantaged contexts display an array of approaches for teaching students from poor socioeconomic backgrounds -- some of the methods are more active in nature, others more passive. School organisation and teaching practices are key factors in overcoming difficulties and boosting effectiveness.

For that reason, school processes cannot be viewed as either deterministic or voluntarist; the complexities of school life demand an analysis that comprehends both of those attributes in an intricate conjunction. Furthermore, school processes are not just affected by the structural process of the background, as in SES composition. Recognising how school organisation, type of leadership, and teaching practices are determined by context offers a dynamic view of structures and processes. A qualitative approach enriches the analysis of context, as well as allowing flexibility in introducing new aspects. One that has emerged as significant in this research is the impact of accountability pressures on school life.

This research employed a two-stage sequential mixed methods design that began with conducting quantitative enquiries to analyse SES compositional effect and its impact on school effectiveness. Those quantitative findings were then used to select representative cases for study and to explore and apprehend the critical educational and organisational processes in schools with high levels of contextual impact. Using both perspectives facilitated the development of a holistic approach for studying effectiveness in socioeconomically disadvantaged schools, and for evaluating the educational market design of the public policy in Chile. The use of mixed methods research made it possible to ask meaningful research questions that could not have been posed by the separate application of quantitative and qualitative approaches.

3.2.2 Type of design

The reality of methodological designs is that they require flexibility and the use of broader definitions in order to respond to different research questions and different ontological and epistemological approaches. Thus, a more parsimonious though more restricted classification that combines quantitative and qualitative research approaches (Greene, Caracelli, & Graham, 1989), can produce a mismatch between the rationale for justification and the actual implementation of the integrated approach (Bryman, 2006, 2007). More recently, Creswell (Creswell, 2015a, 2015b), working in the area of Public Health, has provided new forms for classifying the integration approach that can be useful to the study of school effectiveness.

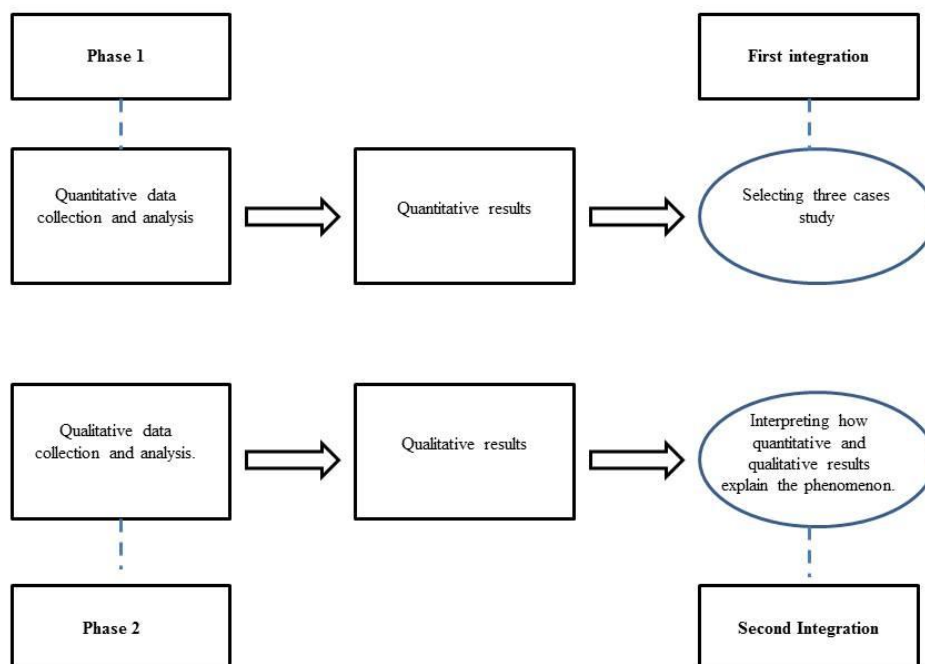
One of Creswell's (2015a) definitions, the **explanatory sequential design**, matches the integrated methodological approach of this research. The study first performed a quantitative data collection and analysis. Then, differing from Creswell's work, the research did not use qualitative data to explain the quantitative results; instead, it expanded and complemented previous results (Bryman, 2006; Greene et al., 1989). The continuum between qualitative and quantitative research formulated by Johnson et al. (2007), locates this research precisely in the middle of the continuum, where both perspectives have equal status. Neither the qualitative or the quantitative methods were subordinate or auxiliary methods. Both approaches had the same level of importance.

Thus, once the quantitative analysis measured the contextual effect on school effectiveness, then the qualitative data performed an in-depth complementary analysis of the schools that exhibited high levels of impact and the resulting effects on school organisation and teaching practices. Although quantitative data was critical in describing the big picture, it was insufficient for understanding the different scenarios lived by principals and teachers in disadvantaged socioeconomic contexts. Together, the results and analyses from both methods provided different insights, and the combination and complementarity allowed the researcher to view the problem from different angles. Thus, the quantitative enquiries illuminated structural conditions, while the qualitative data and analysis provided rich and in-depth personal perspectives of school organisation and teacher performance.

3.2.3 Level of integration

Integration can be executed at different points in the research (Fetters et al., 2013). Although the present research was not a ‘genuine integration’ as described by Bryman (2007), there were two specific moments when quantitative and qualitative approaches were integrated (see figure 3.1). The first moment was the point at which the results from the data articulation in the quantitative analysis made it possible to select significant cases for study. This complementarity prompted the selection of three specific disadvantaged schools with high levels of socioeconomic compositional effect. The second moment of integration was the discussion section of this research. After presenting the quantitative and qualitative results separately, the research articulates the final interpretation and analysis, mixing the weaving and contiguous approaches as explained in Fetters et al. (2013) and Creswell (2015a). At this stage, the research combines both findings to deliver a proportionate, holistic and comprehensive understanding (and illustration) of the effect of context on the effectiveness, organisation, and teaching practices in schools. Data integration, combining quantitative and qualitative data, expanded the range and explanatory power of findings by addressing different dimensions of the same object of study.

Figure 3-1: Procedural diagram for the Mixed Method design.



This figure illustrates both aspects of the research. An extended description can be found in the section dealing with research methodologies.

3.3 Quantitative Approach

3.3.1 Background

Acknowledging the limitations of EER related to theoretical and political scope, this section presents and justifies the methodology to analyse the repercussion of contextual factors on student attainment and school classification with regard to effectiveness. The central aspect discussed in this section involves identifying the means and the methods for incorporating the impact of context on the analysis of school effectiveness.

Methodologically, EER has developed a growing understanding of school as a multidimensional phenomenon that is affected both by internal variables and by variables considered to be non-malleable in relation to school. In a system determined by external accountabilities, finding the variables that affect school effectiveness is relevant not only for a technical perspective but also in the political sense. Studying school impact using multilevel methodology is a substantial improvement to EER; nevertheless, incorporating the school system context has to be handled more seriously. In a socioeconomically segregated educational system like the one in Chile, the inclusion of SES compositional effect is a fundamental requirement for understanding and evaluating schools and their effectiveness.

Considering this stage as the first part of the sequential general research approach, this methodological design seeks to establish the level of SES compositional effect within and between schools with regard to voucher adjustment. Once the impact of contextual variables on school effectiveness is established, the methodological design will facilitate a comparison of school effectiveness that takes into account contextual impact.

3.3.2 Methodology

3.3.3 Data description

The analysis is based on data merged from four different databases. First, the data used in this research corresponds to the 2012 cross sectional data of SIMCE test in the field of Mathematics²⁸ for 4th grade students. The Ministry of Education excluded the score of pupils that came from schools with six or fewer test takers. There were 32.294 student mathematics scores missing. Ultimately, there were 212.219 students and 5.692 schools, with an average of 37 students per school. SIMCE test is census based measure rather than tow-stage sampling, as is the case of PISA tests.

In addition to the SIMCE test, the Ministry added two sets of questionnaires, one for 4th grade teachers and one for parents. The questionnaire of 10.020 teachers includes a series of teacher characteristics (e.g. age, years of experience, further studies, etc.). The parent questionnaire elicits information about student socio-economic status (SES), including family income, level of education, and other variables related to the student's cultural capital and history of school repetition, if any. This dataset contained a total of 203.156 cases. The fourth dataset used was a series of administrative records from the Ministry of Education, which were used to obtain several school characteristics, including sector and total enrolment.

3.3.4 Variables.

This research included a comprehensive range of variables that cover two different levels of analysis -- individual levels and school levels. The following describes both.

Level-1: Student intakes

This set of variables, measured at the student level, includes three groups. The first group describes *student achievement* as measured by the Mathematics SIMCE score (which has an average of 250 points and a standard deviation of 50 points) for 4th grade students. SIMCE scores reflect the student's degree of mastery of the National Curriculum Objectives, which are compulsory for all Chilean schools; and use IRT²⁹ equating to render scores vertically

²⁸ Mathematics test score was chosen at the dependent variable because it is considered by other researchers to be very sensitive to the school composition (Dumay & Dupriez, 2007).

²⁹ The IRT scaling method produces a score by averaging the responses of each student taking into account the difficulty and discriminating power of each item (Dumay & Dupriez, 2007).

equitable from year to year. Several student intake variables were introduced to compensate for the absence of prior achievement measures. One of these inclusions involved the coding of a measure denoting *prior achievement* as dummy variables for ascertaining whether the student repeated at least one previous grade (repeat=1). Another addition describes the pupil's *family characteristics*. As an indicator of socio-economic condition (SES), three variables were factorised: Parent education (including both mother and father) and total family income³⁰. Parent education was measured by the number of years of schooling, while family income was measured using 15 categories of monthly income per family. A proxy for cultural capital was denoted by the number of books in the home. The variable was coded with 1 for more than 50 books at home and 0 for less or none. Finally, *gender* was included (0=male, 1=female). Student achievement was considered an outcome variable. Student SES was designated as a predictor and the remaining variables as control.

Level-2:

a) School characteristics.

This group is divided into predictor variables and control variables. One predictor variable, the average SES, was constructed by averaging the SES of all the students in the school. Another predictor variable, school *selection criteria*, was measured by following the operationalization proposed by Contreras, Sepúlveda, and Bustos (2010) based on the parent questionnaire applied by the Ministry of Education within the SIMCE test. Specifically, the questionnaire asked parents whether the school presented special requirements for pupil enrolment, using 9 different categories³¹, which were then into three main mechanisms.

Selection by Religion indicates whether or not the school requires a baptismal or church marriage certificate from the parents. (1 point if required, 0 if not required). ***Socio-economic selection*** means that the parents had to either provide a certificate of income or attend a parent interview (1 for requirement, 0 for none). In the end, these two categories were not

³⁰ The KMO is .721 and the first factor variance is 75.2 per cent. The extraction was based on Eigenvalue greater than 1; direct oblimin rotation was used.

³¹ The requirements include: birth certificate, preschool grades, legal wedding certificate, former school grades, baptismal or religious wedding, attendance by child at a game session, wage certificate, a written exam or admission exam by the child, and parental interview. Birth certificate was eliminated from the categories, because almost 90 per cent of the parents mention this request; so this requirement can be defined as a bureaucratic antecedent rather than as a factor for student selection.

incorporated into the model because of their lack of statistical significance. Selection by *Student Ability* denotes the stipulation that the student had to either attend a game session or take an admission exam (1 for session or exam, 0 for neither). This description includes a caveat because the question refers to the beginning of enrolment. This includes the possibility that some parents of students in the fourth grade might not remember the details of their child's initial enrolment, especially in the case of students whose attendance began four years before the questionnaire, at kindergarten level. For this reason, it is accepted that 50 per cent affirmative responses in a school establishes the presence of selection mechanisms.

The last predictor variable, *sector*, represents the types of school that exist in the Chilean system at present. Dummy variables for private and subsidised schools are included, with public school as the reference.

3.3.5 Methods.

The Analysis was performed using a Hierarchical Linear Model (HLM) with two-levels. Level-1 is composed of student characteristics and level-2 is made up of school features³². The methodology of multilevel analysis connects variables at different levels simultaneously including various dependencies on hierarchical structures (Goldstein, 2003; Hox, 2002; Snijders & Bosker, 2012). According to Bryk and Raudenbush (1992) each level is represented by its own model that displays the relationship among variables within a given level, specifying how variables at one level affect the relationship occurring at another. To assess the statistical parameters, the Maximum Likelihood (LM) estimation method was used under the assumption that the u_{0j} and r_{ij} are normally distributed.

In order to build the new multilevel model, this research applies the three types of justification developed by Luke (2004) -- empirical, statistical and theoretical. The empirical justification comes from the one-way ANOVA with random effects model (null model) that provides useful preliminary information about how much variation in the outcomes lies within and between schools, which is possible to detect by using the intra-class correlation coefficient (ICC)(O'Connell & McCoach, 2008).

³² There are two reasons for not including class level. One is that the inclusion would imply that only big schools with two or more classes in level fourth would be chosen; and secondly, because teacher variables will be included in the qualitative study.

The ICC can be interpreted as the proportion of the variance not explained by covariates that comes from variation between schools. For instance, an ICC equal to 1 would signify that all students in a school have an identical mathematics score, which means that 100 per cent of the total individual differences exist within the school, implying that looking at the school context is of paramount importance in understanding individual differences in achievement. Accordingly, an ICC equal to 0 indicates that the students do not share any school-related commonalities in mathematics score, suggesting that the differences are similar to those of random samples taken from all types of schools, implying that it is irrelevant to consider school context in understanding differences in mathematics achievement. Although there is no definite threshold to estimate significance, in general, an ICC higher than 10 per cent is considered important³³.

The statistical justification comes from recognising the fact that the cases are not strictly independent; i.e, there are school clusters, which means that there is a hierarchical structure in the data. Finally, the theoretical justification is evaluated in the effort to accomplish a multilevel model that recognises the influence of the context on dependent variables; in this case, the influence of school -- specifically compositional effects and school selection criteria -- on student achievement.

The models were constructed to validate previous research findings as well as to extend their applicability. This includes research that considers model specifications and searches for valid compositional effects (Dumay & Dupriez, 2008; Harker & Tymms, 2004; Thrupp et al., 2002; van Ewijk & Slegers, 2010). Research that discusses specific educational systems (Benito et al., 2014; Cervini, 2009; Collado et al., 2015; Mizala & Torche, 2012; OECD, 2012b; Trevino et al., 2010) is likewise taken into account.

3.3.6 Centering

According to specialised literature, there are different methods in multilevel analysis for scale or centring variables at level 1 and level 2 (Algina & Swaminathan, 2011; Bryk & Raudenbush, 1992; Enders & Tofighi, 2007; Ferron et al., 2008). The reasons for centring respond essentially to two motivations First, Bryk and Raudenbush (1992) state that the

³³ According to Snijders, and Bosker (2012), values between 0.10 and 0.25 are common, though dependent on the type of system studied (as previously mentioned in the literature revision section).

intercept and slope in level 1 become outcome variables at level 2, so it is essential to clearly understand these outcome variables within multilevel analysis. Thus, centring plays a crucial role in interpretation; basically, centring variables accomplish the objective of making meaningful variables that do not have zero point). Secondly, as Enders and Tofighi (2007)) clearly describe, the decision as to what method of centring to use depends greatly on the substantive research questions. The authors state that different methods of centring response exist -- according to the analytical focus -- , mainly for the variables at level 1 (micro level) or level 2 (contextual variables). The two most common forms are centring within clustering (CWC) and centring at the grand mean (CGM).

Researchers who apply CWC can interpret the score of individual variables in comparison to the group mean. For this reason, the CWC primordial interest is on individuals and their relative position within the group to which they belong. In contrast, centring at the grand mean focuses on level 2 variables (contextual analysis). Although both methods offer different interpretations of parameters, they can be used in the same study if the research questions demand it. Therefore, this research uses CGM for level 1 variables, specifically in the analysis of random intercept, and CWC on student SES in the random slope and cross-level interaction analysis.

The centring variables were determined according to information in relevant specialised literature (Algina & Swaminathan, 2011; Bryk & Raudenbush, 1992; Enders & Tofighi, 2007; Ferron et al., 2008) and by the factual use of this method in similar research (Benito et al., 2014; Collado et al., 2015; Manzi et al., 2008; Mizala & Torche, 2012; A. Mizala et al., 2004; Treviño et al., 2014).

In **model 1, 2 and 3** the individual SES was centred at the grand mean (CGM) responding to the focus of analysis in those variables at level 2 (Enders & Tofighi, 2007). From random slope analysis, only individual SES was centred using group or within centring (CWC) while the remaining individual variables were centred at CGM. Compositional SES effect was a direct measure from level 2 predictor. In **model 4**, from random slope analysis, only individual SES was centred using CWC, while the remaining individual variables were centred at CGM. Compositional SES effect is now a direct measure from level 2 predictor. Cross level interactions were also performed. In the case of interaction between one variable at level two mediating the relationship between two variables at level one, the CWC was

used. Where the interaction was made with two variables at level 2, the CGM was used instead (Zhang, Zyphur, & Preacher, 2009).

3.3.7 Analytical steps.

Once these justifications are done, the next step is to develop the model from the bottom up. In order to build the final and more complex model, the methodology starts with the simplest model and increasingly incorporates variables into the analysis. Following the approaches of Bryk and Raudenbush (1992), Luke (2004) and Geiser (2012), four broad classes of multilevel models are developed:

First, the ‘null’ model provides a first attempt and statistical justification for subsequent models. There are two relevant contributions from this starting point. On one hand, the analysis is located to determine the actual variance allocated within and between levels of mathematics achievement. On the other hand, this model produces ICC, which is used as baseline information to compare improvement in the following models, and to evaluate the relative contributions of within-group and between-group predictors. Therefore, the analysis aims to **provide a foundation for choosing multilevel analysis and to determine the importance of the school as a unit of analysis.**

Following the recommendation of several researchers, the multilevel models herein are specified as follows: After construction of the null model, **model 1 looks for SES compositional effect** by examining individual SES variables at the within level, and its aggregation at between-levels. **Model 2** includes two dummy variables associated to the school sector – subsidised schools and fee-paying schools – with public schools as the reference. **Model 3** is part of the controlling model for establishing the compositional effect after the *individual* variables are accounted for. Up this point, the main interest of the investigation is to identify contextual effects and their distribution in different types of schools. Individual variables were fixed, and were included as controls.

Model 4 expands previous models incorporating a random slope. The relationship between mathematics and student SES is allowed to vary within schools, searching for the variability in this relationship across schools. This model makes it possible to measure the **effectiveness** in mathematics achievement and the **equity** of distribution for all types of schools (See table

4.6 and 4.7 for a detailed estimator at each model). All the models discussed here (1, 2, 3 and 4) are specified in *Mplus 7.4* (Muthén & Muthén, 2014).

3.3.8 Model fit and explanatory power of the models

The models presented herein are specified under theoretical and data analysis criteria. In statistical terms, to measure the fit and compare the models to find out which one is the ‘best,’ deviance statistics and Bayesian information criteria (BIC) are applied. The models are also useful in their capacity for explaining the data, namely the proportion of variance not explained by the models. These measures are indicators of the robustness of the models (Burnham & Anderson, 2004; Kuha, 2004).

According to McCoach and Black (2008) the most common methods of model selection are index comparison and the maximum likelihood estimation technique (ML)³⁴. The Akaike information criteria (AIC) and Bayesian information criteria (BIC) are commonly used in index comparison approaches (Burnham & Anderson, 2004; McCoach and Black, 2008; Kuha, 2004). The rationale for choosing BIC rather than AIC is that BIC always considers sample size, which favours a more parsimonious model than AIC and chi-square approaches. Furthermore, Burnham and Anderson (2004) point out that BIC is more commonly used by sociologists and AIC by econometricians, choices that are based on philosophical differences. BIC treats every competing model as the possible ‘true’ model, then estimates the likelihood that the model in question is, indeed, the correct model (Kuha, 2004). In practice terms, the model with lower BIC is designated as the best fitting model.

Another technique of checking model fit is the maximum likelihood estimation technique (ML). Snijders and Bosker (2012) stated that the use of ML delivers the likelihood which can be converted into a deviance statistic. The deviance is a measure of the inadequacy of the fit. Although these techniques are different in nature, they are presented to evaluate the robustness of the model selection. As a complement to the use of model fit, R^2 (sometimes referred as pseudo- R^2) assesses the capacity of a given model to explain the data. According to McCoach and Black (2008), the “*statistic is interpreted as the proportional reduction in*

³⁴ The chi-square difference test analysis (hypothesis testing approaches) was not used in this research, in spite of its frequent use, because of the presence of current criticisms (see McCoach & Black, 2008).

variance for that parameter estimate that results from the use of one model as compared to a base, or comparison, model” (p. 262).

3.4 Qualitative Approach

3.4.1 Background

The qualitative part of the study responds to the necessity to complement and make a profound effort to understand school effectiveness in a market-oriented system. Three schools in disadvantaged areas are included in this study with the purpose of challenging the prevailing idea of school effectiveness, which discounts particular conditions or circumstances, especially those that are conflictive and dynamic.

Determining the level of SES compositional effect and the extent of its impact on school achievement is an essential and substantial component for understanding and measuring the level of school effectiveness correctly. In considering the quantitative findings and the relevance of school as a unit of analysis, it is evident that the quantitative results emphasise the significance of non-malleable school characteristics in explaining the effectiveness of the school. The accountability process initiated by SEP law implied an evaluation of schools based only on publicised school results largely related to SIMCE scores. Instead, it is evident that schools must be made accountable for the elements that are under their control.

Thus, to run a more contextualised analysis of school potential, the accountability process must take into consideration how SES composition affects the internal dynamics of the ongoing everyday activities of teachers and principals. SES composition affects, both directly and indirectly, not just school results, but also how principals and teachers make sense of policy reforms. The purpose of including schools with highly disadvantaged contexts as part of the study is twofold. It amplifies the methodological concern over capturing a dynamic phenomenon, and eliminates the theoretical restriction of school effectiveness research that fails to connect achievement with particular social and educational configurations (Thrupp & Lupton, 2006). Examining school practices in the context of disadvantage helps to understand the connection between setting and student achievement, and how this connection works (Angus, 1993).

In order to avoid criticism related to presenting a one-sided view, the qualitative approach in this research deliberately includes an appraisal from the perspective of those who are subject to the reform, namely, teachers and principals. In the past, studies of the market-oriented

system have been conducted to elucidate to what extent this policy has affected educational achievement; however, there has been almost no investigation into how teachers and principals shape this policy in classrooms and schools. Teacher interpretation is an essential element to consider, as it has the potential to shed light on the dynamics of teacher implementation or neglect of particular policy reforms. In addition, in the study of teacher sensemaking, the association between teacher interpretation and student body composition has not been examined within different studies (Bridwell-Mitchell, 2013; Coburn, 2001; Louis et al., 2005).

The accountability process can be considered not only a procedure for evaluating school effectiveness, but also an object of study with regard to its potential to alter the effectiveness of schools. Accountability is not just a rating process for school success/failure; it is a component that impacts effectiveness and, more importantly, informs our understanding of what constitutes effectiveness. Through qualitative enquiries, it is possible to appreciate how accountability shapes the school organisation and how it affects teacher identities (Ball, 2003; Ball & Olmedo, 2013). The inclusion of schools in disadvantaged contexts into the study area is intended to take stock of the external contradictions and tensions in these scenarios that might influence the performance of the students. Accordingly, the qualitative approach assumes the position that understanding the motivations and behaviour of teachers and staff is a requisite for evaluating the implications of a macro policy and reforms.

3.4.2 Methodology

This research was conducted using the lens of qualitative research. The qualitative logic allowed me to take advantage of its dynamic and flexible methodology and conception of reality to study complex phenomena that are in constant construction and definition.

One of the methodological assumptions in this research is that knowledge is created through action and interaction in a specific context. This assumption approximates the perspectives stated by Dewey and Mead. A second assumption accepts grounded theory as a basic philosophical framework (Corbin & Strauss, 2015). This assumption is made in order to work out how teachers and principals shape their schools, create changes and maintain structures.

At the same time it is important to state that grounded theory methodology (from Glaser perspectives) does not require the construction of theory; instead, it is a method (Corbin & Strauss, 2015) of research that includes useful procedures for exploring, organising and explaining the data in a consistent form. This qualitative analysis is a part of the larger overall purpose of this research; i.e., to explain, through a mixed method approach, the complex actions of schools in disadvantaged areas in a market oriented system of accountability.

3.4.3 Method

The qualitative research section adopts ‘Grounded theory’ as its method. Regarding the debate as to whether grounded theory should be considered a method or methodology (Idrees, Vasconcelos, & Cox, 2011; Lazenbatt & Elliott, 2005; Tan, 2010), this research comes nearer to the ideas of Corbin and Strauss (2015) that view it as a method with a specific focus on analytic techniques. In this sense, the design of this study is more closely related to the ‘paradigm model’ (Corbin & Strauss, 2015) or ‘systematic design’ of Creswell (2015b), rather than to the ‘emerging design’ and ‘constructivist design’ (Tan, 2010). Hence, the design adopts three stages; open coding, axial coding and selective coding.

The first step in the process is a microanalysis, which allows making sense of, and de-constructing the data, considering all possible meanings and interpretations. This microanalysis uses a detailed coding that first takes into account the Principal and head teacher discourses, followed by the teacher’s discourses as a second step. Once all interviews are *de-fragmented*, another analytical tool from grounded theory procedure is applied -- **making comparison**. This comparison is established at different levels. A discourse of what was termed the LEADERSHIP TEAM is obtained first, derived from the Principal and head teacher of different schools. Secondly, comparisons of teachers from the same school and then comparing those with teachers from different schools produce a final discourse -- ‘TEACHERS’. Lastly, different or similar descriptions derived from the teachers and the Leadership team are compared to arrange the first process of open coding.

The second step of the analysis is a deep **description** of all categories produced by constant comparison. Although a description is not a theory, this step is of considerable use in organizing and elucidating the categories presented in the data (Corbin & Strauss, 2015). This description was also useful for uncovering properties and dimensions that account for

variation and complexities. This inductive approach to data initiates a progressively more abstract analysis once the categories are related to a contextual frame and dynamic set of interactions between participants.

The completion of this primary procedure makes it possible to arrive at the second stage of axial coding. The first stage produces various categories, dimensions and properties that contribute to a better understanding of participant discourses. This outcome, however, is limited in that it only generates categories; the second stage then allows these categories to be taken to a more relational level. Axial coding essentially relates categories based on causal conditions, actual practices, and potential consequences that result on or are projected by actors.

Finally, a synthesis via selective coding interprets the interrelationships that emerge from axial coding. This stage uses only main categories, and both induction (categorization from data) and deduction (hypothesizing about concepts and making relationships) can be utilised (Corbin & Strauss, 2015).

3.4.4 Data analysis processes

This research uses the software programme Nvivo 10, which is valuable in grounded theory analysis. This tool enables management of big quantities of data, and is especially useful in managing ideas, querying data, making graphic models of relationships and building data reports (Bazeley, 2007).

To translate the procedure of grounded theory into Nvivo software, the first descriptive analysis is made through an iterative process in two stages. The first stage develops free 'bottom up' coding, and creates a hierarchy of 'tree nodes' that involve structuring ideas and findings. The second stage creates 'coding on' (creating sub-nodes and splitting large broad nodes into smaller child nodes) and 'coding up' (aggregating nodes) after a continuous process of comparison (Bazeley, 2007). For instance, the 'coding on' process is used when concepts derived from Principals and Teachers are merged and then split into sub-categories and properties. The 'coding up' process is used specifically in the comparison between schools.

Another step in the analysis is doing memos and refining existent codes throughout, using continuous comparison between the views of principals and teachers from the same school, and then comparing them to the views of principals and teachers of other schools. An analytical process of interpretation is used to create ‘case nodes’ of participants and schools. This allows for further Nvivo analysis; for example, to establish patterns, make comparisons through queries and matrices, and link ideas and relationships.

3.4.5 Reliability process

There are specific elements incorporated into this investigation to ensure the reliability of the research. One of the most important factors derived from grounded theory procedure -- the constant process of reviewing concepts through **data comparison** -- provides the opportunity to work on validation (Lazenbatt & Elliott, 2005). Another means of establishing reliability is the use of **memos** that help to control distortion during the analysis, allowing the researcher to be aware of personal beliefs and biases. Finally, although the interview process is rarely considered an index of research reliability, this research designed two ‘**pre-test**’ interviews to check the flow and the type of questions that were asked in the research in order to assure the quality of the process of collecting information. Teachers from one public school and one private-subsidised school with opposite socioeconomic classifications (disadvantaged and middle high SES) were chosen for the pre-test interviews. The two pre-test schools are not included in the final study.

3.4.6 Instruments and Participants.

The research utilises Semi-Structured Interviews as a major instrument of investigation. A total of 25 Semi-Structured interviews are recorded for later analysis. These 25 interviews comprise 3 Principals, 3 Head Teachers of Pedagogical-Technical Units and 19 Teachers (see table 3.1). The average duration of these face-to-face interviews is approximately 40 minutes, with a maximum duration of 65 minutes. The interviews were developed by using the literature review as a guide in structuring the main topics for discussion. The actual process of the interviews, however -- as indicated by the term ‘semi-structured’ -- contains enough flexibility to allow relevant topics to emerge that are part of the experience of teachers and principals (See appendix for interview rubric). The interviews were recorded and transcribed verbatim in Spanish; only the passages included in the report were then translated into English.

Table 3-1: List of participant and characteristics

Participant ID	School	Position	Level of teaching*	Years of experience	Gender
P1	C	Principal	Not applicable	7	Female
T1	C	Teacher	2	5	Female
UTP1	C	UTP	1	28	Female
T2	C	Teacher	1	4	Female
T3	C	Teacher	2	24	Female
T4	C	Teacher	2	6	Female
T5	C	Teacher	1	5	Female
P2	A	Principal	Not applicable	3	Male
UTP2	A	UTP	Not applicable	34	Female
T6	A	Teacher	1	32	Male
T7	A	Teacher	2	1	Male
T8	A	Teacher	2	32	Female
T9	A	Teacher	2	21	Female
T10	A	Teacher	1	35	Female
Ps1	A	Psychologist	Not applicable	2	Male
P3	B	Principal	Not applicable	3	Male
T11	B	Teacher	2	11	Female
T12	B	Teacher	1	2	Female
T13	B	Teacher	1	30	Female
T14	B	Teacher	Both	2	Female
Ps2	B	Psychologist	Not applicable	2	Female
T15	B	Teacher	2	10	Male
UTP3	B	UTP	Not applicable	10	Female
	Other	Teacher	1	5	Female
	Other	Teacher	1	5	Male

*There are two teaching levels. The first cycle corresponds to students in grades 1-4 and the second cycle to students in grades 5-8.

In order to be granted access to schools, principals and teachers, an ethics approval was required. To this end, the Universidad de Concepcion, Chile, and its Department of Research checked the project and its objectives as well as the Informed Consent forms. Once ethical approval was obtained, the local educational authorities of public schools and the owners of private subsidised schools were contacted. They gave us their permission to conduct interviews with principals and teachers, as long as their participation was voluntary. After that, the principals had to agree to their voluntary participation in the research, and a corresponding authorisation had to be obtained from the teachers for their participation. All the principals agreed to participate. Some of the teachers decided to participate in the

research and gave permission in writing for the interviews to be recorded and used for subsequent analysis.

3.4.7 Sampling

The sampling strategy can be defined as **non-probabilistic**. The type of non-probabilistic strategy is **purposive** because the cases are selected as rare and unusual, based on the findings from the statistical analysis. The previous quantitative approach sought to determine the level of impact of the composition effect, particularly in reference to SES characteristics. Using two levels of a hierarchical linear model and modelling the random intercept and random slope permits the researcher to obtain a specific score of the relationship of SES and math achievement for each individual school. The estimate of these parameters serves to explore important within-school features that are critical to determine how a school develops its educational strategies to confront complex educational scenarios in a disadvantaged context.

In the case, the random slope (RS) means the raw regression weights between SES on math achievement. The largest effect according to statistical results is reported at 13.387 and the lowest at 2.711. To illustrate, a school with a score of 13.387 reflects the greatest impact of SES on math achievement of any school in the sample. Accordingly, a score of 2.711 indicates the least impact. This interpretation theoretically implies that a high score from schools with low socioeconomic background reflects a negative impact on math achievement and consequently the potential to impact on other aspects of school organization, although the logic sequence is not necessarily in that direction. Interestingly, the cases selected exhibit high to middle RS impact (see table 3.2). Qualitatively, it would be interesting to know if these schools demonstrate internal differences in school organisation related to their differential family SES impact.

Table 3-2: Summary of School characteristics

School characteristics	SCHOOL		
	A	B	C
Type of School	Pub	Pub	Pv Subs
per cent Disadvantaged students	75	95	82
GSE	Middle Low	Low	Middle Low
RS	11	8,9	6,5
SEP Classification (2012)	Emerging	Autonomous	Autonomous
Enrolment (2014)	848	257	500

By combining other indicators, it became possible to select potential schools that were interested in exploring these issues using a deeper methodological strategy. Five indicators were used for this purpose. The first indicator measured the socioeconomic background of the school as directly designated by the Ministry of Education (GSE). This was a categorical variable with a range of four alternatives between low and high socioeconomic classification. Only schools with low and middle-low SES levels were chosen. Two types of school were added, with administrative control being either public (Pub) or private subsidised (Pv. Subs). Subsequently, different measures of SIMCE achievement (from 2009 to 2015) were also added. Although these scores cannot be taken as a longitudinal parameter, they give a sense of the performance at the school.

School location was considered in an opportunistic fashion because with regard to this aspect of the research, there was no intention of choosing representative cases, but rather to use cases as examples of specific conditions of interest for deeper exploration. All schools were located in the same mid-sized urban town of around 100,000 inhabitants. Although the name of the county must be withheld in order not to identify the participating schools, the location of the county is the Bio Bio region, which is the second biggest region in the country.

All three schools are very interesting case studies, and the qualitative approach facilitated the exploration of the differences in school organisation and teacher practices that led to the attainment of their particular results.

3.4.8 Description of Cases

In total, three schools were chosen for this research. For the reasons previously discussed, these types of cases may prove to be a significant test of the “school effectiveness” framework and of the elements of the educational policy. The following section provides a sketch of the general context of each school.

3.4.9 School A

School A is a public school and the biggest of all three schools; in fact, it is the biggest public school in the county. Enrolment in 2014 rose to 848 students. This number led to increased access to funding; as the Principal acknowledged, ‘we are known as the richest school here’ (P2).

The surrounding areas of the school are also favourable, and the location is central. Its infrastructure, facilities and equipment are substantial and the environment of the school appears clean and safe. Despite revealing a high proportion of disadvantaged students (75 per cent), this is an average number relative to public school enrolment. This school was classified by the Ministry of Education as having a middle-low SES. A significant decline in SIMCE results from 2012 to 2015 became an important milestone for this school. To appreciate the context of SIMCE in **school A**, table 3.3 presents the SIMCE test results from 2009 to 2015, by different subjects.

Table 3-3: Summary of SIMCE results, School A, by year and subject.

Subjects/years	2009	2011	2012	2013	2014	2015
Year 2						
Literacy	-	-	256	234	247	225 (-15)*
Year 4						
Math	-	256	277	222	243 (0)	233 (-28)
Literacy	-	256	268	240	251 (0)	253 (-13)
Year 6						
Math	-	-	-	212	240	213 (-38)
Literacy	-	-	-	228	233	215 (-32)
History & Social Science	-	-	-	-	-	221 (-28)
Year 8						
Math	233	240	-	226	243 (-21)	232 (-12)
Literacy	221	244	-	218	216 (-26)	211 (-19)
Natural Science	233	242	-	238	-	243 (-5)

Source: Ministry of Education, Chile. www.agenciaeducacion.cl

*Numbers in parenthesis refer to a comparative measure; how many points the school performed comparing with similar SES school. The signs (+/-) means school outperformed (+) or underperformed (-) other similar schools.

- Tests were not taken in these years.

Considering table 3.3, and according to the Ministry of Education, school A consistently displayed lower SIMCE scores than schools with comparable SES. Acknowledging the difficulty of comparing schools according to SIMCE scores that results from the application of the test in different years and subjects, this school is nonetheless currently defined as underperforming, relative to the performance of other schools with comparable SES student background.

3.4.10 School B

School B is also a public school but is the smallest school in this sample; its enrolment at 2014 was approximately 257 students. As the level of enrolment largely determines the school's level of funding, this case reveals the least advantage of the three cases. Moreover, the proportion of disadvantaged students is the highest (95 per cent) and its surrounding area is clearly disadvantaged and marginalised (even stigmatised). Teachers and principal describe this context as severely damaged, with high levels of violence and criminal activity. Drug trafficking is one of the major forms of criminal activity. Only in recent years has the area shown a break in this context, with the installation of new shopping facilities and better road access to the neighbourhood. Despite this negative context, this school achieved high SIMCE scores. Taking into account socioeconomic background, this school displays above normal performance relative to the national average in its category. Its infrastructure is adequate, although not well maintained. The look of the school is rather depressing and it lacks a clean environment. This school was classified by the Ministry of Education as having a low SES.

The SIMCE results in this school can be considered positive as compared with similar SES schools. According to the Ministry of Education, this school has performed higher than similar SES schools in different years and subjects. Table 3.4 displays a summary of results.

Table 3-4: Summary of SIMCE results, School B, by year and subject.

Subjects/years	2009	2011	2012	2013	2014	2015
Year 2						
Literacy	-	-	239	260	261	237 (+4)*
Year 4						
Math	-	267	261	239	264 (+31)	233 (-1)
Literacy	-	285	262	264	251 (+6)	262 (+17)
Year 6						
Math	-	-	-	215	259	218 (-6)
Literacy	-	-	-	220	207	220 (-7)
History & Social Science	-	-	-	-	-	207 (-19)
Year 8						
Math	234	230	-	211	239 (+6)	229 (-4)
Literacy	229	256	-	194	244 (-12)	232 (+7)
Natural Science	235	233	-	245	-	235 (-6)

Source: Ministry of Education, Chile. www.agenciaeducacion.cl

*Numbers in parenthesis refer to a comparative measure of the school's performance points as compared with similar SES schools. The signs (+/-) indicate whether the school outperformed (+) or underperformed (-) other similar schools.

- Tests were not taken in these years.

3.4.11 School C

School C is a private subsidised school with an enrolment of around 500 students, a high proportion of disadvantaged students (82 per cent) and a location in a marginalised area. Although the area is quite poor and lacking in cultural facilities, it is not as profoundly disadvantaged as school B, while still having a problem of transport connectivity. Nevertheless, this school had good infrastructure and equipment, revealing a clean and safe atmosphere, and a visually orderly environment. In addition to these positive qualities, the school also exhibited the highest student performance in SIMCE scores since 2010 within this sample. This school performance was around 30 points more than the national average, considering its SES classification of middle-low. One of the clear milestones for the school as acknowledged by the principal and the teachers took place in 2008, the year that the principal took up her appointment and the new agreement was signed with the Ministry of Education regarding the SEP law.

According to the Ministry of Education, school C outperformed schools with a similar SES. Table 3.5 displays a consistently positive result through all years and subjects.

Table 3-5: Summary of SIMCE results, School C, by year and subject.

Subjects/years	2009	2011	2012	2013	2014	2015
Year 2						
Literacy	-	-	251	250	268	244 (+4)*
Year 4						
Math	-	251	265	279	264 (+21)	264 (+19)
Literacy	-	275	282	285	282 (+31)	274 (+23)
Year 6						
Math	-	-	-	234	257	263 (+31)
Literacy	-	-	-	243	249	259 (+28)
History & Social Science	-	-	-	-	-	270 (+37)
Year 8						
Math	251	281	-	272	271 (+45)	260 (+16)
Literacy	252	278	-	277	278 (+54)	247 (+17)
Natural Science	247	273	-	276	-	262 (+14)

Source: Ministry of Education, Chile. www.agenciaeducacion.cl

*Numbers in parenthesis refer to a comparative measure of the school's performance points as compared with similar SES schools. The signs (+/-) indicate whether the school outperformed (+) or underperformed (-) other similar schools.

- Tests were not taken in these years.

3.5 Conclusion

This chapter has presented the overall method of the study. It detailed comprehensively the aspects of a rigorous and robust methodology design that included data collections and analyses incorporating a mix of quantitative and qualitative approaches.

Defining and presenting the analysis as mixed method research allowed me to achieve the aim of this investigation: studying the effectiveness of schools within a market-oriented system considering socio-economic context. Implementing a sequential approach, this research included not only the big picture of the macro processes in the Chilean educational system, but also incorporated relevant dynamic micro processes to illustrate the agency of individual actors within schools, as well as policy contradictions and long-lasting educational effects.

The mixed method approach outlined herein strengthens the perspective of educational effectiveness research, taking the specifics of context as fundamental to an understanding of school impact, and allowing an assessment of the possibilities of achieving both effectiveness and equity in the current educational policy in Chile. The next chapter presents the quantitative results that serve as a base for the succeeding qualitative analysis.

4 Chapter Four: Quantitative Results

4.1 Introduction

This chapter presents the macro analysis of the Chilean educational system. As described in chapter three, I used an extensive data set to determine the level of school impact on mathematic achievement and the effect of socioeconomic factors in school effectiveness comparisons between different school types.

The chapter is divided into two sections. The first section presents a description of the magnitude of the contextual variables in the schools, such as achievement distribution by SES and selection mechanisms employed. The second section presents the multilevel analysis. Through different model specifications, this segment presents the SES compositional effect in Chile, examining its impact within and between schools.

4.2 Descriptive analysis:

4.2.1 Achievement distribution by SES.

Differences in enrolment between distinct types of schools are evident in the Chilean system. According to the data results from fourth-grade student SIMCE testing, the total enrolment in 2012 by type of schools was as follows: 40.6 per cent in public schools; 52.1 per cent in private subsidised schools; and 7.4 per cent in private-fee schools. Additionally, according to the Ministry SES school classification, there is a clear pattern in the dataset of enrolment distribution between different types of schools. Table 4.1 presents the distribution of school sector by SES index for Chilean 4th graders by quintile. Table 4.1 shows the distribution of different niches in the school sector. Private-fee schools educate the upper class; 98 per cent of their enrolment comes from families in the wealthiest quintile. Private subsidised schools enrol a broader range of students, although more come from upper-middle-class groups. Public schools also display a more comprehensive enrolment profile; however, most of their pupils come from the lower and lower-middle class.

Table 4-1: Enrolment in school sector by family SES quintile, 4th graders, Chile 2012.

Family SES* by quintile		School sector by per cent			Total
		Public	Private Subsidised	Private fee	
Low	1	21	4.9	0	11.1
	2	52.6	17.5	0	30.4
	3	24.1	46.1	0	33.8
	4	2.4	29.2	2.5	16.4
High	5	0	2.2	97.5	8.3
Total		100	100	100	100

*Sch_SES comprised five categories: 1- Low SES; 2- Middle low SES; 3- Middle SES; 4- Middle high SES; 5- High SES.

Although the evidence cited here does provide a clear pattern, a more robust technique is called for in order to define the Chilean system as socioeconomically segregated. The proportion of variance in SES between schools can provide vital information of a phenomenon that Willms (2010) designates as ‘horizontal segregation’. Using the simplest model in multilevel analysis, the **level of segregation associated with SES ascends to 63 per cent in Chile**. This level is higher than the reports from researchers who use PISA databases (OECD, 2012b; Willms, 2010). This descriptive information serves to confirm the presence of school segregation in Chilean system.

To establish a point of comparison, the following tables display a series of descriptive statistics related to school achievement, type of school, and SES characterisation. Table 4.2 compares educational achievement across the sector; the main variable is Mathematics test score in a national standardised test (SIMCE) administrated by the Ministry of Education to 4th graders in 2012. Table 4.2 shows four levels of school achievement -- low, middle-low, middle-high and high. As reported in Chilean research, the achievement distribution clearly follows a socioeconomic pattern. Regarding total enrolment by sector, public and private subsidised school admissions appear with significant frequency at lower levels of achievement, although private subsidised schools display better results. In contrast, 87 per cent of private-fee school enrolments exhibit a higher standard of student attainment corresponding with this classification system. Interestingly, the three types of school share a similar percentage of students in the middle-high range of achievement.

Table 4-2: Level of school mathematics achievement by school sector, 4th graders, Chile 2012.

Level of school achievement	School sector by per cent			
	Public	Private Subsidised	Private fee	Total
1. Low (103-200)	17.6	8.9	1.7	11.7
2. Middle low (201-250)	33.9	28.2	10.9	29
3. Middle high (251-300)	32.7	39.1	35.7	36.4
4. High (301-379)	15.8	23.8	51.7	22.9
Total	100	100	100	100
School achievement mean	249	266	300	262

Table 4.3 further clarifies the association between the level of school achievement and the family income of the students. At the bottom of the scale, school performance decreases as family SES decreases; and the reverse occurs at the top of the scale, with increase in performance accompanying an increase in family SES. In other words, student achievement moves in the same direction as an increase in family SES.

Table 4-3: Level of school achievement by school SES, 4th graders, Chile 2012.

Level of school achievement	School SES by quintile per cent				
	1	2	3	4	5
1. Low (103-200)	23.1	18	9.9	4	1.5
2. Middle low (201-250)	35.6	35.6	30.2	21.5	11.1
3. Middle high (251-300)	29	32.1	38.8	42.5	36.2
4. High (301-379)	12.3	14.3	21.2	32	51.2

Despite the distinct pattern evidenced by these tables, the question still remains whether private schools are more effective than public schools. With this level of information, it is still not possible to venture a response without bias. To construct a more reliable response, the first step must be to add variables pertaining to school characteristics. One of these relevant variables is the school mechanism of student selection.

4.2.2 School selection mechanisms:

As demonstrated in the literature review, the Chilean educational system displays a high level of socioeconomic segregation. To discern the mechanisms that the schools employ in selecting students and determine the extent to which they are used is a significant task. Despite the banning of school selection criteria until the 6th grade, some selection implementations are still pervasive in some schools. Use of the parent questionnaire helps to approximate the magnitude and techniques of school selection criteria. Specifically, the

survey used nine different categories to ask parents whether the school requested specific requirements to enrol their pupils. As presented earlier in the methodological section, based on Contreras et al. (2010) classification, 51 per cent of the students were enrolled using at least one form of school selection. At 14 per cent, public schools displayed the lowest percentage of students selected by at least one criterion. In the case of private subsidised schools, 72 per cent of parents reported specific requirements for enrolment, while in private-fee schools the number rose to 98 per cent.

Table 4.4 displays a specific percentage of the distribution of selection by different criteria by type of school. Among the various standards of school selection, selection according to student ability was the most important. According to parents, public schools applied these criteria to 14 per cent of their students; 68 per cent in private subsidised schools, and 93 per cent in private fee schools. Selection according to ability was widespread among all the percentages. In the case of selection based on SES, private-fee schools revealed the highest level (92 per cent), followed by private subsidised schools (37 per cent) and the lowest level in public schools (2 per cent). Selection by religion was less frequent, with private-fee schools using this criterion much more frequently. In addition, it is important to recognise that schools can combine and use different criteria simultaneously.

Table 4-4: Percentage of student enrolment by selection criteria and sector, using SIMCE parent questionnaire, 2012.

Selection Criteria	Sector by per cent of enrolment per selection criteria.		
	Public School	Private Subsidised	Private-fee
Ability	14	68	93
SES	2	37	92
Religion	0	13	36
Some selection mechanisms	14	72	98
Total			51

Although this cross-sectional information could not be compared with previous data, it is illustrative to mention that Contreras et al. (2010), using data from SIMCE 2005, found that 31 per cent of all students in school were enrolled according to some form of selection. Differentiating between types of schools, the figures for enrolment by selection were 6 per

cent for public schools and 56 per cent for subsidised schools.³⁵ These data manifest an increase in enrolment by selection, even in public schools. In 2008, in Chile, two laws were enacted that prohibited the selection of students for enrolment. The first one was the SEP law (2008) that regulated the selection of vulnerable students and the second one was the Education General Law (LGE in Spanish) (2007-2009) that applied the prohibition to students before year 6³⁶.

The data from these descriptive analyses displays an apparent association between achievement and the socioeconomic characteristics of school classification. The data further demonstrates an active pattern of school selection. To make the analysis more robust, different school variables need to be added; and school selection mechanisms are one of the variables to include. Socioeconomic school characteristics are another key variable to provide an analytical perspective of school achievement with regard to social background. These two additional aspects are fundamental in obtaining a closer measure of the real impact of particular schools on student performance. The following multilevel analysis incorporates these additional individual and school variables.

4.3 Multilevel Analysis

An important feature of this research is a comparison of how the specification of different models fit the data, and how they offer a better explanation of the determinants of student attainment. To accomplish this, the models are built not only by considering the bottom up specification, but also by considering different specification and data. The purpose of this feature is to allow a comparison between the results of introducing different variables into the models with the current results recorded in the literature. Two-level analysis is therefore used to develop the null model.

This first study conducted responds to two essential objectives. The first of these objectives is to determine whether multilevel analysis is necessary; namely, whether there is a cluster in the data that makes it worthwhile to use multilevel analysis. The second objective, in case

³⁵ This research did not include private-fee schools.

³⁶ Some researchers state that this last law has ambiguous articles that can be interpreted differently, thereby allowing the use of selection by schools that base their practices on their interpretation of these articles. See, for example, Carrasco, Bogolasky, Flores, Gutierrez and San Martin (2014). Selección de estudiantes y desigualdad educacional en Chile. ¿Que tan coactiva es la regulación que la prohíbe? [Student selection and educational inequality in Chile]. FONIDE, Mineduc, Chile. www.centroestudios.mineduc.cl

that a cluster in the data does exist, is to answer how significant it is and if there is any indication of a difference according to school classifications.

1. Partitioning the variance in mathematics test score, two-level analysis. **Intercept only model (null model).**

The null model is the simplest model possible. At level-1, the individual scores in Mathematic y_{ij} are decomposed into the cluster mean β_{0j} plus the individual specific deviation from the cluster mean r_{ij} :

Model 0:

$$L1: y_{ij} = \beta_{0j} + r_{ij} \quad [0.1]$$

At level-two variability in the cluster mean π_{0j} is modelled. The cluster mean are decomposed into the grand mean across all school (γ_{00}) plus the deviation of the cluster mean from the grand mean (u_{0j}):

$$L2: \beta_{0j} = \gamma_{00} + u_{0j} \quad [0.2]$$

According to Geiser (2012), in the null model it is possible to obtain the following parameters:

At leve-1 (within):

- The variance of the individual scores around the cluster means, $\sigma_{rij}^2 = \sigma_w^2$

At level-2 (between):

- The grand mean γ_{00}
- The variance of the cluster means around the grand mean, $\sigma_{u0j}^2 = \sigma_B^2$

Now, to address the first objective about the necessity of ML, Table 4.5 displays the general and specific ICC for schools. The null model indicates that generally 29 per cent of the variance in student test score occurs between schools. The intra-class correlation (ICC=0.29) reveals a substantial clustering of individual mathematics score within schools, evidenced by **29 per cent of the total individual differences in Mathematics score occurring at the school level. This grade of clustering in the data might be attributable to contextual school factors; namely, the grouping according to schools leads to a significant**

similarity among the results of different students in the same school. Since 29 per cent of the total variance in mathematics score is attributable to the school, 71 per cent is therefore attributable to the students.

As the findings above implicate the school as a distinct resource of mathematics score variation, the data were nested into school. Once ICC was strong enough, it became possible to affirm that **multilevel analysis is decidedly needed in order to take into account the nested and dependence of data, which in this case means the students in school.**

To address the second objective -- to determine how much Chilean primary schools vary in mathematics achievement -- Table 4.5 shows that the between-variance differs significantly throughout the school sector.

Private subsidised and private-fee schools are very similar in their ICC and dissimilar from public schools, which indicate that contextual school factors play a greater role in affecting mathematics score in those schools than they do in public schools. At this stage in the research, it is not possible to argue about the specific causes related to that difference; however, it can be hypothesised that the differences might pertain to the student intake process, especially as it relates to SES characteristics.

Table 4-5: Null model. Percentages of the total between-variance in mathematics by type of schools, 4th grade 2012.

4th grade 2012	Between- Variance	Within- Variance	Percentage of between-variance (ICC)
All	711.683	1768.948	29 per cent
Public	520.159	1958.099	21 per cent
Subsidised	624.062	1687.884	27 per cent
Private-fee	486.806	1421.578	26 per cent

It is possible to conclude that there is some evidence of a context phenomenon shaping a common individual mathematics level; in other words, the school that a student attends is particularly relevant to the student's performance on mathematics. Finally, this null model does not predict any variance in mathematics score; however, its parameters serve as a benchmark for developing a more sophisticated model to see how variance and standard error vary once predictors at level-1 and level-2 are introduced. The most important message here

is that school characteristics are significant contributors to understanding the student's achievement.

4.3.1 Compositional effect in Chile

The following **model 1** offers the possibility of measuring the existence and the level of school effect, which indicates the relationship between school characteristics -- in this case, average school SES and outcome of the schooling (mathematics achievement). Owing to the existing literature on school segregation in Chile and the researchers who considered multilevel analysis (Collado et al., 2015; Mizala & Torche, 2012; OECD, 2010), this research expects to find a high level of SES composition effect.

According to O'Connell and McCoach (2008), in general, school effect research is focused on two factors related to differences in student outcome; i.e., differences within school and differences between schools. As the previous part of the research is mainly concerned with differences between schools, the random intercept model is used. The null model is more suitable for exploring how much variation exists in mathematics outcomes in a school. Hereafter, the model must be suited for examining to **what extent do schooling outcomes vary for students of different socioeconomic status**, which is a question that pertains to issues of equity in the Chilean educational system.

Following two steps annotations (Raudenbush & Bryk, 1986), the next model decomposed variability within (level 1) and between (level 2).

The within-school model is

Model 1

$$y_{ij} = \beta_{j0} + \beta_{j1}(SES)_{ij} + r_{ij} \quad [1.1]$$

Where

- y_{ij} is mathematics achievement for student i in school j
- β_{j0} is the mean mathematics achievement for school j
- β_{j1} is the SES-achievement relationship in school j
- SES_{ij1} is the SES of student i in school j (a composite variable)
- r_{ij} is the error of estimate for student i in school j

The between model is

$$\beta_{j0} = \gamma_{00} + \gamma_{01}(schSES)_j + \mu_{0j}, \quad [1.2]$$

$$\beta_{j1} = \gamma_{10} \quad [1.3]$$

γ_{00} , is the grand mean for mathematics achievement across all schools

γ_{10} , is the mean slope for the SES-achievement relationship pooled within all schools

γ_{01} , is the compositional effect

μ_{j0} , is the error of estimate

Considering the second research questions related to the existence of compositional SES effects, **model 1** included the between-schools and within-schools SES effects. The SES composition effect was treated as fixed (the same for all schools) resulting in $\beta_{j1} = \gamma_{10}$ at the school level. Moreover, as level-1 SES was centring at the grand mean, the γ_{01} is directly interpreted as a compositional effect. Table 4.6 shows the parameters for this model and for the rest of the models.

As expected, an interpretation of the results of this model shows that both the individual SES and the school mean SES demonstrates statistically significant effects in schools with a high average SES. According to estimates, mean achievement levels vary across schools, with a significant relationship between mathematics achievement and SES. This indicates that the between-school effect is greater than the within-school effect (i.e., a 1-unit increase in SES has a stronger effect on mathematics achievement for schools as a whole, compared to the effect on individuals within schools). Individual SES within schools impacts performance significantly on mathematics achievement -- around 10 points -- and at the aggregated between-school level, the SES effect is roughly 11 points higher in mathematics achievement for an extra point of average school SES. To clarify, according to the CGM interpretation, the model displays that, for each extra point in average school SES, a student's mathematics achievement increases an average of around 11 points. **Using standard coefficient, individual SES and school SES are equivalent to 22 per cent and 38.5 per cent of a standard deviation in test score, respectively.**

In other words, disadvantaged students (regarding SES) do worse in disadvantaged schools than they would have done in school with a more mixed SES composition (double disadvantage). In general, so far it can be said that:

- certain types of schools show stronger SES effects, and
- whole school SES effects are stronger than individual SES

About the null model, this compositional model with SES as fixed effect explains 39 per cent of between-variance in the intercept and 2 per cent of the within-variance. Thus, there was an increase of 10 per cent in between-variance (see Table 4.7).

While it is now possible to establish the presence of a compositional effect, it is still necessary to determine whether the SES compositional effect is real or persistent by adding new variables both within and between levels. According to specialised literature (Bryk & Raudenbush, 1992; Harker & Tymms, 2004; Snijders & Bosker, 2012), adding more variables can either strengthen the compositional effect or go as far in the opposite direction as to make it disappear. In **model 2**, the new variable added was a type of school with a double purpose. On one hand, this new variable serves to **examine the extent to which the SES effect persists when controlling for a different type of schools**. On the other hand, it also works to recognise the differences in mathematics achievement between schools after controlling for the compositional effect.

Model 2

The within-school model is

$$y_{ij} = \beta_{j0} + \beta_{j1}(SES)_{ij} + r_{ij} \quad [1.1]$$

Extended between-school level

[2.1]

$$\beta_{j0} = \gamma_{00} + \gamma_{01}schSES_{j1} + \gamma_{02}subsidised_{j2} + \gamma_{03}fee - paying_{j3} + \mu_{j0},$$

$$\beta_{j1} = \gamma_{10} \quad [2.2]$$

Interpretation of the results obtained by this model specification of adding a type of school shows that the differences between individual SES and school SES are still significant, and become even greater. School SES becomes even more important on mathematics achievement when controlling by sector. The compositional effect is significant, and it increases by 13 points in mathematics achievement, raising the average SES by one point. **Thus, adding a type of school strengthens the SES compositional effect.**

In looking for differences in mathematics achievement between types of school, controlling for SES variables, it is of particular importance to establish accurate comparisons of school effectiveness. **The present model indicates that public schools perform better than private subsidised schools, although the difference is not statistically significant.** In

comparison with **private fee schools**, **public schools are significantly different**, outperforming private fee schools by 9 points once individual and aggregated SESs were included; however, when the same comparison is made without the use of control variables, the differences exhibit a very different pattern. Here, private subsidised and private-fee schools scored higher than public schools by 13 and 46 points, respectively. This result is of great importance in evaluating school differences in that it helps to separate effects caused by the school from those pertaining to the background of the student, especially when those student characteristics are taken at the aggregate level. **Regarding standard coefficient, school SES represents 46 per cent of a standard deviation in mathematics score, more than double than that of individual SES impact.**

Finally, a comparison with the null model -- model 2 with individual variables as fixed effect -- gives almost the same results as the previous model; 40 per cent of the between-variance in the intercept, and 2 per cent of the within-variance. The type of school, therefore, does not contribute to an increase in the between-variance, though it seems to affect the compositional effect on mathematics achievement. Model 2 did not present significant improvement in model fit either (using loglikelihood and BIC approach; see table 4.8). Nevertheless, it is useful to see the differences between school types, as they are highly relevant for this study.

The results of model 1 and model 2 should be taken as preliminary. Certainly, on the one hand, the compositional effect is significant, and on the other hand, there is a relationship between *sectors* by averaging achievement; however, caution must be exercised in the interpretation because the results can still form a part of misspecification of either the within-school or the between-school models (Bryk & Raudenbush, 1992; Dumay & Dupriez, 2008; Harker & Tymms, 2004; Thrupp et al., 2002; van Ewijk & Slegers, 2010).

Other relevant variables are academic background (Harker & Tymms, 2004) (measured by the extent of the previous repetition); cultural capital (number of books at home); and gender (Dumay & Dupriez, 2008). The next model expands the within specifications to establish a more robust control over the student background variable. This model did not contain a level-2 variable; its main objective is to provide a transitional model (for a more complex one) and to continue searching for changes in the significance of SES compositional effects. In this sense, **model 3** presents a more complex compositional effect model through the inclusion of student-level variables. All individual variables were kept fixed, in accordance with the analytical aim of identifying compositional effects and their impact on mathematics

achievement among schools, controlling for relevant individual characteristics (Nash, 2003; Thrupp et al., 2002).

Process for expanding the within-school model:

Model 3

$$y_{ij} = \beta_{j0} + \beta_{j1}SES_{ij1} + \beta_{j2}female_{ij2} + \beta_{j3}Book_{ij3} + \beta_{j4}Repetition_{ij4} + r_{j1} \quad [3.1]$$

The between model is

$$\beta_{j0} = \gamma_{00} + \gamma_{j01}(schSES)_j + \gamma_{j02}subsidised_{j2} + \gamma_{j03}fee - paying_{j3} + \mu_{0j}, \quad [1.2]$$

$$\beta_{j1} = \gamma_{10} \quad [1.3]$$

$$\beta_{j2} = \gamma_{20}$$

$$\beta_{j3} = \gamma_{30}$$

$$\beta_{j4} = \gamma_{40}$$

Even with the addition of these three measures (gender, cultural capital and previous ability), individual SES remains statistically significant, albeit slightly reduced by 2 points. The resulting within-model indicates that cultural capital has a positive effect on mathematics achievement, whereas being female and repeating a year or more has a negative effect. Specifically, being female relates to minus 9 points in mathematics score, when individual variables in the model are held fixed. Moreover, repetition of at least one grade results in a loss of nearly 21 points in mathematics score. Previous ability is the most decisive variable of the model, and its impact is stronger than the remaining individual variables when kept constant. Finally, a one point increase in cultural capital corresponds with a 4 point increase in mathematics achievement, keeping the other variables constant.

At between-levels, a one point gain in school SES represents 12 additional points in mathematics achievement, controlling for individual variables. Private subsidised schools are not significantly different from public schools, and the difference between public and private fee-paying schools decreases by 2 points when controlling for the rest of the variables. Therefore, **model 3** fulfilled an important objective: To confirm that, **when compositional effects have been isolated from individual, confounding, and suppressor factors, SES composition effects remain significant, although slightly reduced.** Compared to the null model, Model 3 shows a slight increase in within and between variance (4 and 3 per cent

respectively). In terms of model fit, model 3 was better than model 2, considering the loglikelihood ratio approach; see Table 4.8.

In sum, model 1 establishes the presence of compositional effect on mathematics achievement. Model 2 provides control by introducing a type of school, which increases the effect on SES composition. Model 3 provides a more robust specification of within school, adding different individual significant characteristics. Informed by these three models, SES compositional effect is still found to be both meaningful and a crucial aspect of interpreting the school differences.

Finally, **model 4** includes an even more complex specification, using the regression of mathematics and student SES as random, plus incorporating a new school policy variable at level 2, i.e., school selection mechanism.

4.3.2 Random slope analysis:

With random intercept, it is possible to analyse how average mathematics achievement scores differed across schools. From the null model to model 4, it is established that group variables greatly affect student work in mathematics; namely, different school settings affect a student's average mathematics performance. Although these results are interesting, they are limited in that they cannot explain how mathematics achievement is conditioned by the school setting, especially with regard to student SES. This limitation then requires a new aspect for modelling. It is also necessary to establish if the effect of student socioeconomic status on mathematics achievement is stronger in some schools than in others; in other words, whether the unequal distribution that exists between schools is also present within schools. This question is addressed by using random slope analysis.

The annotation in [4.3] explicitly includes an error term that allows slope to vary randomly within schools. The rest of the individual variables remain fixed. Table 4.6 displays all new parameters.

Model 4

Within model:

$$y_{ij} = \beta_{j0} + \beta_{j1}SES_{ij1} + \beta_{j2}female_{ij2} + \beta_{j3}Book_{ij3} + \beta_{j4}Repetition_{ij4} + r_{j1} \quad [4.1]$$

Between model:

$$\beta_{j0} = \gamma_{00} + \gamma_{1}schSES_{j1} + \gamma_{02}subsidised_{j2} + \gamma_{03}fee - paying_{j3} + \gamma_{04}selectionReligious_{j4} + \gamma_{05}selectionAbility_{j5} + \mu_{j0}, \quad [4.2]$$

$$\beta_{j1} = \gamma_{10} + \mu_{1j}, \quad [4.3]$$

$$\beta_{j2} = \gamma_{20}$$

$$\beta_{j3} = \gamma_{30}$$

$$\beta_{j4} = \gamma_{40}$$

The following describes three new findings from this model specification. The first finding is **the random slope is significant**. The regression in mathematics achievement related to student SES varies within schools. This result complements previous results of random intercept. Not only are there differences in mathematics performance **between** schools, but there is also a significant difference in the distribution of the relationship between mathematics performance and student SES **within** schools. In others words, the effect of the socioeconomic status of students on mathematics achievement is stronger in some schools than others; some schools are more effective for a student with a particular SES level, but less effective for others.

A cross-level interaction explores the concrete slope for each type of school. As can be seen in Table 4.6, **private subsidised schools have the smallest slope, reaching 7 points on mathematics achievement when student SES increases by one point**. The random slope for public school (which is the reference) is 8.5 points, and private fee schools have a relationship between mathematics achievement and student SES of 8.8 points. Thus, **this result suggests that private subsidised schools show decreased differences in the outcome of children with different SES**. Regressing the slope on the type of schools, subsidised schools display a significant -1.3 points, which is interpreted as for one student attending a subsidised school, the effect of his/her SES on his/her mathematics performance would be 1.3 points lower than in public school. In general terms, the relationship between social class and achievement is weaker (the slope is flatter) in a typical private subsidised school than it is in a typical public school. Students with lower SES fare better in subsidised schools, and students with higher SES fare better in public schools.

The **SES compositional effect** remains significant over and above student SES, and it is important for each school type. According to the group mean centring in student SES,

compositional effect was interpreted by subtracting the impact of within and between SES effects. Accordingly, as the between or level 2 impact of SES is 16 points in mathematics achievement on average, for each point increase in the SES at the between levels, **the compositional SES for public, private subsidised and private-fee schools are 8.1, 9.9 and 8.9, respectively**. The most significant impact of SES compositional effect occurs in private subsidised schools, which show a compositional SES effect of 9.9 points over and above that of student SES. **Thus, private subsidised schools present a dual effect: They have the weakest impact at the within-school level, but the strongest impact at the between-school level.**

An interesting point to emphasise regarding school differences based on average math achievement is that individual SES is not enough to account for school differences. When student SES is added into the model without school SES (compositional effect), private subsidised and private fee schools outperform public school. In contrast, with the addition of SES compositional effect, public schools outperform both types of private schools. **Thus, compositional SES effect is one of the most important variables in recognising the relative effectiveness of schools after controlling for SES.**

Another point of interest is the **level of covariance**. The covariance is the regression between mathematics achievement with the random slope that, in this case, is the regression of mathematics performance on student SES. Depending on whether this relationship is positive or negative, it is referred to as either “fanning out” or “fanning in”, respectively. A relationship that is not significant means that there is no pattern in the relationship. The actual covariance in this model is -8.6 points. Technically, fanning in relationship means that the lines with larger slopes have the smaller intercepts. Educationally, this relationship means that for a one point increase in the relationship between mathematics and student SES (this is the slope), the student would drop 8 points in mathematics achievement (the intercept) on average. **In other words, a stronger effect of student SES on mathematics performance means a lower mathematics achievement by the student; and this relationship is significantly present in Chilean schools.**

A third observation to note is the interesting change in **the intercept between types of schools** that results with the introduction of school selection mechanisms. A compositional effect is more likely to occur when students are not randomly assigned to the school (Harker & Tymms, 2004). Hence, school selection mechanisms generate a distinctive student

background that needs to be taken into account. Adding selection methods makes it possible to distinguish a significant change in the parameters. Regarding intercept (which could be considered as a measure of effectiveness), the differences between schools change. This contextual variable modifies the comparison of private subsidised schools with respect to public schools. **Once selection mechanisms are included, public schools perform better than both subsidised and private schools.** Controlling for the rest of the variables included in the model, public school outperforms in mathematics achievement by 3 and 7 points more than private subsidised and private schools, respectively. **Thus, school selection mechanisms seem to mediate the differences in the intercept between public schools with respect to other types of school.**

Within selection mechanism variables, **the major impact on mathematics achievement score is generated by choosing students based on their ability. A one point increase in this selection mechanism corresponds with a 6 point increase in mathematics score,** keeping all variables constant. Schools that selected by religion also showed a significant and positive impact on mathematics achievement score: A one point increase in this mechanism increased mathematics achievement scores by 5 points, maintaining all variables constant.

With regard to model fit, model 4 presents a significant improvement, not only in theoretic point of view but also in statistics parameters. By comparing the loglikelihood ratio and BIC of all models, it is possible to see a significant improvement over the fitting model. It is also possible to detect improvement with regard to variance explained by the introduction of new variables; the between-variance went from 39 per cent in model 1 to 46 per cent in model 4. See Tables 4.7 and 4.8 for more details.

Encompassing all the previous results, the present analysis establishes four main outcomes. First, the data displays an important and significant degree of clustering (null model). This means that students within a school are very similar, which provides empirical support for using the school as an important unit of analysis. Second, the SES compositional effect is substantial and significant (from model 1 to model 4) in the Chilean educational system. This finding is consistent with Chilean research. Third, the school type contributes to expanding the compositional effect (model 2). With the design of a more complex model identifying the varying relationship between mathematics and student SES within the school and the introduction of school selection mechanisms (model 4), private subsidised and private-fee

schools no longer outperform public schools in average student mathematics achievement; in fact, the situation reverses. Finally, a cross-level interaction between the slope and type of school introduced in model 4 shows that subsidised schools have less impact on the performance of students with low SES; however, they have a higher SES compositional effect than both public and private-fee schools.

Table 4-6: Random intercepts and slope models. All schools included.

Parameters	Model 1	Model 2	Model 3	Model 4♣
Within Mathematics on				
SES	9.67 (0.164)	9.67 (0.179)	7.71 (0.177)	
Female			-4.41 (0.206)	-4.43 (0.206)
Books			5.42 (0.273)	5.44 (0.273)
Repetition			-21.59 (0.363)	-21.52 (0.337)
Between				
SchSES	10.91 (0.419)	12.93 (0.633)	11.88 (0.619)	16.99 (0.665)
P. Subsidised		-0.68 ^{ns} (0.751)	-0.92 ^{ns} (0.731)	-3.03 (0.757)
P Fee-paying		-9.01 (1.916)	-7.15 (1.863)	-7.34 (1.889)
Sel. Religious				5.28 (1.295)
Sel. Ability				6.08 (0.845)
Cross-level interaction RS on				
P. Subsidised				-1.80 (0.363)
Private Fee-paying				-0.77^{ns} (0.874)
RS with Mathematics				
				-8.606 (3.897)
Intercept				
Mathematics	260.06 (0.308)	261.23 (0.569)	261.50 (0.556)	259.05 (0.601)
RS (public)				8.80 (0.278)
RS P subsidised				7.00 (0.240)
RS private-fee				8.03 (0.831)
Compositional SES				
Public school				8.18 (0.719)
P. Subsidised				9.99 (0.704)
P. Fee-paying				8.95 (1.061)
Residual variances within				
Mathematics	1730.34 (5.922)	1730.29 (7.996)	1684.44 (7.809)	1679.10 (5.839)
Residual variances between				
Mathematics	428.16 (9.956)	426.30 (10.740)	403.99 (10.313)	397.84 (9.314)
Random Slope				13.28 (2.611)

All significant are significant at $p < .05$ except for (ns); ♣ student's SES was centering at group mean.

Table 4-7: Percentage of variance explained by each model. All schools included.

Mathematics	null model	model 1	model 2	model 3	model 4
Within school	71	2	2	4.7	5
Between school	29	39	40	43	46
Total variance	0	13	13	15	16

Note: variance calculated with pseudo- R^2 .

Table 4-8: Model fit. Deviance parameter and Bayesian information criteria. Analysis of all schools.

Parameters	Null model	Model1	Model 2	Model 3	Model 4
loglikelihood	-1101803.057	-914000.226	-913987.920	-902143.959	-902061.764
BIC	2203642.911	1828060.858	1828060.408	1804408.627	1804328.731

4.4 Conclusion

The results in this chapter respond to the research questions stated at the beginning of the chapter. There are four aspects that merit particular attention. The first assesses the importance of grouping as it relates to mathematics achievement. The response to this first research question is that, **in the Chilean data, there is an important clustering that deserves extra consideration.** The clustering of mathematics achievement is important and implies that the school as a unit of analysis does indeed play a crucial role in explaining student mathematics achievement. Twenty-nine per cent of ICC confirms that the school is a relevant unit of analysis for predicting individual differences. Private subsidised and private-fee schools, show a higher level of between-school effects than public schools, providing one takes into consideration the substantial school segregation already present in Chile, especially socioeconomic segregation.

Identifying the issue of grouping in data, along with its significance and impact, makes it possible to evaluate the level of SES on mathematics achievement. As expected, the Chilean data displays not only a significant effect of student SES on mathematics achievement; but also, and more importantly, the data reveals a stronger **compositional SES effect**, with a greater impact over and above that of student SES. In these terms, the compositional effect represents a contextual effect that, for disadvantaged students, constitutes a double negative. The latent phenomenon of grouping has an impact of 11 points over and above the impact of student SES on mathematics achievement. In response to the second research question, the use of different model specifications **shows the compositional effect to be significant in all types of schools.** The addition of school type into the model results in an increase of the compositional effect, with private subsidised schools exhibiting the highest impact. Therefore, when compositional effect is isolated from individual, confounding and suppressor factors, it remains significant.

Given the empirical evidence of the significance of compositional effect, an assessment of the relative effectiveness by each type of school follows. This effectiveness is evaluated with respect to its intercept (average mathematics) as well as its distribution (the slope). Public schools seem to be the most effective (regarding intercept) once all individual and contextual variables are taken into account. Importantly, private subsidised schools perform significantly lower than public schools when school selection mechanisms are incorporated into the model. In fact, school selection mechanisms explain the greater effectiveness of public schools over

private subsidised schools with respect to SES characteristics. In terms of distribution, there are two aspects to consider. First, subsidised schools display a lower impact of student SES on mathematics achievement; that is, student SES played a lesser role with regard to mathematics performance than it did in public and private-fee schools. On the other hand, the subsidised schools display the greatest SES compositional effect. This means that the aggregate level of school SES scores over and above that of student SES. This dual phenomenon might indicate that there are fewer internal differences because of a more homogeneous student body in subsidised schools, which results from their active selection practices for enrolment.

The flexibility of HML allows an evaluation of whether family SES slope varies between schools. The research shows that SES slope varies significantly across the three types of schools. This evidence suggests that these schools not only differ in their overall level of effectiveness (mean mathematics), but also that mathematics effectiveness might vary for students with different SES. In this case, subsidised schools might be more helpful for students with a lower SES. Within-school achievement inequalities related to family SES are greatest in private schools, and lowest in private subsidised schools. However, inequalities related to family SES do not convey the full extent of achievement disparities related to SES. In fact, when the compositional SES is taken into account between schools, private subsidised schools exhibit the greatest achievement disparities. Hence, both student and school SES should be considered in order to develop a comprehensive and accurate picture of SES inequalities.

Finally, one must acknowledge that a single point in time is not sufficient to obtain a more general view of progress, although it does provide a good base on which to initiate further queries, especially those associated with the differential impact of schools after the SEP law adjustment. One aspect that became possible to appreciate was the existing differences between schools once the compositional SES effects are accounted for.

The following chapter analyses the qualitative results from three school cases, each with a disadvantaged student background. The analysis presented in this chapter allowed the selection of these schools, using the SES compositional effect as one of the major indicators.

5 Chapter Five: Qualitative Results

5.1 Introduction

This chapter focuses on a qualitative analysis of the three schools that were used as case studies. The analysis was constructed by drawing from our interviews with teachers and school leaders. As mentioned before, the three cases represent schools with a high enrolment of disadvantaged students; however, according to the previous analysis each school has a different measure of compositional effect. The qualitative difference of these context related effects is therefore analysed.

The chapter is divided into three parts. Section one describes, explains and compares school success. The description takes into account the central aspects of school life that are detected in each school. Using axial code, each case is explained with an emphasis on primary categories. These categories are defined according to the role they play with regard to success; namely, whether they are conditions, actions, or consequences within the contextual matrix of analysis. The final part of this section compares school success by considering four main categories: school culture, the context of teaching, teaching styles, and leadership styles.

Section two responds to the second research question of the qualitative analysis. All the analyses are oriented toward deciphering how schools react to the pressures of accountability, and toward determining the impact of those pressures on the school and on teacher identities. To answer those two questions, the first part of this section presents how both teachers and leadership teams define and respond to the SEP program. The second part of this section describes, on a case by case basis, the arrangements that are made in the school as a response to the pressure imposed by SIMCE. Each case presentation is followed by a brief comparative summary, then moves on to a discussion of one of the most important consequences of the new program: the resulting effect on teacher identities. The final part of this section describes how the process modifies the teachers' sense of identity, and how those identities are defined.

The final summary and conclusion to this chapter presents the most general findings, with both research questions considered. Choosing the ‘core category’ (Corbin & Strauss, 2015) makes it possible to articulate the relevance of context to actions and results in school.

5.2 Responding to the first set of research questions:

What are the distinct school practices that are defined as differentiating the achievements of one school from those of their comparable peers?

5.3 Describing main school practices

5.3.1 School A

Describing school life

This school successfully maintains the largest student enrolment in the county. Based on the important number of students and high percentage of priority pupils, the school receives a significant amount of funding that is reflected in excellent infrastructure and facilities. There is a large number of staff directly dedicated to teaching students. The following explains how the teachers and leadership team describe school life.

Context of teaching

Teachers seem to have different interpretations of their **context of teaching**. These arguments are based on various positions within the school and on individual teaching experience. The following section describes these perspectives.

The first perspectives are from teachers who emphasise the **demanding and stressful situation** in which they have to function; they describe the overly ambitious number of tasks they are required to accomplish within extremely insufficient time periods. Teachers relate the stress that results from having to teach students for 90 minutes, while under pressure to improve student performance “*We feel pressure to raise student's results. Indeed, there are extensive works that accompany the actual exercise of teaching, we need to mark, fill forms, get results and include them in a database, respond to other programs, take the test, and we even need to work on our portfolio, and all of these add up to too much. We need to meet different requirements, and we feel pressure from the Ministry of Education through SIMCE*

and also from the local program for student literacy 'Coronel learn'. We do not have time even for planning" (T9). Feeling overwhelmed, teachers relate that they are constantly **scrutinising themselves**; that the available processing time is never enough, and as a result, the job requires their constant attention, even when they are at home.

The second teacher perspective describes tension as a result of the strict supervision of their work. According to one Head Teacher, there was a degree of teacher supervision in the past, but it was not a fully accepted measure or a complete part of the school mechanism: "*I supervised teacher work more than the principal did; however, this situation was always a bit tense, it made the teachers feel uncomfortable*" (UTP2). Other views emphasised the availability of time. When comparing their working situation to that of public school teachers, private subsidised teachers assert that there is **less pressure** and more freedom for teachers in public school. In general, the focus on SIMCE results demands an increased amount of work and stress, so that "*other schools only work for SIMCE scores*" (T8). An additional perspective recognises that some teachers do not do any planning even when there is time available to do so. One experienced teacher mentions that first cycle teachers are given an opportunity to work cooperatively through an explicit UTP scheduling that provides additional time for planning to teachers from different classes: "*From the first cycle team, we work together in the particular time that we have. The Leadership Team made a special timetable to enable us to cooperate and do planning together*" (T10).

In summary, the teachers express differing views of their working situation and define their teaching context differently. These apparent contradictions might be explained by different teacher positions, and by the lack of a shared vision for the school. The differences regarding teaching context are not the only conflicting views expressed by staff; in fact, one of the most important disputes centres around their explanation of school performance. Different reasons and factors are described as attributing to an **explanation of the school results**, some of which offer a general explanation and others a more specific one, directly related to SIMCE scores.

Leadership

One of the most visible aspects of the school is the dispute over leadership. There is no established leadership in school A, and an **antagonistic relationship** exists between the LT

and teachers. According to the principal, there is a series of ‘**critical nodes**’ that obstruct the implementation of a school improvement plan.

Fragile sense of authority.

A **fragile sense of authority becomes** apparent over several discourses. The teachers appear not to view the principal’s leadership as legitimate, which makes it difficult to instil a new culture and break down teacher resistance. According to the principal, the school organisation is in transition from a well-established staff and leadership to a new sense of authority and vision. One of the **main transition points** of the school occurred in 2011 when a significant number of former staff retired. The principal feels that this resulted in the school losing its distinct culture or ethos. Indeed, the LT states that they find it difficult to consider themselves a team because of disruption from **dissidents** who produce an adverse climate. Teachers recognise this resistance as manifested implicitly by silence and an artificial consensus; they rarely offer their opinions or discuss the principal's proposals. As an example, the LT states that teachers are not ready to accept peer class observation because they are not ‘mature’ enough to do so. Although there is some classroom supervision, mainly over teachers working in the first cycle (years 1 to 5), teachers are reluctant to meet the planning requirements; and though they accept many decisions from the Leadership Team in public meetings, they do not implement them.

Despite **apparent tensions** between the Leadership Team (LT) and some groups of teachers, both the principal and the UTP manager feel that they are living through a **transitional** period. There is an acceptance of the idea that promoting awareness throughout the teaching staff (and recognising the legitimate role of the school leadership) is not a task that can be accomplished by force. In the words of the UTP, the aim is to "*bring and induce improvement.*"

This fragile sense of authority is related to what the principal acknowledges as a ‘**crisis of legitimacy**,’ that arises from the question of how far the participation of teachers should go in decision-making within the school. In the principal's words "*teachers think that they should be involved in every decision within the school. However, there are things for which I am responsible and I should not share those decisions*" (P1). In contrast, teachers assert that the LT’s work is not visible to them; that they do not know what the LT is doing. They report

that the LT works behind '**closed doors**' and it is hard to know who is doing the job, suggesting that the principal has only a moderate influence. Teachers indicate that the UTP manager (who is a former teacher of that school, with around 30 years of experience) has more credibility than the principal.

Differing principal and teacher views.

The lack of authority and legitimacy of the LT is not only a product of a transitional organizational culture, but is also based on different visions from the LT and the teachers. One of the main active differences is their view of dealing with student behaviour. One teacher explains that the principal has a developmental approach to student indiscipline - he tries to convince students to reform, and then waits for them to change. In contrast, teachers have a more disciplinary perspective and employ immediate measures. According to teachers, "*we expect disciplinary actions for students, we feel alone, nobody to help us, we have been alone during the year*" (T9). This perception of the lack of disciplinary measures that teachers find necessary to control students represents a clear conflict between a traditional teacher's perspective and the principal's opinion. Based on this conflict, teachers define the principal's conduct as an absence of support "*(The) principal from the beginning gave more attention to parent and student voices, and left teachers aside*"(T9). According to teachers, "*the principal did not trust teachers' work; however, he needs our support to accomplish his projects*" (T9). For this reason, teachers reiterate that the principal has lost his credibility among the teaching staff, who find it difficult to trust him. This conflict is an important element in explaining teacher resistance to the principal's projects and leadership style.

Defining the work of the teacher.

Another dimension where the Leadership Team and the teachers differ is the level of responsibility assigned to teachers for the student achievement. The principal's view is that the school is 100 per cent responsible for student learning outcomes, whereas teachers divide the responsibility between student characteristics and school organisation.

According to the Leadership Team, in dealing with diversity, there is a deficiency in the work and the attitude of teachers. The UTP manager states that teachers are not planning their work in the classroom. As a consequence, they do not know the needs of the students, which leads to low achievement and lack of involvement from the students (disengagement).

According to the principal, many teachers do not reflect sufficiently on the importance of planning for *student success*. The view of the Leadership Team is that in order for teachers to be successful, they must work in a systematic fashion; but instead, they are applying **traditional pedagogical approaches**. This traditional method involves **lack of planning, so that they are not adequately** managing their time in the classroom. Stemming from this approach, in the words of the principal, “*teachers have a huge problem controlling student behaviour; they cannot prevent disruption and are not patient enough to deal with it*” (P1). In agreement with this interpretation, one staff member in the school states that teachers frequently consider disruptive behaviour and difficulties from students as evidence of psychological problems, and they manage those students on that basis, with some teachers going as far as attributing student indiscipline to medical reasons. In this sense, teachers display a type of **traditional pedagogy** which could explain the many problems leading to student misbehaviour in the classroom. Ideally, staff said “*students should be quiet, according to this view, but teachers lacked an understanding of the group, and they do not know how to deal effectively with diversity, they do not have a group identity. In this type of classroom, there is no fun that is why students are not motivated*” (Ps1).

Defining teacher attitudes.

In considering negative factors that might explain teacher performance, both the principal and the UTP manager are critical of fundamental **teacher attitudes**, beginning with **teacher disaffection**. This dissatisfaction is related to a sense of emotional and socioeconomic vulnerability that leaves teachers with a fragile sense of commitment to their work. In the principal's words, “*teachers are losing their commitment to work for children, especially in a disadvantaged context*” (P1). The principal believes that this loss of commitment accounts for the teachers' **low expectations** of student academic achievement and for the marked pessimism of their views, both of which are reflected in certain teacher discourses of limitation: “*teachers tried to push themselves, but we cannot do more or go beyond*” (T8), and “*related to teacher commitment in this school, I think that teacher commitment can be better*” (T8).

Another feature of teacher attitude as reported is a **lack of self-criticism** and an unwillingness to recognise personal limitations. In the principal's words, “*there is both a lack of recognition of the limited capacities to work with disadvantaged students and low levels of self-*

*consciousness throughout teachers” (P1). Teachers do not assume the challenge presented by context, and they place the blame for inadequate learning on outside factors beyond their control and responsibility. As an experienced teacher argues: "they look to blame somebody else, they say 'there is no parent support,' 'kids did not behave well,' and 's/he is not motivated,' they used these kinds of arguments" (UTP2). Indeed, teachers view many classroom problems as a result of a bad attitude from the student, and lack of support by the parents; but not due to the pedagogy or inadequate planning by the teacher. For this reason, the UTP manager believes that teachers feel **challenged** with the LT implementation of classroom supervision, which prevents the achievement of **a more developed evaluation system in the school.***

The LT identified another source of problems for the teachers as arising from their **misconceptions about efficacy**. According to the principal, teachers equate not meeting the formal contents of the curriculum with being bad teachers; they may worry more about meeting legal requirements than about adjusting their work to the diverse needs of particular pupils. Finally, the LT also associated current teacher problems with inadequate teacher preparation in Universities (see below for more information on differences between new and experienced teachers). For this reason, the LT is preparing teacher training modules to be used in the future to help them manage student behaviour, which is the problem most often cited with regard to teachers in this school.

Teacher explanations of poor school achievement.

The teacher accounts of student achievement results, especially those related to SIMCE and parallel with Leadership Team evaluations, mostly concentrated on variables related to student characteristics and to certain aspects of school organisation. As one teacher stated, *"There are three different visions about who is responsible for SIMCE results. The official discourse is 'we as the school,' but in practice it is the teacher, and in the teacher's opinion it is student-teacher-parents" (T7).*

According to teachers, students can possess some characteristics that directly affect their achievement; **lack of motivation and engagement** are two important examples, and teachers refer to these features to explain low SIMCE scores. Several teachers state, *"the big problem is because students practically did not respond to the SIMCE test; they got bored and*

answered the test without care, the majority of them are not motivated" (T9). Teachers point out that students know that this evaluation has no direct consequence on them, so they do not care about it. One teacher argues that "Kids have a difficult disposition towards the examiner. We had an inexperienced examiner and students behaved badly, we needed to go the classroom and establish order again...that impacted on SIMCE results" (T6).

From a more comprehensive perspective, one teacher mentions that lack of student motivation could be related to the teacher's methodologies, concurring with the LT's view. S/he relates, *"The majority of teachers do not explain what the purpose of SIMCE is and students lose focus... they ask me: what is SIMCE for? I explained to students the idea of SIMCE, but they did not believe me; accordingly, they did not take it seriously" (T7).*

Another feature mentioned by teachers as interfering with achievement is the disadvantaged **socio-economic condition of the students**. In fact, some teachers agree with the idea that the school should select students as a measure to obtain better results. Teachers assert that outcomes *"all depend on what kind of student you have"* (T6). This affirmation focuses the explanation for poor results on the students themselves, and is very different from the principal's stated position on teacher views and their lack of self-consciousness. The teachers who attribute results entirely to the students maintain that they are doing **everything that is possible**, and the students are still unable to even finish their classes; they contend that teachers try to do their best, and cannot do more. For teachers who are willing to send challenging students to an integration program, this situation represents a pedagogical contest. This school is defined as a comprehensive school, where a maximum of seven students with disabilities are allowed in each typical classroom. Nevertheless, this situation is described as negative for SIMCE scores because these students underperform across all measures, thus altering the average scores. As an experienced teacher explains: *"They influenced the score; if I would take them out the percentage would increase. They always answered without care; they needed to have assistance to respond to the test" (T10).*

In essence, the most significant aspect of describing school life is the clear difference between the LT and the teachers on their idea of the central dimensions of school functioning. The disagreement in those relevant areas makes it difficult to consolidate a new school culture based on a shared vision of school improvement. A crucial element of this difficulty is the lack of control on teacher pedagogy that makes it hard to initiate improvement actions

precisely because the reach of the LT does not extend to that level of scrutiny. The teachers' lack of trust in the LT does not support their legitimacy with regard to making changes in teacher practices.

5.3.2 School B

This is a small public school with students from highly disadvantaged backgrounds. The areas surrounding the school are characterised by significant crime rates and isolation. Because of the small number of students enrolled and despite having an excellent classification (Autonomous school according to SEP program), School B did not receive the significant amount of funding awarded to School A. This school does not have a sound infrastructure, and some teachers lament the lack of equipment and resources. The following section presents how the teachers and the Leadership Team describe life in school B.

Explaining school success: The principal's vision.

The principal begins his description of school life by explaining his ideas about leadership and its influence on teaching activities. He expresses a **critical view** of how other principals manage their schools, stating that while he recognises some degree of awareness of the importance of management in their work, in many cases the principals do not put into practice the ideas of working collaboratively and enhancing teacher participation. Many schools still lack democratic governance; instead, they treat teachers in an authoritarian manner. According to the principal, "*principals in general need to abandon the comfort zone they inhabit and act and think as a teacher again*" (P3).

Consistent with this view, the principal defines his type of authority as a '**shared leadership.**' This translates as a constant need to **dialogue with teachers**, to convince them of the usefulness of discussion and add to their commitment. "*My discourse was,*" the principal said, "*in education, to achieve improvement it is highly necessary to share practices*" (P3). Thus he sees the work of a principal as providing orientation, rather than rule. For these reasons, the UTP manager defines the principal's leadership as **democratic**, claiming that the **small school context** facilitates this kind of leadership. Additionally, the principal offers an explicit account of his impact on outcomes, maintaining that one-third of the school's results depend on his leadership. Finally, he claims that considering the context of the school, effectiveness has definitely been attained.

Relatedly, the teachers find little influence on their work from school organisation and requirements; the concepts of “**flexibility**” and “**cooperation**” form a big part of their definitions of school life. Although the principal and the UTP mention some evaluation systems used in the school, they define those in terms of teacher support. As the principal said: “*We call it support, because, it has the intention of helping teachers, we have a good conversation with teachers, they even ask for this supervision or help*” (P3).

In general terms, the UTP manager states that the **principal trusts the teachers' work** and acknowledges their efficiency; to a large extent, this efficiency depends on the **teacher's commitment** to student learning. As a result, the LT grants teachers the **flexibility to choose their methodology** and even to focus on aspects that they consider necessary to promote student learning. The principal has not encouraged the teachers to spend time on SIMCE test preparation throughout the year. This **independence** allows teachers to manage the increasing pressures of external evaluations and local programs that directly or indirectly demand determinate pedagogies and rigid subject orientation. Many teachers and the LT recognise this flexibility and define their work as not oriented toward achieving SIMCE results: “*Our worries did not go in the SIMCE direction. Our idea is to create a learning community and give the best service possible to these children, and if with this we have good SIMCE results, well, excellent; but we are not alienated by SIMCE*” (P2).

Independent teaching context.

The teachers do not conceptualise their teaching environment as characterised by supervision; in fact, they tend to refer to the ideas of **flexibility and mutual cooperation**, as described by an experienced teacher: “*We still have independence within the classroom; despite having a national curriculum and national timetable, we have the flexibility to choose our methodology. If we need to go slowly we can do that, and the most important point is student learning; otherwise half of our students would not learn*” (T13).

In support of cooperation, teachers mention that the existence of good communication among themselves results in two essential outcomes: They maintain a unique position in the eyes of the students, and they are able to achieve meaningful progress as teachers. As one experienced teacher relates: “*We talk a lot between colleagues, we pass the information about*

students to have one constant or common position in front of them”[...] “we ask for help in pursuing an improvement as a teacher” (T11).

It is therefore evident that the teaching process in this school relies greatly on individual and collective shared teacher responsibilities in order to ensure student learning. This dominant position that prioritises the work and commitment of the teachers creates a teaching context characterised by flexibility, autonomy, and cooperation,

The teachers express their appreciation and the importance of the flexibility allowed by the LT; however, their explanation of school results is undeniably clear: A student's achievement depends 100 per cent on his/her work. As far as important factors that contribute to school success, the teachers cite a **strong commitment** as an essential element, explaining that that component allows teachers to establish a deep **connexion** with students. This connexion keeps them aware of specific student needs, and thus able to take those into account as part of their work. Teachers point out that *"we are highly motivated, and our expectations go beyond that which is expected"* (T15).

Teachers express no negative feelings toward the principal and his leadership, although the principal's role in the success of the school is viewed as limited in comparison to the work and commitment of the teachers. To illustrate, some teachers affirm that *"this school would work with or without a principal because we have had time without a principal and we were working unproblematically"* (T11). Teachers place a high value on their own commitment and their impact on student achievement, declaring that *"things go further just with teachers"* (T13). In a discussion of the limitations of the principal's role, one teacher mentions an indication of his lack of a sense of community as evidenced by his saying "I did that" rather than "we did that." Other teachers take an intermediate position, acknowledging the principal's contribution: *"If nobody was asking for results, motivating teachers and emphasising student learning, we would not achieve our current results"* (T12); and *"I always say, one factor in this school is the principal, he gives us the freedom, he did not pressure us, and that you can note that in the right climate"* (T15). Nevertheless, even this moderate group of teachers, though not denying the value of the principal's role, still feel that their work is more important than the principal's leadership for achieving school success. Their perspective is that the principal provides support, but his position is not central to the success of the school.

Style of teaching.

Most teachers believe that there are three necessary components to a style of teaching that deals effectively with varying student characteristics. The first is an **adequate profile** that includes all the skills required for dealing with the complex demands of working with disadvantaged students. This profile is related to a teacher's degree of **involvement**, vocation, and unique mandate to care for the students. Teachers clearly acknowledge their position on intervention with regard to negative student realities: *"A regular teacher cannot work here; in fact, some teachers have quit so quickly. Here you need a different profile (T11)".* To be effective, teachers must be able to use **different resources** to manage the conflicts and emotional effort involved in the daily process of teaching. With regard to this component, the teachers mention specific ways of **releasing tension and worries**. They meet at lunch time and talk with colleagues about different subjects, including more than just their work. They use humour as an important catalyser. Teachers describe their **support** as not just a matter of increasing student expectations or self-esteem, but also of protecting students from psychological and physical abuse. The magnitude of helplessness and vulnerability of some of their students demand from the **teachers a sense of care** that takes an enormous toll on their well-being: *"We are working in a small school, and your challenge is to save all these students so that they can achieve something else/more" (UTP3).* In this sense, teachers must have a significant degree of **involvement** in student needs; they cross the lines past those of functioning only as a teacher, into acting more like a parent: *"Teachers become a fundamental part of the student's life. We cross the border; we are almost their parents (T11)".*

This change in role, however, does not connote a lack of authority. Teachers must have the skill to remain **strict and rigid** in dealing with discipline problems, so that students perceive and respect the teacher's authority in the classroom. This practice, however, should not be interpreted as aggression toward the students. To avoid this misinterpretation, teachers must remain **involved** to prove that they care and are genuinely concerned about their students, which engender their respect. Teachers identify involvement as another significant component of teaching style, which serves to 'earn' trust by allowing the students to see and feel that their teachers truly care about them. In the words of the teaching staff: *"We are sometimes their mother, at other times their psychologist, etc., you need to do everything to keep them motivated" (T11).*

The third component of an effective teaching style is a significant **pedagogical effort**, which includes two requirements. The first is a thorough knowledge of the subject. In a demanding context, teachers cannot count on parent support or on other resources, so they have to be fully proficient in their teaching subject. The students **recognise** this aspect of teaching, and they respond accordingly: *“A teacher who works in a disadvantaged school needs to be a ‘master’, if you realise that your students are not catching what you are teaching, you need to change quickly and make sure that these kids could learn (UTP3)”*. The second requirement of a significant pedagogical effort is the teacher's deep commitment to his/her work, to an awareness of what s/he is doing, to an ability to evaluate regularly and adapt pedagogical strategies. Additionally, teachers emphasise the need to maintain a positive view of student mistakes and to ensure their participation in class. Teachers also place a great value on cooperation with one another: *“We interact and talk a lot with other teachers about our students, we need to share the information to help each other”* (T15).

Considering the context in which they work, teachers relate their appreciation of student progress not only in the core subjects such as mathematics and literacy, but also in their **attitudes and expectations**. Some teachers report that when they started working in this school, students had no self-esteem and were too afraid to participate in the classroom, which immediately drew their attention to the importance of increasing motivation and aspirations in the students. To accomplish this, the teachers de-emphasise standardised test results such as SIMCE, and prioritise the development of student abilities, in spite of the fact that this effort takes extra time and deviates from Ministry plans. Teachers point out that *“teachers who are aware of the school context, should not work towards the SIMCE test”* (T15).

This change in educational approach is possible only because the principal does not push the teachers to focus on the test. Teachers recognise the **independence** and **flexibility** allowed to them in choosing their teaching methods, stressing that they are necessary elements to working effectively at the disadvantaged level; as one teacher said, *“we cannot be worried too much about tests and follow the curricula strictly, otherwise; students would learn half of what they are learning”* (T17).

5.3.3 School C

This school is of medium size with a high level of student vulnerability. The surrounding area is also disadvantaged, though not as much as the area pertaining school B. Because of the number of students enrolled and the proportion of disadvantaged pupils, this school receives a good amount of funding, and consequently displays a satisfactory infrastructure and adequate resources. The following presents how the teachers and the Leadership Team describe school life.

Explaining school results: Leadership and school organisation

Strong SIMCE results in this school are not attributed only to specific measures; they are explained by taking into account the broader environment and organisation of the school. One of the most important aspects in defining the success of this school is a widespread recognition of the principal's leadership and her structured and systematic style of work. According to the teachers and the Leadership Team, the principal is the key figure in making their school an effective learning institution; all the teachers describe her as very organised, and even a workaholic, who is always one step ahead. In addition to her efficiency, the principal continually seeks out new strategies to enhance student learning and improve school results. In other words, the teachers are proud of their principal, and they believe that her work is the reason for the positive outcomes in the school; she is defined as a leader and recognised as the key element in the school's success.

A second contributing factor that derives directly from the principal's actions is the existing systematic and organised school structure. Teachers describe a strict planning regimen that operates throughout the year; for instance, at the beginning of the year, teachers receive a guide that outlines all activities to be completed with their timetables, and also sets out the procedures that teachers must follow in different situations, such as when dealing with problematic student behaviour, or handling an emergency. Indeed, there is **constant supervision** and a clear orientation about what path to follow; teachers relate that "*the LT showed the way and teachers just followed it*" (T2). The work of the teachers is highly formalised, specifying the planning, test instruments, schedule for activities, and goals to achieve. Teachers affirm that "*we always work within a strict timetable, very organised and structured; these things make changing possible*" (T5).

The SIMCE logic and preparation is readily accepted into this type of school organisation and teaching processes. There is constant supervision with regard to student outcomes as related to specific goals, by semesters, and established by school organisation. As the head teachers explain: *"We evaluate fortnightly, and we assess to know student results; otherwise, we cannot give teachers feedback and change practices if we need to"* (UTP1). The principal asserts that this system of constant evaluation provides information about what teachers are doing; and knowing their work gives teachers the capability to make learning possible. In the principal's words: *"The student evaluation means evaluating the curriculum that we are teaching; we constantly supervise what teachers are teaching, that is why we have all books and planning records well organised. Teachers know the timetable, they know which path to follow"* (P1). The data produced in the school is put to a pedagogic use.

From the point of view of the teachers, this system can feel somewhat demanding and stressful; however, they appear to know how to handle this pressure. One young teacher responds: *"I feel pressure because when the Leadership Team (LT) ask about student learning, I know that they are referring to my work; however, I've learned to hold this pressure"* (T4). Another teacher stated that this system is not problematic, and does not impair the work of the teachers: *"here, there is good supervision and constant work. Those things allowed us to work well and make student learning possible"* (T5).

To justify the elaborate processes that govern the work of the teachers, the Leadership Team argues that teachers must be the leaders in the classroom, as they **are 100 per cent responsible for student learning results**. In practice, however, this highly organised structure leaves little room for teacher choices. In fact, the head teacher justifies this limited form of tyranny as a method of making the system work, explaining that sometimes teachers need to be under pressure to fulfil their obligations. For the LT, the most important point is that this system has been in place for more than four years. Although the teachers recognise that most decisions are made by the principal, they allege some personal input and choices relating to curriculum and pedagogical strategies.

This limited room for teacher flexibility comes from the school purchase of standard planning packages for all teachers, for each subject. According to the teachers, there is still some room to adapt their planning and pedagogical system despite this level of standardisation: *"The*

class preparation for each course is already done. However, the LT has let us know that if we need to take more time or change an activity, we can do that” (T2). Clearly, the degree of teacher autonomy is much more restricted in school C than in school B.

Supervising teacher’s work

The **regular supervision of teacher’s work** allows the principal and head teacher to identify weaknesses and structure appropriate training. The regular monitoring takes place through implementing ‘**study classes**’ that enable the principal and head teacher to observe the classroom in action. This strategy encourages the correct use of time, student feedback, good teacher-student relationships and maintaining a clear commitment to the learning objectives. According to the LT, 'study classes' are not intended to judge the teacher's work; they are conceived as an exercise and a means of raising awareness of pedagogical practices that need improvement. After ‘study classes’, teachers convene in a technical meeting where they hold discussions and give feedback to each other. The Leadership Team does not participate directly; they do not intervene in teacher discussions and they do not offer any criticism. This exercise has a formative, rather than a punitive, orientation.

After 'study classes' teachers are **evaluated** through a socialised evaluative protocol that uses, as its criteria, the pre-existing student goals that teachers should meet. This measure results in different classifications: Outstanding, Competent or Developing. Teachers are evaluated according to both their teaching practices and the students' achievements. The leadership team **supervises** the teacher's results according to periodic student goals and curriculum stages. Thus, the monitoring works on an ongoing basis to ensure that students are reaching their targets and to detect weaknesses and strengths on the part of the teacher. This information then serves as a basis for scheduling teacher training.

Teaching style

All the supervision and evaluation processes described thus far are focused on **the work of the teacher** in the classroom; three main interrelated aspects emerge from the accounts. According to the teachers, they carry out their work with a firm and clear sense of their authority, which is nevertheless related to constant support with regard to student motivation and expectation. The following section explains more about the three interrelated aspects.

The first aspect, the type of structure in the school, presents teachers with the central idea that their work with students is systematic. Based on the conviction that the kind of students enrolled in this school requires constant guidance, teachers use two primary mechanisms to carry out their job. One of these mechanisms is the implementation of a ‘normalisation routine’ that they define as student training and *mechanisation* (routine work) to establish their behaviour at the beginning of each class. This mechanism helps to maintain discipline and teaches the students to follow a structure. Another mechanism depends on pre-defined planning that the teachers use to guide the classes. These planning routines are school resources that provide teachers with systematic and similar approaches to content. Organised content permits teachers to have a very structured class and helps them to **minimise wasted time**, enabling teachers to achieve the pre-defined learning goals for each term. At the same time, however, teachers do have some flexibility to adapt content and to spend extra time on particular items, if they feel that it is necessary.

A second aspect that emerges is a pedagogy that teachers define as **rigid and a little authoritarian**. Teachers describe themselves as strict when they often work to preserve discipline and respect for the rules. To respond to student realities, the processes of teaching and learning that the teachers implement are very much *contextualised*. A good encapsulation of the teachers' method is the motto ‘*keep students working all the time*’ (T3).

The third and final aspect that arises from systematic approaches and strict forms of teaching is the teachers' concern about giving the students all the **support** that they need. The LT and the teachers constantly promote higher expectations, increasing student self-esteem and rewarding their efforts to maintain a sense of belonging and engagement with the goals of the school, especially the goals that refer to SIMCE and disciplinary results. Teachers are acutely aware of the needs of the students, including the necessity for psycho-social support; in fact, they work on student motivation systematically throughout the year, trying to improve the original mindset of the students about the importance of having an education. In one teacher's words, “*to impact student learning, we need to know everything about their life*” (T1).

Teachers fully recognise that one of their strengths is the **level of preparation for their classes**. Planning and systematic work ensures excellent lessons and makes everything move **faster and more efficiently**. Teachers also know that they are all doing a similar job, and are aware of the need to keep improving their classes. Moreover, teachers emphasise the need to

remain aware of student vulnerability, which is the reason for their consistent work to augment student motivation and support. In summary, the teachers define their work as **systematic** and embodying a significant commitment to student learning and well-being; they acknowledge that their work is demanding and implies much dedication and commitment.

Strategic communication

One of the most important features that gave identity to this system of constant supervision and made it function, was the **strategic communication** used to gain teacher's willingness. Teachers thought that supervision was a help to them, which ultimately resulted in boosting student's achievement. To convey this, the principal mentioned that, to gain better responses from teachers, they used the word '**guidance**' or '**support.**' Ultimately, teachers felt supported rather than pressured. Teachers stated that '*principal and UTP manager feedback was respectful and constructive, where the objective was to encourage teachers in their work and highlight their achievement*' (T5). The LT was seen as very **respectful** of their work and in classroom observation exercises, they always displayed a supportive approach, using appropriate words and not damaging teacher's confidence. Certainly, this helped teachers to accept this level of supervision.

There were also other related aspects that explained school success. These issues were considered as additional approaches from the LT and teachers. This aspect was categorised as school **openness**. The school was open to learning from similar successful experiences working in disadvantaged teaching contexts. According to the principal, they belonged to a school franchise and had received added capacity to implement the new skills and strategies. This idea of developing and executing this new strategy allowed building their own capacities and responsibility through staff. According to the principal, '*(the) Leadership Team look for different successful strategies that have been applied in other schools, and then we receive training and implement those strategies in our school*' (P1).

5.4 Explaining school performance.

The previous section relates a series of discursive comparisons of each case, comprising a presentation of raw and descriptive data. A subsequent comparison of the responders in each school reveals critical themes that describe the main aspects of school functioning.

To move further into a more analytical approach, this section develops an explanation of school performance based on the themes and categories that were considered fundamental to understanding the importance of context for these schools. To establish a holistic explanation, the analysis is drawn in two stages. At the beginning stage, the notion of “paradigm” is utilised, framed around the idea of “context”. The second stage develops an explanation by focusing on the notion of “process”, which yields a compelling account of interactions in different scenarios. The aim of this part of the analysis is to respond to one of the key research questions: how do the schools explain their distinct performance? The following presents an explanation based on the responses from the schools.

5.4.1 School A

The responders in this school expressed an awareness of the pressure of the accountability process, and instituted a series of activities to deal with SIMCE preparation. Although the school responds by ‘playing the game’ of SIMCE, the results in school A are lower than those of comparable schools. What is the reason that school A, which has important resources (economic and staff), does not produce SIMCE results that are at least comparable to other schools? And why does the school also lack a positive culture of improvement?

According to descriptions given by the leadership team and the teachers, there are two complementary areas in school A that remain under-developed in comparison with the other two school cases:

1. A lack of recognition and acknowledgment of leadership and organisation at the school level;
2. Teachers who have insufficient skill and deficient planning to work effectively with disadvantaged students at the classroom level.

The absence of leadership in the school is a product of a wide difference between the views of the LT and the teachers (see table 5.1). Among the many concepts over which the LT and the teachers disagree are how to treat student behaviour; the level of teacher supervision available; the work of the teacher; the degree of teacher commitment; and teacher participation in decision making.

Table 5-1: Differences between Leadership team and teachers.

Areas of differences	DT's view	Teacher's view
Student behaviour	Holistic/developmental	Disciplinary actions
Supervision	Asking for planning	No presenting planning
Teacher's work	Traditional pedagogic	Overwhelming
Teacher's commitment	Teacher Disaffection	Misinterpreted/ misunderstood
Decision making	Teacher should not participate in all aspects	No transparency, "closing door"

This series of differences cause a chain reaction that makes it difficult to establish a positive school culture and better school organisation. These disagreements are also evident at the classroom level, where a regular evaluation of the teacher's work cannot be implemented. As a result, the LT criticises teachers for their non-existent planning and their constant problems with student behaviour. From the other side, the teachers assert that the LT does not know their work, and that they receive no support from the LT, especially in regard to managing student behaviour.

Another point of difference exists in the LT and the teacher interpretation of cause and consequences; for instance, with regard to inadequate student motivation. Although both sides agree on the presence of low motivation, they attribute it to different causes. The LT views the lack of motivation in students as a product of deficient planning and the use of traditional pedagogy by the teachers, whereas teachers explain the phenomenon by the intrinsic lack of incentive that characterises the students' disadvantaged context. Using the paradigm methodology, table 5.2 displays two series of conditions, actions and consequences.

Table 5-2: Paradigm codification, school A.

Conditions	Action/interaction	Consequences
Fragile sense of authority	Lack of teacher supervision	Absence of teacher planning.
Lack of teacher commitment	Traditional teacher pedagogy	Lack of student commitment and learning.

The fragile sense of authority of the principal, as created by the teachers, does not permit sufficient teacher supervision to take place in the school. One of the most visible consequences of this deficit in supervision is the absence of any presentation and adherence to a plan from the teachers. The scenarios traced in table 5.2 display how the school level environment can impact the most essential sphere in a school -- the practices in the classroom. According to the LT, the shallow commitment from the teachers toward working with disadvantaged students accounts for their use of a traditional type of pedagogy, which includes a lack of engagement with the students and with the school, including its evaluations.

5.4.2 School B

This school is defined as successful, in spite of having a disadvantaged context. In addition to having good SIMCE results, the school exhibits a highly committed staff and an effective organisation that allows teachers to work with flexibility and independence. The LT and the staff list two elements that enable the success of their school:

1. Strong teacher commitment
2. Flexible school organisation

A strong commitment is related to the specific styles and identities of the teachers, who are actively involved with the needs of the students, and demonstrate a special ‘sense of care’ for their pupils. This deep commitment begins with the teacher's awareness of the student context and the ethical commitment to redress the problem and respond to the existing needs.

School leadership is also described as positive because it enables teacher autonomy and flexibility. Furthermore, although school leadership is not considered to be a crucial element, it does offer teacher training and a democratic view of school organisation. This situation makes it possible for teachers to assume their own style and distinct identity.

Table 5-3: Paradigm codification, school B.

Conditions	Action/interaction	Consequences
Teacher Commitment	Care and teacher involvement.	Student commitment and positive attitude for learning
Consciousness of context	Flexible school organisation	Teacher independence

Using the paradigm methodology, table 5.3 displays one condition that triggers related actions and consequences in the school. In contrast with school A, no separate and divergent vision exists between the LT and the teachers. Both categories of staff have the same view and the same objectives oriented toward student learning. In this sense, the primacy of the context leads to discourse that expresses a strong **sense of commitment** from the teachers, consistently reflected in the use of terms such as ‘dedication’, ‘going further’, and ‘crossing the border’ when referring to staff. Their own strong commitment helps teachers to inspire commitment from their students, and to engender a positive attitude towards learning. Teacher commitment was operationalised by an adequate **teacher profile**, a necessary component to working effectively with the complex requirements of students from disadvantaged backgrounds. Finally, teachers in school B display a significant **pedagogical effort** that converts the intangible concepts of commitment and profile into a tangible outcome of their practice: student learning results.

The Leadership Team also shares recognition of the primacy of context in organising the school. To work successfully in its setting, the school must have a flexible and democratic approach toward organising the work of the teachers. Accommodating independence in teacher practices recognises their dedication and quality, while also providing an adjustment to the complex realities of their work. In view of these observations, it is possible that the two elements identified by staff in School B -- strong teacher commitment and flexible school organisation -- may account for a large part of the success of the school.

5.4.3 School C

This school is classified as successful according to SEP, SIMCE scores, and indicators of school environment from the Ministry of Education in Chile. Considering its context and results, school C can further be described as remarkably effective. From the moment that the SEP law agreement was signed, this school has proceeded with a dramatic change in its organisation and results.

The rationale for the effectiveness and success of school C is mainly attributed to leadership and organisation. The mission and the objectives of the school are clear, evaluated on a regular basis, and filter down through every aspect of school life. This strong vision and organisation of the LT plus the direct involvement of the owner of the school work together

to contribute to success. The principal's leadership is clearly acknowledged by the teachers; and her organised, systematic work has a positive impact on the different areas of school life.

One of the most significant areas of impact is the ongoing evaluation of teachers. School C practices a strict and comprehensive system of teacher assessment that has evolved from a formative process to a process of evaluation.

School structure and supervision is entirely focused on the work of the teacher in the classroom; this is the space where all organisations come together. The constant evaluation of their work engenders effective practices from teachers that involve planning and following their curricula.

Another impacted area is student evaluation. The school organisation is designed to continuously measure student performance; SIMCE evaluation forms a part of this system of accountability.

Table 5-4: Paradigm codification, school C.

Conditions	Action/interaction	Consequences
Systematic school organisation	Constant evaluation	Structure and effective classes.
Positive classroom environment.	Effective use of time.	Student motivation and learning.

Using the paradigm methodology, table 5.4 displays two essential conditions that generate action and consequences. Systematic school organisation is a primary condition that produces a series of practices aimed at ensuring proper work by the teachers. The organisational system includes an effective mechanism for constant assessment of the teacher's work, evolving from a comprehensive system of observation to an accepted formal evaluation. This main action carried out by the school organisation ultimately produces a positive and visible consequence consisting of a structured and effective class delivery.

The second part of this chain occurs when the establishment of the teacher's systematic style becomes a condition that generates a positive classroom environment. This outcome enables teachers to use their time effectively, leading to greater student engagement and more efficient learning.

5.4.4 Comparing schools effectiveness

All three school cases share a high enrolment of disadvantaged students and a setting inside a deprived urban surrounding area. At the same time, the interactions and measures undertaken in the schools respond to unique individual conditions or scenarios. In this sense, four main dimensions can be characterised to form a partial explanation of the performance of a school. These dimensions are “context of teaching”, “type of leadership”, “school culture”, and “teaching styles”.

Table 5-5: School dimensions and their linked SIMCE results.

School dimension	School A	School B	School C
School culture	Conflictive	Flexible	Structured
Context of Teaching	Unsupervised	Independent	Monitored
Teaching styles	Traditional	Comprehensive	Systematic
Leadership type	Fragile sense of authority; unacknowledged.	Acknowledged but not crucial.	Strong leadership presence acknowledged

Table 5.5 reveals how schools present different responses in each dimension. All these dimensions can also be conceptualised as contextual variables that affect how teachers ultimately interact with students and achieve their educational results.

In the case of school A, each dimension has a negative connotation, suggesting an explanation of the reason that this school scores lower than school B and C. In school A, the school organisation is defined by both the LT and the teachers as conflictive, with a teaching context that lacks any generalised supervision, and teaching practices that are mostly associated with traditional forms of pedagogy. Despite these identified characteristics in school A, an assessment of the school is no easy task. Confronting and conflicting discourses exist within the school to explain the poor SIMCE performance.

Schools B and C both present more positive categories, and the differences between the schools relate to their approach to dealing with student disadvantages. School B holds a strong political statement about the adequacy of the educational system in vulnerable contexts; and school C takes an organisational approach aimed at efficiency. The analysis of School B produces a clearer definition of the relationship between school performance and

SIMCE scores. Both the teachers and the principal describe the school organisation as a flexible system that produces an independent teaching context. Teacher practices appear to be comprehensive, and reflect a high commitment to student learning.

Finally, school C presents the clearest vision of processes and structures, with a precisely regulated school organisation and a precise procedure for evaluating the work of the teachers. These conditions generate a different discourse regarding the context and practices of teaching. The LT and the teachers all describe both the context and the practices as monitored and systematic. Visually, figure 5.1 displays the space occupied by the schools when two main categories are used for comparison.

Figure 5-1: Locating school A, B and C according to level of school organisation and teacher involvement.

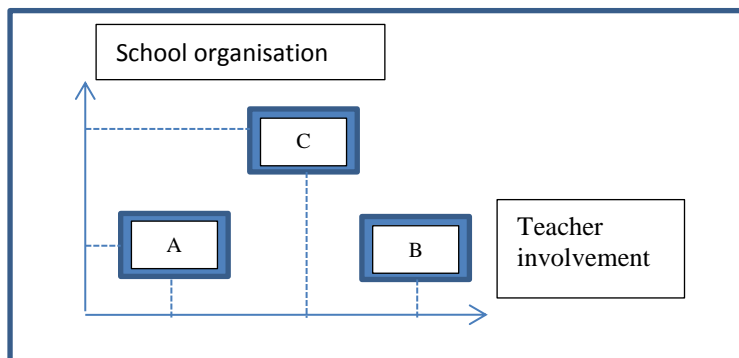


Figure 5.1 expresses the overall position of schools when two axes are combined. Each school occupies a different position in this scenario. In the case of school A, the grade of school organisation is lower than in school C, and the level of teacher involvement is also lower than the other two schools. School B is very successful, displaying a high level of teacher commitment, and a lower level of school organisation than school C. School C is highly successful, displaying a strong school organisation, which suggests that the firm teacher commitment in evidence may be arguably less crucial.

School B and C display a successful approach to student disadvantages, albeit in two different ways. In school B, the active teacher commitment succeeds in overcoming difficulties even without the inclusion of a strong principal and head teacher. Although the teachers describe the leadership team as important, the work of the teachers is seen as the major contribution in achieving school success. The flexible organisation style allows teachers to adapt the curriculum, pedagogy and use of time to fit the needs of the students. In

school C, the principal's leadership is a major element of a highly organised school culture in which teacher commitment does not have a significant impact, as it does in school B. In fact, teacher commitment is subordinate to school organisation, and specifically to ongoing teacher evaluations.

5.5 Second set of research questions

The second research objective aims to analyse two interrelated aspects of the impact of accountability and performativity demands on the school. The first part analyses how the case schools respond to the accountability process, and whether there are differences in their responses regarding practices and discourse. The second part analyses the effect of accountability and performativity on teacher identities, suggesting a link between the practices in the school practices and teacher identity.

This part of the analysis responds to the following research questions:

How do individual schools and teachers explain the current processes of agreement under the SEP program? How do individual schools respond to the current system of accountability and performativity policies? Are there differences? Have some schools learned to play the game? Do some refuse to play the game?

5.6 Meaning of SEP law

The meaning of the SEP program in schools can be summarised in terms of three fundamental aspects -- **management, resources, and bureaucracy**. Clearly for the leadership team and the principals, the SEP law presents a challenge in its regulation of significant new funding.

Table 5-6: Summary of SEP meaning by school.

	Bureaucracy	Management	Resources
School A	5	1	10
School B	4	6	11
School C	0	6	12

Table elaborated by requesting a matrix coding query table based on coding references in Nvivo 10.

Table 5.6 reveals the pattern of responses in each school related to the meaning of the SEP law. The most common meaning among schools is that the SEP program signifies the need

for the school to manage resources, and that there is a problem with bureaucracy in public schools. Although all teachers a leadership teams strongly associate the SEP program with resources, it is not seen as having been articulated for accountability; that idea is only evident in school C.

The SEP program is a more important issue for leadership teams than for teachers. The LT are connected with the administration demands of the program, which requires that they follow the process more closely; whereas the teachers are only affected by the organisational changes that take place in the school to adjust to SEP, and the effects on the resources needed for disadvantaged students. In fact, a common response from teachers to the question “what meaning does the SEP law have for you?” is “resources and support for disadvantaged students”, confirming that their relationship with the program centres around funding and assistance; in general, teachers are disconnected from the SEP law. The leadership teams concern themselves with the requirement for a better managerial design, while the teachers are relegated to the role of beneficiaries of resources. On the whole, teachers do not have much information regarding the SEP program; some of them do not even know the category into which their school is classified.

5.6.1 School A

For school A, as seen in table 5.6, the SEP program is strongly associated with resources. The principal emphasises the crucial aspect of SEP funding in the acquisition of new facilities and staff, but the association of SEP law with institutional changes in the school is almost absent. One factor that the principal does acknowledge is their lack of capacity initially to administer large amounts of funding, as this task represents a departure from the normal administrative functions of most principals: *“Before SEP, administering the school meant just simple actions; but now with SEP, administering a huge amount of money is entirely different. Many principals such as me were not prepared for that”*.

The SEP resources cover a vast range of activities and needs. The principal acknowledges that the SEP funds pay for teacher assistants, equipment, and teacher resources. According to the head teacher, *“we buy all kind of materials for our pupils, whatever teacher wanted, everything is implemented thanks to SEP funding, though the only weakness that we have is that we are not autonomous in managing SEP funding”*.

Another important circumstance that arises, particularly for this school with an emergent classification, is that the bureaucracy of local authorities hampers the maximum efficiency that can be achieved. Although school A is the largest public school in this county and blessed with the most economic resources, the staff feels heavily restricted by bureaucracy. For example, the resources necessary for programmes designed inside the school are administered by the local authorities, who compromise the schedule formulated by the school authorities. The teachers view the SEP program only as providing more access to resources and having no connotations related to accountability.

5.6.2 School B

SEP funding has a more integral meaning in school B than in school A. It is seen as a way to improve management and increase student resources, although bureaucracy is still considered a problem for the school. The principal emphasises that additional resources have certainly contributed to improvements in the school; however, these improvements are crucially dependent on how the teachers and the leadership team manage the new resources. According to the principal, “*people talk a lot about management but unfortunately it is not practiced*”, and the success of the SEP program depends greatly on how the principals manage the increased funding. One element that is constantly mentioned is the prevalence of bureaucracy and the resulting impact on the use and visibility of funding. School B is interesting with respect to the fact that although it is classified as autonomous, local authorities nevertheless play a strong part in determining how the school distributes the funding, as the UTP manager explained:

“I am working on a Plan of Improvement and I need to plan the actions in different areas. We have received \$90 million of which 10 per cent goes to local authorities as administrative charges. Then we pay a bus to collect students, it costs \$20 million. Next, we pay a lot of money on human resources, because local authorities do not provide us with all the teachers that we need. Therefore, we spend more funding than we should on human resources, precisely because we need different professionals to attend to student needs, for example, psychologist, social worker, teacher in arts, etc., so we pay them with SEP resources”.

The above explanation illustrates how the use and administration of SEP funding reduces its assistance in the most visible areas, i.e., improvement in the school environment and in

classroom resources for teachers. School B is a small school, and its funding depends on the number of disadvantaged students enrolled; therefore, the distribution of resources also affects how teachers perceive the leadership management and efficiency, as reflected in their opinions: *“The SEP program means to me access to resources, but it did not impact the school organisation, not at that level”* (T15). Thus, although the leadership team shows an awareness of the importance of appropriate management of the SEP program funding, as table 5.6 displays, the impact of SEP law in the school is more visible to the staff in terms of resources, rather than organisation.

5.6.3 School C

In school C, the SEP program marks significant changes to both the organisation of the school and the level of resources available for teachers. The principal relates directly to the SEP law not only in terms of funding, but also as an element of the transition of the school toward improvement. She mentions that in 2008, when the agreement with the government was signed, the mode of management in the school was changed. The principal states that *“the owner understood that we needed changes in how we organise our practices, how we administer the resources, and teacher training”*. As this school is privately managed and classified as autonomous, the access to funding is direct; there is no interference from the bureaucratic problems reported in both public schools. As The principal states, *“the owner always has been open to distribute the resources quickly and effectively”*.

The school administration understands that school practices needed to change; for instance, as the head teacher mentioned, *“now we are not allowed to expel students on behavioural grounds so we need to make some modifications; all teacher’s training has been costed by the SEP funding”*. The leadership team and teachers constantly refer to the SEP program with all the new resources available to attend to student needs. Teachers argue that they have plenty of resources to conduct various activities, and now they have all the facilities that they need. As one teacher reports, *“the level of resources is quite good, in all senses; for example, the administration bought new mathematics books to use with my students, and that helped boost student’s learning”* (T3).

Like in public schools, the teachers relate to the SEP program more as a source of resources rather than as an influence on school organisation. As one teacher states, *“the SEP program is not an issue of discussion”* (T3); and the organisation of the school is related to the principal:

“for me the school organisation depend on the principal and the SEP program is just resources” (T5).

5.7 SIMCE arrangements and its implication for schools

One of the main questions in the second part of the research relates to how individual schools respond to the current system of accountability and competition policies. The visible element of the new accountability processes is the pressure to measure student learning. As school is evaluated every year, SIMCE tests represent the main indicators of student learning, and are synonymous with the new policy in the school. The pressure from SIMCE testing has an impact beyond the work of the teachers to include effects on the organisation of the school and on teacher identity. The nature and degree of these related SIMCE effects depend on the structure of the school, and on how each school organises student learning and the work of the teachers.

SIMCE test pressure is a complex subject, and it is related to different aspects of school life. It is associated with how the school ensures adequate preparation for the students through school activities and organisation. It is also associated with how teachers feel about this accountability process, and how it affects their work and their identity.

In terms of preparing the students for SIMCE testing, the leadership teams (LT) and the teachers in the school use a variety of activities intended to help their students achieve the best score possible; these activities include at least five different mechanisms, as presented in table 5.7, that records the number of indications of each activity detected in all interviews.

Table 5-7: Summary of school arrangements for SIMCE.

	Assigned teacher in charge	Scheduling Test	Time Distribution	Teacher and Student reward	Teacher and student training
School A	1	1	1	1	7
School B	0	0	0	0	0
School C	0	4	1	3	6

Sources: Table elaborated by requesting a matrix coding query table based on coding references in Nvivo 10.

The following presents a description of each of these mechanisms according to school setting. In the case of school B, the interviews do not reveal any activities that argue for a critical position of SIMCE logic in the school.

5.7.1 School A: School arrangements for SIMCE.

Underperforming on SIMCE scores can signify critical pressure on schools. According to the principal in school A, however, the ‘culture of SIMCE’ is not present in the school, although they are not naïve with respect to its importance:

"I am not working for SIMCE results, but I am not naïve, I know that we are evaluated through SIMCE results, and we take pre-tests of SIMCE but without replacing hours of other subjects" (P1).

This principal’s declaration highlights two points. One point is the attempt to disassociate with the negative connotation of a ‘culture of SIMCE’, characterised by constant test preparation and excessive focus on training students rather than helping them to learn. Another point is the expressed reality of acknowledging the existence of preparation and arrangements for SIMCE in the school.

This awareness translates into a series of identifiable measures. One of the first steps is the distribution of time and concentration of efforts in particular subjects. Increased time and effort spent on the main subjects constitutes a rational form of preparation. Literacy and mathematics are prioritised over other disciplines that are considered, at least implicitly, to be less significant because they are not measured by SIMCE. Subjects such as history and science are also identified as important by the leadership team to be important, but this assessment is related to the year of their measurement.

Language and mathematics were each allotted eight hours per week, augmented by an attempt to embed these subjects into other disciplines as well. For instance, in religion or history class, teachers are required to emphasise or encourage general reading: *"We have tried to let teachers know that if reading comprehension is demanded by SIMCE, then all subjects should concentrate on work on reading comprehensively" (P1).* This concentration on some subjects, according to one teacher, inevitably ends in replacing hours spent on non-core subjects, especially when SIMCE tests are due: *"I had to change art class for History, and I had a big fight with students" (T7).*

Another identified measure is the establishment of a schedule for test preparation. Although school A shows little evidence of strict planning, it does include an arrangement to ensure

that children are exposed to test preparations. Pupils are encouraged to take successive pre-tests to evaluate their learning and to become accustomed to the test format in the two most important subjects – literacy and mathematics. The school carries out the general test twice a month, with weekly exercises. Schools arrange different processes to supervise and manage the efficient flow of SIMCE preparation. In this case, the school designates a teacher to be in charge of organising and coordinating the work of other teachers.

A third action of response by the school is the selection of teachers with a reputation for achieving successful SIMCE test results, a form of engineering intended to choose teachers that improve the results of the school. As an incentive, the school recognises and awards these teachers as a way to motivate their good disposition and commitment to SIMCE. Teachers state that the *'principal met all teachers who took SIMCE and gave them a special acknowledgment and gift' (T10)*.

Recently, the school has put greater emphasis on the commitment from students and parents to favourable SIMCE results by implementing more parent orientation and providing a letter before and after the test. The school has also established a system of visualisation, hoping to encourage students to compete with one another for higher scores. As one teacher declares: *"We included a graph displaying in their classroom the results of previous SIMCE pre-test, and then students started to see and compete to obtain the best results. It worked: we had had excellent results" (T10)*.

5.7.2 School B: Criticising SIMCE evaluations

In this school, neither the leadership team (LT) nor the teachers mention any particular school preparations or arrangements related to the SIMCE test. Instead, they believe that the favourable SIMCE results of their school are the product of a deliberate **opposition** to recognising the SIMCE as a legitimate instrument for measuring the learning of disadvantaged students.

Despite having no specific strategies intended to increase SIMCE scores and functioning in a disadvantaged setting, school B displays positive SIMCE results that are above the national average for its socio-economic classification. This school is defined as severely disadvantaged, and viewed as providing no opportunity for the students to overcome this strong contextual influence without employing a particular school strategy to correct the

situation; however, an *ethical commitment* to repair pre-existing social inequalities is present in school B. In this sense, there is a deep **awareness of context** and of what is needed to be successful without forgetting student needs. School B does not define SIMCE as an evaluation itself; instead, it operationalises it as a practice that involves a different aspect of teaching routines and school organisation. Relatedly, one unique aspect of this **school** is its **open criticism** of using SIMCE measures in the context of massive socioeconomic disadvantages. There is an explicit recognition in the school that the tests are not a measure that is applicable in disadvantaged contexts, where preparing students to perform on tests under a rigid methodology would represent a waste of valuable time.

The open criticism is expressed in **four forms**. One of the most significant forms pointed out by the staff is the element of **de-contextualisation**; they describe SIMCE as involving standardised results that do not take into account the background of the students. For this reason, teachers do not consider SIMCE preparation to be useful work. As one teacher explains, *“we are not in SIMCE logic, simply because here it is not possible, it is a loss of time, a teacher who is aware of necessities that this school has, should not work towards the SIMCE test”* (T15). Another teacher adds, *“SIMCE test is too standardised, and it does not reflect student realities, it is not objective, and it is not contextualised”* (T12). The teachers believe that the extremely disadvantaged context of **school B** should be taken into account; the compositional effect of the student background makes a significant difference toward determining how to teach, and at what level to begin teaching.

The second form of criticism from teachers is their view that SIMCE **induces a biased focus**. As previously mentioned, SIMCE encourages a school organisation that gives more attention to certain subjects, specifically those that are to be measured. Teachers state, *“I think if we would work for SIMCE, we should give students only particular things related to SIMCE as Literacy and Maths, and that would be a loss of time because you are leaving behind other areas”* (T13). According to the head-teacher, *“SIMCE left behind some subjects that students need for their integrated development, such as art, music, sport. The SIMCE demands Literacy and Numeracy all day”* (UTP2).

Teachers claim that there exists a contradiction inside the expectations of the Ministry and the authorities, who on the one hand ask for the complete development of the students – including their attitudes, skills, etc.- but on the other hand demand only specific knowledge

captured in certain subjects. Teachers explain that part of their successful strategy involves boosting *student dedication and obtaining from them* a commitment and a changed attitude to learning. Teachers declare that *"this is a contradiction for us because these kids also need to learn attitude, skill, know how to respect others, but the SIMCE does not measure them, for us, all those aspects are important"* (T15).

For teachers, the SIMCE represents a waste of time with regard to the process of preparing students for the test, as many schools do, which distracts teachers from their duties and more specifically, from attending to student needs. As one teacher expressed: *"We work based on curriculum, learning objectives and according to class reality, the composition of our students"* (T12).

Another criticism pointed out by the teachers relates to the type of **teaching style** that they see as necessary to obtain favourable SIMCE scores. Teachers argue that the style of education that targets scores is more of a training process than genuine teaching. Where there is pressure to raise test scores and an absence of close supervision, the teachers tend to accommodate an authoritarian form of teaching that leads to a *mechanical* preparation of the students. According to one teacher, *'With SIMCE you are preparing students to respond mechanically and how she/he should react in a hypothetical situation'* (T11).

Finally, teachers criticise the SIMCE as being **unreliable**. They question the predictive value of the test in evaluating student learning, asking 'what kind of prediction can be made based on SIMCE?' They consider SIMCE to be a meaningless measure, since the number of questions on a test cannot measure the knowledge and learning that a student achieves throughout the year, especially in their context. According to one teacher, *'SIMCE result is not a complete evaluation, and SIMCE score did not tell if a student would go to university, for me, it has no relation to that'* (T15). For this reason, SIMCE is not regarded as a proper system of evaluation in this school: *"We know that having good SIMCE score, does not necessarily mean that those students have actually learned much"* (UTP2).

5.7.3 School C: School arrangements for SIMCE.

This school accepts the SIMCE as a valid system for measuring student learning. The SIMCE tests are complied with as forming a part of the school evaluation system, which is very systematic and well instituted in this case.

The school takes different measures to assure good SIMCE scores. There are at least four recognised strategies in the school that are targeted at obtaining high SIMCE results. These actions are identified as strict planning and constant school supervision; more time available for mathematics and language study; accomplishing student engagement and providing extra care for underperforming students; and practicing the SIMCE tests.

Numeracy and literacy are prioritised as the two main subjects that require extra time for preparation at all levels. This increased allocation of time is related to the SIMCE accountability that demands these skills at all stages of learning, even in year 2. As one teacher stated; *“All subjects are important, but we emphasise SIMCE subjects, as Language and Mat; those have more time per week” (T1).*

Another strategy undertaken at school C is their effort to foster **student engagement**, through the institution of a system intended to boost student commitment to their school and to the SIMCE test. *“In the school effective measures related to how students take the test has been taken. Also teachers have been trained in how to prepare SIMCE test ” (T1).* This scheme has been in place for more than six years, and includes a **system of rewards** for the students; on one occasion, for example, the school gave the students a day off to visit a local park, an outing that was described as *“A day to relax and motivate students before the test” (T5).*

The final process in play is to practice taking SIMCE tests, which accords with the view in school C of SIMCE as an important part of a well-organised system of evaluation: *“We work for SIMCE, it is an indicator that marks the school; also we do pre-test fortnightly and each week we practice reading” (UTP1).* In addition to the practice, student results are continually evaluated by the school. As one teacher mentions, *“Until now, students have obtained good SIMCE results, but if those results are not positive, Directive team, start to observe classes to see which aspects is not running well” (T5).* As part of this process, students with unsatisfactory performance are taken out of lower priority classes so that they can have extra literacy and maths classes to reinforce and improve their learning.

Although the principal affirms the importance of SIMCE, she does not propose that all work should revolve around SIMCE preparation, partly because the school also responds to another external evaluation from their school group. As the principal has pointed out, *“The most*

important thing is to know the level of student progress; that is why we take many evaluations, and SIMCE is part of our system' (P1). Contextualising SIMCE preparation, a teacher asserts, "In reality, we are not 100 per cent focused on SIMCE preparations; I could say that 30 per cent is for SIMCE preparation and 70 per cent for content" (T5).

5.7.4 Summarising school arrangements in responding to accountability process

The first aspect for discuss is the level of impact of the SEP program on the school. The fundamental SEP principles are intended to improve teaching and student learning conditions in disadvantaged schools and to ensure school effectiveness by introducing accountability measures of school performance. Teachers in disadvantaged area schools describe their experience with the SEP program only as representing 'resources'. In spite of the importance of the new funding, the SEP program is not identified as having any significant meaning for the school; its function is limited to funding for student needs, and the teachers perceive no impact from SEP on the qualitative aspects of school functioning.

The experience of the principals with the SEP program differs. Public school principals find it difficult to manage the new funding, and their effectiveness is hindered by the bureaucracy involved with the administration of the funds. These bureaucratic problems, however, are not present for the principal of the private subsidised school, who expedited access to the funds from the owner.

Although the SEP program is not perceived as helping to make a qualitative change in school organisation, the accountability created by measuring student learning has a profound impact on schools. The national standardised tests as the main indicators of student achievement push the schools to emphasise test preparation for the students and adjust teaching practices accordingly. This limit on the notion of effectiveness leads schools to respond by seeking strategies to achieve successful scores. Although two schools employed similar strategies, the concepts and the manner of bringing those policies to life were dramatically different.

Aware of the SIMCE penetration into the system, school A felt the need to respond to the pressure; but the key aspect of student context and its influence on teaching practices and school organisation was somehow bypassed by the teachers. In the case of school B, the majority of teachers were openly critical of SIMCE practices, although acknowledging that some teachers depend more on SIMCE, especially those in the first cycle (years 1 to year 4)

where there is a greater emphasis on test preparation. In school C, both the principal and the teachers were open to SIMCE and easily assimilated the pressure from the system as forming a part of a regular system of supervision that was already instituted in the school.

School B was the one that refused to play the game of performativity. The school staff defended their autonomy based on their critical disadvantaged context. The leadership team and teachers were in agreement with respect to the necessity of taking student background and general school context into account to decide on a pedagogical approach. Here, the SIMCE not only represents a system that demands school results, but more dramatically it also exemplifies a type of practice that alienates the work of the teachers, reducing the spectrum of their decision and actions. This view differs from the outlook in school C, which assumes SIMCE as part of their practice of accountability with no concern for the status of the teachers. Thus, school C represents the supremacy of organisation over teacher autonomy; and in this case, the pedagogical decisions are not as important as they are for teachers in school B. Although both schools function in a disadvantaged context, the staffs have different ways of working with their settings. In school B the approach is based on teacher autonomy and commitment, whereas in school C the approach is embedded in a highly systematic and organised system.

Another, more profound and discernible impact from SIMCE pertains to **teacher evaluation**. Many teachers in all the schools see SIMCE as a mechanism to evaluate their work, however implicit; to the degree that the principals conducted an official discourse to explain that SIMCE scores do not represent a form of evaluation of the work of the teachers, and that the entire school is responsible for SIMCE scores. The head teacher of school A states it more clearly: "*We are conscious that SIMCE is the responsibility of every one of us*" (UTP 1). The teachers interpret this sharing of responsibility as a reinforcement of the pressure to obtain good results arguing that in the case of bad or mediocre scores, everyone knows which teacher is working with the underperforming class. As a teacher in school A affirms, "*in teacher meetings we understand and perceive that if one class had a bad result last year, everyone knows who the teacher was, there is an implicit accusation*" (T7). In a school with only one class per level, the situation is even worse. A teacher in school B opines that "*I think that in some way, although we do not work regarding SIMCE, we are evaluated in terms of it. Authorities are always looking for SIMCE results, and they would categorise us as good or*

bad teachers", adding that *"SIMCE is a measure, and it measures you, it implicitly does"* (T13).

This implicit measurement is perceived by most teachers as an **oblique form of pressure** that undermines the **teacher's spirit**. This pressure manifests more heavily during the particular years in which the students take the SIMCE test. During that time, teachers change their methodology to increase efficiency, and their mood reflects the rising tension. According to one teacher at school A, *"teachers are pressured because they know if they have a bad SIMCE, they would have problems and would have the Leadership Team supervising their work all year"* (T7). Some teachers also recognise, although perhaps not openly, the presence of some degree of competitiveness among the teachers in terms of who achieves better results; especially in those schools where there is more than one class per level, as in the case of schools A and C. The teachers express greater feelings of pressure during the first cycle, when more programs are in operation and students are more willing to 'cooperate'.

5.8 Shaping teacher identities.

This section is oriented toward deciphering the impact of performativity on teacher identity, effectiveness, and morale, as well as to uncover any signs of teacher resistance to the regime; and if resistance is present, to determine to what extent.

The interviews reveal different conceptualisations of identity among the teachers, which respond to how teachers and Leadership Teams (LT) visualise teacher identities and their close connection to specific school contexts, as well as to the defined macro context of educational policy implementation. A combination of definitions also emerges; in fact, one teacher may hold part of two or more definitions at the same time. Teacher identities fall into two types: One type corresponds with a professional, technocratic view of teaching practices, and the other view is closer to the definition of the teacher as a master, which corresponds with a holistic, even critical, vision of education. The first type relates easily to the 'new times' of accountability, and the second type emphasises teaching practices that are appropriate for use in disadvantaged contexts.

The emerging type of teacher identity as **'the professional'** fits into the new accountability system characterised by pressure to achieve results and by different school arrangements that

affect the definitions and the actions of the teacher. This professional type of teacher has two different sets of characteristics that further divide the type into two categories, the **'alienated'** and **'newer'** teachers.

Teachers in the **'alienated'** category react to the pressure created by increased requirements with feelings of stress and disaffection from what they are doing; their teaching tends to be mechanical. Moreover, the behaviour of alienated teachers shows a separation from its context and a lack of effective approaches to different student needs. Their teaching style aligns with the definition of traditional pedagogy and includes a strong emphasis on disciplinary action. In general, alienated teachers feel tired and disappointed with the new system of teaching that they consider to be more demanding and less rewarding; and they hold this same opinion in their definition of teacher involvement and critical participation in school organisation.

The **'newer'** teacher category represents the vision of the professional type of teacher that concentrates more on knowledge of subject than on cultivating student attitudes and behaviours. This category of professional teachers aligns with a technocratic view of teachers who operate in accordance with the new accountability logic. Newer teachers are willing to compete for good SIMCE results; they were educated with this idea in mind. The professional teachers in the newer category function within the SIMCE system of accountability, and in some measure their performance validates SIMCE as a method of evaluating teacher quality.

Newer teachers also represent a separation from the old master concept of teachers who concern themselves with every part of a student's development and the present vision of teachers who are only concerned with subject learning results. The increasing pressure to obtain good SIMCE scores encourages teachers to adopt mechanical teaching styles and to reduce the spectrum of their work with regard to student ability. All schools employ this type of teacher; and at least in some areas and at some levels, they engage in repetitive work that leaves behind certain essential aspects of student formation, such as critical thinking. Other teachers believe that newer teachers show a lack of commitment and involvement in student development. The newer professional type of teacher is associated with the most recent generation of teachers who no longer relate to the idea of being an 'educator' or to teaching values to their students; they are defined as 'sons of the new system'.

The second type of teacher identity that emerges is the teacher as '**master**'. This concept entails a holistic approach to teaching in which the forms of student vulnerability mark the teacher's actions and definitions. Master teachers define themselves as 'older' teachers, 'undervalued', and 'self-critical'.

The **older** teacher category does relate to age and experience but is mostly defined by a different approach to teaching that especially contrasts with the newer teacher approach. Older teachers maintain a holistic vision of education and a dedicated teaching style that includes giving extra time and help to students to improve their learning. This view requires a student/teacher relationship that stands in direct opposition to the 'light' association between newer teachers and their students. Older teachers view themselves and their distinct form of teaching as deeply committed, aimed at the complete development of the students, especially in dimensions that have no explicit emphasis within the new policy; i.e., student attitudes and values. Although some older teachers admit to having traits that are considered negative, such as a resistance to change, they still define themselves as professionals with a different and positive approach.

The second teacher category inside the master teacher type, '**undervalued**', is associated with the recurrent references to the limitations on and reduction of the role of the teacher. This perspective diminishes teacher identity as it expresses a decline in respect for and recognition of the work of teachers. Evidence of this disrespect is reflected by parents and by the media, which regularly scrutinise the work of the teachers and blame them for student failure. This situation engenders low teacher morale, as they find no acknowledgment of their contributions and no recognition of their role in the school. When there is no expression of respect for teacher authority from students, parents, or society, undervalued teachers feel that their work is no longer considered necessary.

The '**self-critical**' teacher comprises the third and final category in the master teacher type. Self-critical teachers demonstrate a conscious teaching practice and a critical view about the effect of the current system on teacher identity. According to the teachers in this category, the new regime of accountability alienates them from their work by constantly pushing them to engage in subject training. The system limits the autonomy of the teachers, demanding that they spend time only on those subjects that are considered important and eliminating the

development of other necessary skills, such as critical thinking. Teachers state that these limitations and constraints of time and subject degrade and reduce their role as educators to the work of a trainer. Self-critical teachers express both a critical view of the system and of the distinct practices within the school. This position sets them apart from alienated and undervalued master teachers, who resist the system while still defending their autonomy and retaining their pedagogical decisions over what aspects to emphasise in their classes. They also differ from teachers who are already part of the system and teachers who resist the system. These teachers have a clear idea of the role of teachers within the system, and openly criticise constant evaluation as an indication of an endemic mistrust of their work.

5.8.1 Response patterns

The following section describes and situates the characteristics of all types of teachers inside particular school settings. Although different types of teachers are evident in all three case schools, it is possible to discern a more homogeneous teacher population in some cases. In general, all teachers acknowledge the existence of an increasing pressure in the school to obtain good student results. Regular teacher and student evaluations reflect this new culture of accountability; this process affects teachers differently, depending on their definitions.

Tables 5.8 and 5.9 present the different patterns of identity category responses in the schools. Table 5.8 summarises responses according to two general categories identified, while table 16 gives more detail regarding specific teacher categories by school. As might be predicted, the teachers and the Leadership Team (LT) from school A show different forms of identification but with no mention of teacher self-criticism. In the case of school B, although teachers fit into the 'alienated' and 'new teacher' categories, the distribution and identification are clearly associated with 'self-critical' teachers. In school C, teachers do not show an ongoing discourse about teacher identity and indeed they do not identify themselves as corresponding with the categories of 'undervalued' and 'older teachers'. The following presents a classification of teacher's typology by school.

Table 5-8: Summary of two identity categories, by schools.

	'The professional'	'The Master'
School A	14	16
School B	4	17
School C	3	2

Resources: Table elaborated by requesting a matrix coding query table based on coding references in Nvivo 10.

Table 5-9: Summary of cross comparison between category by the interviewer and type of teacher identity.

	Alienated	New Teacher	Older Teacher	Self-critical	Undervalued
School A	6	8	10	0	6
School B	2	4	2	15	0
School C	2	1	0	2	0

Resources: Table elaborated by requesting a matrix coding query table based on coding references in Nvivo 10.

5.8.2 School A

Teachers from school A show different conceptualisations of teacher identity. Table 5.9 reflects a balance of 'Professional' and 'Master' teacher types in the school. This apparent contradiction can be explained by the widespread and constant differences expressed by school staff across many dimensions of school life. This might be yet another example of those differences, or it may be one of the basic aspects that have created the differences. Although many teachers in this school were retired, there were still significant differences with respect to the age and experience of the teachers in school A.

The category of alienated teachers is found mainly in Leadership Teams, and in some of the teachers. Older teachers were able to easily identify the existence of newer teachers and their method or approach to teaching practices; they also defined and described the characteristics of their own older teacher category. It is important to point out that these definitions come from a discursive exercise and are not necessarily how the teachers describe their actual work; the exercise is about defining their identity.

Some teachers identify and describe themselves as 'the old teachers', clarifying a difference from those identified as 'professional'. One experienced teacher states that "*we give more personalised support to students; that is not common anymore*" (UTP2). Teachers who hold

this vision are more deeply committed and in direct opposition to the ‘light’ association between newer teachers and their students. To illustrate this comparison, one teacher explains that there are *"more teachers teaching as instructors rather than based on vocation. They do their class and that is all. If the student has a little accident or if something happened to them, the newer teacher did not react, according to them that is not their business. However, I am a Doctor, mum, and I do everything, but that does not happen now"* (T10). Old teachers and new teachers tend to create a distance between them, and to compare their differential student approach. As many of the teachers interviewed in school A are well experienced, they situate the ‘old teacher’ idea as evidence of dedication; however, their analysis and ideas do not match the new context of accountability and student disadvantage. The idea of ‘old teacher’ was reminiscent of the past, when teachers enjoyed authority and respect.

As previously mentioned, the alienated teacher category is mainly a conceptualisation of from the leadership team, who view these teachers as utilising ‘traditional pedagogy’ and exhibiting a negative disposition toward changes and toward working with disruptive students. The alienated category is also associated with teacher tiredness, lack of involvement with school programmes, and a persistent resistance to change: *"their methodologies are old fashioned, they look tired, worn, and they have problems with their retirement, that is why they do not retire yet"* (T7). Problematically, this description applies to almost half of the teachers in the school.

Another discourse explores the undervalued category as related to the recurring descriptions of teacher limitations and a reduction of their role. This idea emerges only in School A. As one teacher declares, *"currently, teachers have lost their capacity to be a master and become a trainer that needs to show student results"* (T7), and *"we are just care-keepers for students"* (T9). The final element that teachers associate with their identity is a reduction in respect for and recognition of their work, as evidenced by parents and media that regularly scrutinise their work and blame the teachers for student failure: *"Teachers had authority, but not anymore; now if teachers are not able to win that respect, students would not recognise them"* (T8).

Perhaps the identity of the teachers in this school provides an example of how the old vision of teachers and their acknowledged authority no longer fits into the new school setting, where respect and authority are not granted automatically. At present, the generalised mistrust

expressed by these teachers makes it difficult to support the older vision of teacher authority and respect without examining a more concrete and active exercise of teaching styles.

5.8.3 School B

In contrast with the teachers in school A, teachers in school B reveal a significant difference in categories of identity. Teachers in this school describe themselves as ‘critical’, clearly describing the negative effect of the current system on their identities. In their words, *"teachers feel alienated because the system does not allow them to develop some abilities, for example, critical thinking"* (T15). Teachers in school B want to keep their independence: *"When I read the book of the new local program "Coronel read", I thought that this book would not develop student abilities, and I felt that this book restricts me as a teacher, my creativity"* (T11). Furthermore, teachers manifest specific actions of resistance to the continuing accountability demands as they relate to their disadvantaged context: *"In this school, we know that outside the door we need to give them (authorities) a tonne of paperwork. However, inside the door, I know how I should teach, and nobody could tell me what I need to do"* (T11).

This practice of resistance to the system is based on the need to devote more time to students and particular care to their needs. The system of accountability pushes teachers to work in a manner that does not align with student disadvantage and the curricula. Teachers feel that their effectiveness is threatened if they accommodate and responded to the accountability game. They express that students from disadvantaged situations have more deficits in knowledge and in their attitude toward learning, so that teachers need to work with a different rhythm and be concerned about different matters if they want their students to learn better. One teacher states, *"I need to see what is significant for my students, and we have not stopped being a teacher yet"* (T14). Teachers in school B are conscious of this situation and they manifest open criticism of the educational policy that on one hand asks for complete student development, while on the other hand just measuring test knowledge.

Teachers in school B distance themselves from the teachers conceptualised as ‘professional’, because this description codifies teacher practices and diminishes independence to make pedagogical decisions. Moreover, these teachers differ in point of view from those in school A with regard to the ‘older teacher’ connotation. Although teachers in school B show a deep commitment to learning, they define that commitment as reflected by teacher practices, not

by teacher identity. This definition is the main and significant difference between the teachers in school A and in school B. School A teachers are willing to define their identity based on an idea, without taking the surrounding context into account; while teachers in school B base their identity on a clear interaction with the student's context and with the wider educational environment.

5.8.4 School C

Teacher identity in school C is not positioned in a clear rationale with respect to the general educational system. Unlike teachers in school B, the teachers here do not express a straightforward opinion or definition of the policy environment. Teacher identity in school C is related to their highly structured supervision; the concept relies on teacher methodologies and regular school monitoring, rather than on their political position in the current system. Teachers in this school are willing to accept pressure for results and constant supervision because they consider that those elements contribute toward creating a good school. As one experienced teacher states, "*this is a new time, now there are more requirements*" (UTP1).

As a result of the view expressed above, the identity of school C teachers leans more toward the description of the professional type and the alienated category explained previously, although these definitions two did not have a strong presence. Teachers recognise the presence of some school pressure and the controlled mode of teaching; however, they do not see it as being very significant. The average age of teachers in this school is 30; it is possible that this characteristic makes them more inclined toward the idea of the professional type of position. The work of the teachers in this school can be defined as technical, operating according to a pre-determined plan and set of objectives. The principal mentions that one of the first measures taken at the beginning of the school re-structure was to assign Mathematics and Literacy specialist teachers to those areas. Another element that may play a major role in explaining the absence of political positions among the teachers is the strong leadership role of the principal, and the highly organised work at the school.

5.8.5 Conclusion on teacher identity

The accountability system seems to impact teacher identity in different ways. The establishment of a constant evaluation rationale in school gives rise to two different descriptions of their identity expressed by the teachers. The pressure to achieve good test

results in key subjects is seen as a factor that demands a teaching style more closely related to the function of a trainer than a teacher. The new notion of effectiveness as reflected by an increase in test scores creates a conflict for some teachers who have a holistic and critical vision of education this dilemma is summarised in the difference between the teacher identity types designated as the professional and the master.

Without a doubt, context -- understood as school organisation, ethos, and student background -- is a significant factor in teacher identity. It is possible to link types of teacher identity with different types of organisational style in school settings. For instance, in school A, which displays a conflictive organisation, teachers feel undervalued and do not exhibit a strong professional community. In school B, where the organisation is defined as democratic, teacher identity is strong and related to their criticism of the new accountability system applied to schools with disadvantaged students. Finally, in school C, which employs a highly structured and systematic organisation, there is no powerful discursive presence from the teachers; only from the principal.

The presence of disadvantaged students also affects how teachers visualise their position and how they believe they should work. For some teachers, student needs trigger a 'pedagogy of care' where their identity follows the master role in requiring attention to the student's complete development. For other teachers, student needs encourage a systematic teaching approach to that provides an academic foundation for students. These teachers associate their identity with the professional type. For yet another group of teachers, disadvantaged students signify specific challenges to their work that they are not always willing to assume, in terms of providing the necessary extra energy and time to redress difficulties. Of course, this reaction is not an intentional response from the teachers, but rather an explanation of how a traditional teacher approach sometimes does not fit with the realities in the classroom.

In summary, teachers who work in disadvantaged contexts face pressures from accountability requirements that demand that they teach their students in a standardised manner. This pressure to achieve results by working on specific subjects and within a specified amount of time has an impact on the response from the school staff, and affects the way that teachers see themselves as functioning in a system of effectiveness created by a central educational policy.

5.9 Conclusion

This chapter investigates two broad objectives of the study: An analysis of actions that are undertaken to improve school performance, and of the responses to the pressure of accountability requirements that arise when working in socioeconomic disadvantaged context, both of which help to highlight policy contradictions and school dilemmas.

Educational policy does not exist in a vacuum. School structure, organisation, the thinking and the actions of teachers make school a complex organisation that interacts with its immediate context. Schools work within and against different policies that simultaneously seek to shape their structure and effectiveness. Thus, one of the most important observations that emerges from this exploration is that the dominant concept of effectiveness does not consider the native common context that is the source of action in schools, making it problematic, at least, to obtain a straightforward idea of effectiveness and improvement.

To summarise the most fundamental result of this chapter, the need for **acknowledging the context** is defined as a core feature of this investigation. It is necessary to examine the nature of the actions and interactions that take place in schools from disadvantaged areas as they endeavour to manage the complexities of organisation and to respond to policy. Consideration and inclusion of context also arises as a declarative statement from the school in expressing their responsibility to make it possible for students to overcome the influence of disadvantaged circumstances. Both the Leadership Team and the teachers from schools B and C declare that student results depend 100 per cent on the teachers; they are responsible for redressing student inequalities and promoting opportunities to learn. An acknowledgment of their context makes it possible for schools to implement particular organisational changes, though schools B and C apply different methods. School B chooses a democratic organisation that involves negotiating with teachers and giving them autonomy and independence. In contrast, the changes in school C are based on a highly organised structure of teacher supervision and procedures. Thus, school B can be understood as a successful case of teacher professionalisation, and school C as a successful case of management. The case of school A is not clear; although the principal and head teacher both define the mission of the school in the same way, the teachers are not willing to accept this definition, and they tend to place the blame for poor results on external factors such as the family's lack of compromise, and deficits in the students.

Therefore, the answer to the question of whether or not to acknowledge student context proves to be the factor that most determines the characteristics of a school, and the resulting effect of these characteristics on achievement and on the school's relationship with the public policy of accountability.

The implementation of external accountability centred on student achievement as measured by standardised tests provokes different reactions among the three schools. The time limit allowed to achieve improvement and the constant pressure for results impacts schools from disadvantaged areas in three distinct ways. First, it pushes schools with below average SIMCE scores to emphasise short-term, 'quick-fix' strategies, and to adopt a series of activities that do not deal with the fundamental aspects of school function, such as a culture of improvement in teacher practices within the classroom. This pressure inhibits the development of institutional change. School A presents an obvious example: it displays no coherent and consensual processes related to leadership and to teacher practices within the school. The disparity between teacher logic and student background provokes tension at the organisational level and erodes the former mystique of the school. School A cannot be defined as an institution with a clear mission to redress the social and cultural disadvantages of the students; in fact, this lack of definition is a major problem. School A exemplifies a typical and undesirable situation created by reacting to the contradictions of the system-logic of high stakes accountability consequences without working on the most fundamental aspects of school organisation and pedagogical complexities required to function effectively in this scenario.

In schools that reveal positive academic achievement (and SEP classification) and an established professional teacher identity, the pressure from the system engenders a series of contradictions and dilemmas related to prioritising student context. These dilemmas and contradictions contribute to the development of a political discourse about understanding the meaning of effectiveness and the role of the school in the system. School B provides the clearest example of this situation through their decision to expand flexibility and autonomy, and to determine which aspects of student achievement should be emphasised and privileged. School B defines the intrusive process of accountability as decontextualised, and not productive for students who come from highly vulnerable contexts. Teachers defend their right to establish their rhythm according to the characteristics of their students, rather than by a strict timetable of accountability. A contradiction exists between the school and the external policies that demand a measured academic gain within a fixed amount of time owing to a

limited concept of improvement. The firm political view of teachers and school leaders in school B that emerge from their understanding of the contextual factors of their pupils, motivate the staff to reflect on their practices both in favour of and against the broader system of public policy.

In the school that features excellent academic achievement (and SEP classification) and a strong institutionalised practice, the pressure for external accountability has no negative effect on operations, but rather helps to reinforce local practices. The idea of school improvement and effectiveness is realised in school C, which offers the clearest example of this lack of effect. School C can be defined as a paradigmatic school that operates within logic of performativity. This school develops an internal structure that fits in perfectly with the logic and demands of accountability. To arrive at this highly organised school structure and practice, school C enables teacher awareness through visualisation of teaching practices, which serves to produce a sense of teacher professionalisation and a shared project, although this means that teachers do not have much flexibility and autonomy in terms of time. Teacher identity in this school comes closer to the new teacher category, without a recognised discourse that accounts for their condition within the system. School C reacts to and assumes the new pact with the government and its logic, which translates into reducing inequality by shortening the achievement gap of the pupils in relation to other comparable schools.

In summary, this chapter shows how three schools with a high enrolment of socioeconomically disadvantaged students discuss and adapt to the macro policy of accountability. Several impacts on school organisation and teacher identity, ranging from minor to major, are analysed, with a coherent school vision accepted by both teachers and school leaders identified as the decisive factor in accounting for success or failure. The next chapter discusses and integrates the most general and relevant findings with the literature review stated in chapter two.

6 Chapter Six: Discussion

6.1.1 Background

The Chilean educational design operates under a voucher system. Since its establishment, the most basic and fundamental principles of parent choice and competition have become open to debate and criticism. In light of the Chilean research, the current scheme does not appear to advance educational effectiveness, as was expected; instead, the most visible aspect of the system is the widespread presence of socioeconomic segregation.

An analysis of how the present system came about reveals the following process: In 1980, the existing authoritarian regime initiated the macro transformation of the system by force. Later, in 1990, the new democratic government instituted a series of remedial programmes (for example, MECE and P-900), in order to conceal the market logic with equity. Then at the beginning of the new century, the design began to undergo deeper adjustments than before, although without change the most basic principles of the system (Elacqua et al., 2011; González et al., 2004; Hsieh & Urquiola, 2006; Torche, 2005). In 2011, a new institutional design emerged with the introduction of the Quality Agency, and the gradual elimination of student selection and school fees in subsidised private schools. Notwithstanding this change, the voucher system is still in operation today.

The recent implementation and the uncertain future of the latest changes that have been applied makes it impossible to detect the impact that they have had on the system. The present study, however, analyses one of the most important adjustments to the Chilean design -- the SEP law -- as an example of the possibility of modifying pre-existing school segregation, and of improving the level of school academic achievement within voucher system operation. Ideologically, the SEP program brought two significant changes to the system. First, it repaired the regressive flat funding scheme, which did not discriminate against students according to their socioeconomic background. Before 2008, all students received the same amount of funding, which affected the quality of education for disadvantaged students who were largely concentrated in public schools. Second, SEP changed the nature of state function in connection with schools. Before the program, the state operated from a centralised position, interfering both in the funding and the operations of the school, a situation that was criticised by Beyer and Araneda (2009a), who defined the process

in terms of de-concentration rather than a real decentralisation. Thus, according to supporters, the current program brings a new impulse of decentralization, making schools responsible for their own process of improvement (Waissbluth et al., 2010). From its role of expert and executor, the state then becomes a regulator and evaluator (Raczynski et al., 2013; Weinstein et al., 2010), by introducing a system of accountability with high-stakes consequences for schools.

Policymakers argue that these changes will permit the schools to establish a new approach, one that leads to better schooling conditions for disadvantaged students, and to advances and improvements in the school that translate into visible academic gains and a decrease in school segregation, thereby making it possible for disadvantaged students to be ready to attend private schools. The analysis begins from this position. The most fundamental aim of this research is to evaluate the voucher system instituted in 1980 through the analysis of two principles held by the new SEP law adjustment: The idea that **accountability will advance school effectiveness**, and the conviction that **schools are responsible for their results**.

6.1.2 Relevance of the school effect

The first answer that arises to the question, "Is school responsible for student achievement?" is a clear "Yes"; however, to this answer we need to add a necessary corollary -- the school is responsible for those aspects that fall under school control and intervention. The basic logic of EER (Reynolds et al., 2014) states by meeting certain characteristic requirements (for example, leadership and teaching practices), the school can arrive at a successful approach.

Nevertheless, as evidenced by the literature review in Chapter Two, the school cannot be evaluated by only considering its internal processes or with a reduced understanding of its context. Including a robust notion of context has methodological, political and theoretical consequences.

Methodologically, the first attempt of this thesis was to evaluate the weight and the significance of context. **As previously recorded (pp.79), the effect of the school on student mathematics achievement score represents an influence of 29 per cent, which demonstrates that context is indeed important inside the Chilean system.** This finding means that 29 per cent of the total individual differences in mathematics scores occur at the school level. In methodological terms, this figure implies a clustered student score that calls

for the application of multilevel methodology. Context is not a nuance that needs to be ‘controlled for’ or removed (Hox, 2002; Luke, 2004; H. Luyten & Sammos, 2010; Raudenbush & Bryk, 1986; Snijders & Bosker, 2012); instead, it is a significant resource that can help to explain and evaluate school effectiveness.

Fortunately, the use of multilevel analysis is increasing and significant numbers of Chilean researchers have already used it; their findings can now be used to make comparisons, and to further establish the parameters of the value of the school as a resource, determining to what extent it contributes to the achievement of its students. Chilean research utilising two-level analysis has found the school effect to be consistent. To illustrate, studies using the SIMCE database in different years, starting with A. Mizala et al. (2004), using data from 1999, found a school variance of 29 per cent. Manzi et al. (2008), working with different years (2000-2006), found an average school variance of 31 per cent. Later, Mizala and Torche (2012), using data from 2002 and 2004, found a school variance of 20 per cent on average. Other studies using different datasets also found similar percentages (Collado et al., 2015; OECD, 2012b). Decidedly, the findings with regard to school effect in this research are consistent with those in the previous Chilean studies.

The focus on schools as units of analysis brings up the question of their importance for student attainment; specifically, to what extent do non-malleable characteristics of the school play a role in determining effectiveness. Schools should be held accountable for circumstances that are under their control, such as compositional effects. The failure to consider these factors has tremendous implications on how the schools are defined in terms of success and failure.

6.1.3 The implications of incorporating SES Compositional effect

This study shows a significant impact of SES on student mathematics scores, greater than what is found in the international research literature (Dumay & Dupriez, 2008; Thrupp et al., 2002; Van den Noortgate, Opdenakker, & Onghena, 2005; van Ewijk & Slegers, 2010). The data herein demonstrates that an increase in the SES composition of a school by one standard deviation is associated with an increase in mathematics test scores of about .46 of a standard deviation. This compositional variable accounts for more than double the effect of individual SES characteristics, which aligns with the existing argument that ignoring the compositional

effect leads to misunderstanding and misinterpreting the functioning of the school system (Cervini, 2009).

Similar research carried out in Chile shows a significant level of SES compositional effect that varies according to school type (Benito et al., 2014; Collado et al., 2015; Manzi et al., 2008; Mizala & Torche, 2012; A. Mizala et al., 2004; Trevino et al., 2010; Treviño et al., 2014). The findings herein are in line with that research with regard to the existence of a compositional effect and its impact on student attainment. The results of previous research employing different databases, years of evaluation and subjects, have been consistent. Studies using databases based on standardised measures such as SIMCE (Manzi et al., 2008; Mizala & Torche, 2012; A. Mizala et al., 2004; Treviño et al., 2014) International Civic and Citizenship Education Study (ICCS) (Collado et al., 2015), SERCE (Trevino et al., 2010), PISA (Benito et al., 2014; OECD, 2012b) have all found a significant compositional effect in Chile; namely, that aggregate SES is a stronger and more important predictor of student attainment than individual SES. In addition, this SES compositional effect is present in the educational system even when measuring language, mathematics, science and civic knowledge. These findings, along with those in this thesis, constitute substantial evidence of the existence of a pronounced SES compositional effect in Chile.

Some differences do exist between studies, however, with regard to the differential impact of the compositional effect related to the different types of schools that operate in the Chilean system. It is not possible to determine conclusively from the current research which type of school embodies the greatest SES compositional effect. This research, for example, discovers the strongest presence of compositional effect in private subsidised schools, a result in line with studies by A. Mizala et al. (2004), and Mizala and Torche (2012)³⁷; whereas in the study by Collado et al. (2015), private fee-paying schools display the strongest compositional effect. The difference in Collado et al. (2015) research may be related to the different operationalisation of the SES variable, as their study did not include a measure of income per family in the factorised and composite variable.

It is also possible that the most extensive presence of SES compositional effect in this research may be related to the homogeneity of the student population in the chosen private subsidised school. In support of this possibility, the study of A. Mizala et al. (2004) states that private subsidised schools “provide services to a broad representation of the population”

³⁷ Although the study of Mizala and Torche (2012) did not include private fee-paying schools.

(p. 14), assuming that this type of school has a more egalitarian total enrolment; whereas the student composition in this research comes closer to the interpretation in Elacqua (2012) and Mizala and Torche (2012) where notwithstanding the wide variety of students within the sector, each school enrolls students with similar characteristics, thereby establishing a sort of specialised school of niches. The end result consists of a homogeneous student population with similar SES characteristics in private subsidised schools, which attract families with congruent objectives and profiles for the purpose of accomplishing the goal of maintaining their position within a specialised educational market (Verger et al., 2016). Instead of facilitating the diversity expected by the founders of the voucher system, the exercise ultimately results in a considerably segmented educational scenario.

Different school types therefore represent a differential impact on the Chilean educational system. The ‘type of school’ variable is defined as a non-malleable characteristic that can be included in the ‘type X’ model as presented by Timmermans et al. (2011). In the case of related research in the Netherlands, this variable was not significant; for this reason, the Dutch authors argue in favour of the utility of this kind of variable in evaluating the accountability system. In contrast, the findings in Chapter Four demonstrate that the ‘type of school’ variable is indeed significant in Chile, and actually increases the socioeconomic compositional effect. This result implies that the ‘type of school’ variable in Chile reinforces socioeconomic segregation, and can thus be defined as a vehicle for socioeconomic segregation, a situation described by Torche (2005) as a qualitatively maintained inequality. Unlike in the Netherlands, the role of the ‘type of school’ variable is useful not only for understanding school accountability in the Chilean context, but also for identifying the type of system that allows differential school classification (with a different rule of the game).

Another important occurrence that deserves attention is the within-school segregation and the differential impact of family SES in different school types. The findings herein illustrate not just a difference in mathematics achievement **between** schools, but also a significant difference in the distribution of the relationship between mathematics and student SES **within** the school (see Chapter Four). Although most of the research using two levels of analysis has affirmed —implicitly or explicitly— that the same relationship between achievement in mathematics and family SES is found in all schools, this statement is far from true. This study confirms that private subsidised schools, in general, evince a flatter slope than public and private fee-paying schools. In other words, differences in outcome of students with different SES are decrease in private subsidised school. This decrease indicates, in general,

the presence of a distinct school environment that allows students with lower SES to perform better than they do in another type of school.

After establishing the reality of compositional SES effect, it becomes necessary to re-evaluate theoretical and policy implications. One of the assumptions behind the adoption of the voucher system was that the introduction of private schools would promote more diversity and efficiency in the system. Yet after 37 years of a market-oriented system of operations, the findings in this research, in accordance with those in other studies, others, corroborate that the Chilean educational system remains predominantly segregated.

6.1.4 The implications of socioeconomic segregation

Because this research was undertaken after the important 2008 adjustment to the voucher funding scheme, in addition to highlighting the differences in types of school, this study represents an important step toward re-opening more discussion about school possibilities and examining to what extent the current system improves ‘failing’ schools. In addition, it problematises the actual definition of a successful school. As previously mentioned, the SEP law aims to reduce socioeconomic segregation and to improve the quality of education for disadvantaged students (Collado et al., 2015; Mizala & Torche, 2012; OECD, 2012b). This research, however, finds no improvement in the equity of mathematics achievement results among students. Instead, the findings manifest a strong relationship: **a stronger SES effect on students results in a lower mathematics achievement on their part**. This relationship reflects an initial inequality for students with lower SES.

As previously discussed, this analysis remains incomplete without the inclusion of compositional SES effects; and as elucidated in Chapter Four, the impact of compositional SES is stronger than that of individual SES, which means that disadvantaged students perform worse in disadvantaged schools than they do in schools with a more mixed SES. This phenomenon is defined as a double disadvantage for disadvantaged students (Caro & Lenkeit, 2012; Willms, 2003, 2010). As also occurs in the case of Belgian education (Dumay & Dupriez, 2008), the extensive reach of school SES composition in the Chilean system can be linked to a quasi-market environment. The regressive form of funding that was present before 2008 largely accounted for the finding that private schools were selecting students according to their SES backgrounds (Elacqua, 2012; Mizala & Torche, 2012; J. Valenzuela, 2008). These extensive school selection mechanisms and parent choices (C. Bellei, 2013; Elacqua et

al., 2011; Elacqua & Martinez, 2011; Hsieh & Urquiola, 2006; Quaresma & Valenzuela, 2017) contributed substantially to widespread segregation.

The results of this research with regard to school SES composition offer important data and material reports that can inform the debates about school choice and school accountability (van Ewijk & Slegers, 2010). Currently, the mechanisms for school choice have resulted in the sorting of students with similar SES into similar schools. This situation might lead to increased achievement gaps, as students with favorable SES can benefit academically from having peers who share their SES, while students with disadvantaged SES miss out on this opportunity. A school accountability design that systematically evaluates schools based on test scores would inevitably end up rating schools with a disadvantaged SES as low-performing schools, since the similar SES peer effect and the associated school environment would make it difficult for students in those schools to improve academically, especially under the existing design of standardisation and time restraints.

Clearly the present results reinforce that the SES compositional effect is still significant; and those results have not changed from previous findings. After four years of operation, the impact of SEP program on school segregation is still a controversial issue. According to Chilean researchers (Elacqua, 2012; OECD, 2012; Valenzuela et al 2015), the SEP has contributed positively disaggregating vulnerable students though the cost is a continuum lost of public school enrolment. Despite that other researchers have associated some positive impacts of SEP program, the results displays in this research still manifest a persistent segregation, measured by compositional SES of school, in the whole system. This structural condition of the system is indeed an unequal learning environment for all students. The incentives offered by SEP program to reduce the socioeconomic segregation are insufficient to redress the effects of a consolidate system of voucher system and its effect on school socioeconomic segregation (Dominguez, 2014).

According to Torche (2005), the institutional organisation of the educational system is a relevant, distinct source of qualitative inequality. The privatisation reform begun in 1980 led to a replication of educational inequalities, and the practices of private voucher schools in particular compounded the socioeconomic status effect on student achievement. This conclusion is supported by this research, which demonstrates that **school types function as a**

vehicle of socioeconomic segregation, rather as an educationally diverse alternative for parents.

The particular measures of the SEP program implemented to redress segregation -- such as prohibiting the selection of students; banning charging an additional fee to vulnerable students; and increasing the funding per disadvantaged student -- have not been effective enough to amend the complex structural process of school segregation (J. Valenzuela et al., 2013). In addition, Peticara et al. (2013) has pointed out that assigning the funding based on the number of vulnerable students per school has resulted in generating a regressive system. In particular, schools with a high enrolment of disadvantaged students tend to be small or medium size, and receive less funding (the accumulated funding by school) than bigger schools with fewer vulnerable students. As evidenced in Chapter Five, a comparison of schools A and B reflects this incongruity. The total enrolment in school B is low, but the student population is characterised by a high level of vulnerability. School A has a much higher enrolment than school B, but fewer vulnerable students in the population -- and school A receives more funding than school B. Consequently, this financing mechanism in effect increases the gaps in the social composition of student bodies in different schools (Quaresma & Valenzuela, 2017).

Finally, the results in this research, as well as the evidence presented by other researchers, suggest that **the positive and optimistic predictions of the impact from the SEP law, especially as related to desegregation, have scarcely been accomplished.** Once the staff in the schools began to understand the newly adjusted SEP law as a mechanism for creating a second-best educational market (Verger et al., 2016) without dramatically changing “the rules of the game,” the resulting incentive toward selecting students and encouraging parents to choose schools according to their profile has led to educational outcomes that have more of an effect on school composition than on genuine educational practices.

6.1.5 Academic improvement within the SEP program

Another belief held by pro-market supporters is that the private school sector is more efficient than public schools. In contrast with the well-established effect of socioeconomic segregation, Chilean research does not provide a definite answer to the question of the effect of the market system on school effectiveness comparisons. One point of agreement with the view that emerges from the literature review is the vital relevance of the methodological approaches used to compare school effectiveness (Castro-Hidalgo & Gomez-Alvarez, 2016;

Manzi et al., 2008; San Martin & Carrasco, 2012; Troncoso et al., 2015). Particular attention must be devoted to the measurements that the Chilean government is currently initiating to evaluate school effectiveness, with the new Chilean Educational Quality Assurance System launched in 2011 that began to operate in 2015. San Martin and Carrasco (2012) and San Martin and Carrasco (2013) pointed out that, in the end, the Quality Agency opted to not use multilevel methodologies to evaluate and classify school achievement. This decision meant that the parents, rather than being presented with a proper system of classification, were effectively misinformed regarding the actual outcomes of school competition and parent choice.

Since many scholars have used individual data or even simple data aggregation of school achievement to make and present comparisons, private subsidised schools appear to be more effective than public schools. Relatedly, the data in this research demonstrates that when only individual SES is included, public schools appear to be less effective than private schools, confirming the results reported by several Chilean researchers; however, this research also demonstrates that when the study can control for family SES, and more importantly, for aggregated SES and school selection mechanisms, public school performance appears better in general than that of the private counterparts.

These results have a tremendous impact on school comparisons and make the central assumption of the market system at least problematic. **The efficacy of the private sector in connexion with mathematics achievement is no longer sustained when contextual variables are taken into account.** What these results suggest is that the efficacy of the market-oriented system may not lead to academic gains, but rather to the formation of social differentiation. Therefore, these results tend to support the vision of the authors who define the Chilean system as characterised by persistent inequality and perpetuating social segregation (Mizala & Torche, 2012; Torche, 2005).

In evaluating the SEP program after the first period of implementation, different researchers emphasised examining the area of academic achievements. Although several researchers (MINEDUC, 2012; Peticara et al., 2013; Raczynski et al., 2013; J. Valenzuela et al., 2013) were able to establish academic gains attributable to the SEP program, the methodological limitations in their research made this claim questionable. In fact, Chilean researchers who focused mainly on establishing the academic gains related to the program overlooked the importance of considering contextual factors in order to understand school comparisons. Yet

as underlined in this research, contextual factors not only play a role in understanding school comparability, but more significantly, they have critical implications on how to define effectiveness and evaluate the real possibility of schools redressing pre-existing inequalities.

The literature has verified that de-contextualising the analysis misrepresents the effectiveness of school reforms and the actual capacity of the school. Indeed, this lack of attention to the SES of the schools and the students results in a questionable rendering of the accountability process, that risks creating a misunderstanding of the actual school outcome and effectiveness (Downey, von Hippel, & Hughes, 2008). Despite the eloquent rhetoric of the SEP law and its accountability process, neither one considers the impact of SES compositional effect, thereby in effect, legitimising the configuration and the impact of an unequal educational system (Carney, 2003; Verger et al., 2016).

6.1.6 Micro impacts of macro policy. The sociological and educational consequences of accountability policy: The case of the SEP program.

The SEP program was defined as a new paradigm (Raczynski et al., 2013) in the Chilean educational system. It not only adjusted the flat and regressive funding system (A. Mizala, 2007) but also introduced a new impulse toward decentralisation to make the schools and their staff responsible for student achievement. The state moved from a direct intervention (for example P-900), to the regulation and evaluation of the school processes for improvement. Advocates of the new adjustment celebrated the new logic introduced by the SEP law for allowing schools to create their own plan of improvement, thus making the owners, leadership teams and teachers responsible for results. These changes were seen as positive by most Chilean researchers, and the changes were considered to be a real opportunity to improve the academic achievements of disadvantaged students, and to redress inequalities and school segregation.

Since its establishment in 2008, different researchers have evaluated the impact of the SEP program with an emphasis on academic gains. This study, however, includes a discussion about the educational aspects that form an interpretation of the meaning of academic gains, in order to inform the argument that analysing academic achievement without regard to the context of a school can lead to misleading conclusions. Thus, differing from most Chilean research, the discussion herein takes into account the qualitative aspects of program operation and application, including the perspectives of those who are directly involved -- the sense-making from principals and teachers. As introduced in Chapter Two, the success or failure of

a program can be explained in the particular arena of its implementation; and the reactions of principals and teachers become crucial to understanding the long-term impact of the new paradigm of improvement.

6.1.7 The meaning of the SEP program

One of the first requirements for an understanding of school operations related to the SEP reform is to ascertain to what extent the principals and the teachers are recognised as being a part of the process of improvement in the school. According to the findings presented in Chapter Five, the meaning assigned to the SEP program differs among the principals in the three case schools.

Principals in public schools view two aspects of the SEP program as challenging: The preparation required to successfully manage the significant new funding, and the bureaucracy associated with public administration.

Public school principals acknowledge their lack of confidence in their administrative ability with regard to the new funding, and their awareness of the fact that the success of the program is dependent on their management. As the principal in school A states, *“Before SEP, administering the school meant just simple action; but now with SEP, administering a huge amount of money is entirely different. Many principals such as me were not prepared for that”* (P1).

Another point of contention expressed by public school principals is their difficulty in accessing available resources created by the inappropriate interference of public bureaucracy. The principals complain about the bureaucracy hindering their ability to use resources and to effectively implement the program. This situation confirms the legitimacy of the correlation established by Peticara et al. (2013) who associates the use of resources with an effect on SIMCE scores; however, in Peticara et al. (2013) there is no mention of the dependence on local government municipalities³⁸ for the administration of funding in the public sector. The bureaucratic impact on the experience in school B significantly affects their use of resources,

³⁸ In 2012 a report of the *Contraloría general de la República* (comptroller) established that in several municipalities a significant amount of public funding was used on other matters, and not directly on activities established by the law. While this report was publicly discussed in a major media outlet, it was not a major concern. See www.ciperchile.cl, in Spanish.

even though the school is classified as autonomous. The following quotation from the head teacher describes this situation:

“I am working on a Plan of Improvement, and I need to plan the actions in different areas. We have received \$90 million³⁹, of which 10 per cent goes to local authorities as administrative charges. Then we pay a bus to collect students, and it costs \$20 million. Next, we pay a lot of money on Human resources, because local authorities do not provide us with all the teachers that we need. Therefore, we spend more funding than we should on human resources, precisely because we need different professionals to attend to student’s needs, for example, a psychologist, a social worker, an arts teacher, etc., so we pay them with SEP resources” (head teacher, school B).

The case of private subsidised schools as presented in Chapter Five reveals a different scenario. For the owner and leadership team in school C, the SEP program mean an opportunity to further develop the school organisation to respond to the needs of their students. According to the principal, the school had no problems related to bureaucracy because of the owner’s efficient resource distribution strategy.

The teachers unanimously identify the meaning of the SEP program as relating to resources, rather than to a substantial transformation in the school. According to the evidence herein, teachers in all three case schools attribute the new funding to a significant improvement in the availability of resources for disadvantaged students. Apart from this widely recognised economic improvement, teachers do not know much about the SEP program or its relationship with a plan of improvement. They have no awareness of a part of the program related to substantial organisational changes. For example, many teachers do not even know the classification of their school according to the SEP law. The responses from the teachers suggest an absence of active participation from the staff in school plans for improvement, and that this area is almost exclusively the domain of the leadership team in the school. Thus in this case, the decentralisation principle of the SEP program does not extend to teacher practices.

³⁹ This currency is expressed in Chilean pesos equivalent to US\$ 135.000 approximately.

6.1.8 The impact of school leadership

As previously described, teachers have no knowledge of an improvement plan elaborated by the leadership team that might be considered evidence of a low level of democratic governance in the school.

In addition, the principal of school B freely expresses his criticism of other principals' management of their schools. He states that many principals are unable to put into practice the idea of working collaboratively and increasing teacher participation in the organisation of the school. The principal sees this inability as stemming from a lack of democratic governance and the persistence of authoritarian relationships. This assessment from the principal of school B is also supported by Elacqua, Martínez, Santos, and Urbina (2013) who suggest that school operations are implemented top-down without involving teachers in the process. In a socio-historic analysis, Avalos (2004) describes an interesting past counterpoint to today's methods: principals were appointed directly by the Pinochet dictatorship, and teacher unions were abolished. Schools were governed by an authoritarian regime, whereby teachers were not allowed to participate in school governance and their role and value were significantly diminished (Castro-Hidalgo & Gomez-Alvarez, 2016)⁴⁰. In this light, the assessment pronounced by the principal in school B might suggest that some schools today may still exhibit some residual effects from the hierarchical, authoritarian legacy from the past.

This piece of evidence suggests the need to re-analyse one of the central aspects highlighted by advocates regarding the decentralisation and responsiveness of the educational community. There are three points that deserve new consideration. One is the persistence of bureaucracy in public schools that inhibits the effective flow and adequate use of resources (in school B). A second point is the view that the capacity⁴¹ of the principals to lead a democratic organisation appears to be an important variable in establishing a plan of

⁴⁰ According to Avalos (2004), early democratic government regulate and respond to teachers' demand enhancing the Teaching statute. It reinforces teacher rights as a profession (e.g. minimum national salary and benefits related to experience) and teaching conditions. Currently, the passed National System for teachers' professional law developed in 2016, introduced important changes on working condition and specially more rigorous requirements for initial teacher education program (see Valenzuela and Montecinos, 2017).

⁴¹ Successive democratic governments have not addressed the creation of an integrated platform to develop a national policy on school leadership. Although there have been important advancements since 2004, such as the definition of performance and professional recruitment, there are persistent problems in principal preparation and the implementation of a coherent policy between other school reforms such as the SEP law. See more in Weinstein and Hernandez (2014).

improvement (in school A). And thirdly, the limited level of teacher involvement in school governance (school C) reduces their role to a ‘beneficiary’ of the new resources in the program.

6.1.9 The type of institutional logic

A determination of teacher sense-making is considered essential to uncover the qualitative aspects of effectiveness. The discourses of the principals and teachers make it possible to appreciate how the policy of effectiveness is implemented. Drawing on related research by Fullan (2001), there are two aspects for discussion. The first one acknowledges that the teacher community is central in sustaining student learning, although this research differs from the work of Fullan in revealing empirical evidence that the community does not necessarily serve to accommodate teachers to the ‘new’ culture of accountability as defined by the author. In the case of school B, for example, teacher interactions contributed to building a community that reinforced a critical position against policy standardisation.

As an experienced teacher states: "We talk a lot between colleagues, we pass the information about students to have one constant or common position in front of them"[...] “we ask for help in pursuing an improvement as a teacher” (T11).

Another teacher adds: “The SIMCE test is too standardised, and it does not reflect student realities, it is not objective, and it is not contextualised’ (T12).

The second aspect for discussion is that teacher interactions are framed within a particular social space. The institutional logics introduced by Bridwell-Mitchell (2013) are a significant attempt at classification and interpretation of different school logics according to teacher interpretation and sense-making. To restate Bridwell-Mitchell (2013) definition, the productivity logic accounts for market and bureaucracy. This logic not only emphasises a rational and planned goal of achievement; it also values the outcome as objective. School C exhibits and fits perfectly into this logic.

Principal’s words: "The student evaluation means evaluating the curriculum that we are teaching; we constantly supervise what teachers are teaching; that is why we have all books and planning records well organised. Teachers know the timetable, they know which path to follow” (P1).

A teacher in this same school states: "We always work within a strict timetable, very organised and structured, these things make changing possible" (T5).

For school C, the SEP program indicated an opportunity to reorient school organisation to the explicit mission of student learning. The level of institutionalised school practices was well-developed, showing a degree of systematisation in key areas such as student behaviour and teacher pedagogy. The leadership of the principal was acknowledged and followed by teachers who accepted the structured and formal procedures in almost all school domains, including the establishment of internal accountability by evaluating student progress consistently, and taking measures to train teachers in weaker areas. The school showed efficiency and standardisation of practices under the explicit control of its leaders, rather than demonstrating the autonomous professionalism of its teachers. As shown in Chapter Five, teachers in this school did not develop a strong professional identity, and the LT did not offer a critical vision of the system: on the contrary, they affirmed that the system of accountability was necessary to work with students in need. School C is, therefore, a good example of the logic of performativity illustrated by Ball (2003).

In contrast, the institutional logic of school B can be defined as participatory (Bridwell-Mitchell, 2013). School B developed a type of democratic organisation that allowed the teachers to be independent, permitting them to devote their efforts to different aspects of the student learning process. The school staff shared a strong sensitivity toward student context which translated into working with flexibility, autonomy and cooperation.

In the words of one experienced teacher, "We still have independence within the classroom; despite having a national curriculum and national timetable, we have the flexibility to choose our methodology. If we need to go slowly we can do that, and the most important point is student learning; otherwise half of our students would not learn" (T13).

Another teacher mentions: "We don't work according to SIMCE logic, simply because here it is not possible. It is a loss of time; a teacher who is aware of necessities that this school has, should not work towards the SIMCE test" (T15).

Another teacher adds: We cannot be worried too much about tests and following the curricula strictly; otherwise students would learn the half what they are learning' (T17).

And a head teacher highlights the implications for pedagogy and curriculum: “SIMCE omits some subjects that students need for their integrated development, such as art, music, sport. The SIMCE demands Literacy and Numeracy all day” (UTP2).

The institutional logic in school B authorises the choice for teachers to refuse SIMCE pressure as a legitimate mechanism in which to frame the student learning process. The flexible context developed by this leadership team involves the teachers in decisions related to teaching style and curriculum delivery. The teachers in this school exhibit a strong identity as ‘masters’ that conflicts with the new policy of accountability. Defining the institutional logic as participatory and technocratic served as a framework for teacher sense-making in this school, and the valuable insights produced by this process result from acknowledging that the accountability process restricts the actions of the teachers and diminishes their sense of professionalism. The conflicts expressed by teachers in this school faithfully represent the side effects described in critical sociology. As exemplified by Louis et al. (2005), teacher resentment in school B stems from their opinion of accountability and especially the fixed time and subject demands as being in opposition to their professionalism.

Although schools B and C represent quite well the typology of Bridwell-Mitchell (2013), the case of school A provides more of a challenge. The teachers here do not acknowledge or accept the type of leadership proposed by the principal. In general, there is a struggle in the school to establish coherent practices in key areas such as student behaviour, teacher planning, and supervision of teacher pedagogy. In a symbolic space, the school was unable to establish a responsive shared discourse about student learning. Instead, there was a predominance of disputes related to different visions of how schools should respond to student context.

The head teacher in school A explained: “I supervised teacher’s work more than the principal, however, always it has been a bit tense, it has produced teacher discomfort” and “They look to blame somebody else, they say ‘there is no parent support,’ ‘kids did not behave well,’ and ‘s/he is not motivated,’ they used these kinds of arguments” (UTP2).

This vision was given by the teachers: “We expect disciplinary actions for students: we feel alone, nobody to help us; we have been alone during the year” (T9).

Another teacher states: "There are three different visions about who is responsible for SIMCE results. The official discourse is 'we as school,' but in practice it is the teacher, and in teacher's opinion it is student-teacher-parents" (T7).

The institutional logic presented by Bridwell-Mitchel presumes the existence of a recognised culture within schools. However, many schools fail precisely because they are not able to display a clear, coherent culture of improvement, or to hold a collective and consensual discourse on the subject. The evidence reported by CEPPE (2010) describing the situation of many 'in recovery' and 'emerging' schools underlines the fact that school leadership with regard to school organisation is the most deficient aspect of these schools. Nevertheless, these schools prefer to avoid this problem and devote their work to short-term efforts that boost student achievement. The failure to establish a clear and shared ethos in school this school leaves the principal with a fragile sense of authority, while teachers deviate from the primary objective of student learning. According to the classification delineated by Cristián Bellei, Vanni, Valenzuela, and Contreras (2016), the trajectory of this school can be situated between restricted and incipient improvement.

6.1.10 The impacts of accountability within schools

The impacts of accountability schemes reported in England and the United States can also be identified in the experience of teachers in Chile. The current process of accountability through standardised tests demands improvement within a fixed period of time. This crucial time requirement puts pressure on schools, teachers and students, and has serious consequences on the quality of learning in school. The major impacts illustrated in international studies are related to teaching and learning processes, quality of schooling, teacher morale and student exclusion (Minarechová, 2012; Pandya, 2011; Ravitch, 2010; Taubman, 2009; Webb, 2006; West, 2010; Wrigley et al., 2012).

In the Chilean context, the SEP law was defined as a successful reform precisely because it emphasised the internal processes of schools. Unlike the responses elicited by previous programs intended to improve the quality of the educational system, SEP supporters found value in the idea of a 'sense of urgency' (Weinstein et al., 2010) to improve the academic achievement of students. Supporters also cited a change of focus and rhythm brought by the SEP reform to break down the inertia present in schools. Nevertheless, in spite of this positive vision of school improvement, the evidence exposed in Chapter Five of this research argues that the logic of improvement of SEP law, including the sense of urgency, is causing a

decline in school quality and is a factor in maintaining an authoritarian vision of improvement.

Although the SEP program was not defined by teachers as a new, comprehensive approach for school improvement, the logic of pressure to achieve better academic results remains evident. This pressure for improvement is made even more tangible by the use of standardised tests, especially in mathematics and language.

As one teacher from school A puts it, “We feel pressure to raise student results. Indeed, there is extensive work that accompanies the actual exercise of teaching: we need to mark, fill forms, get results and include them in a database, respond to other programs, take the test, and we even need to work in our portfolio, and all of these add up to too much. We need to meet different requirements, and we feel pressure from the Ministry of Education through SIMCE and from local program ‘Coronel learn’ for student literacy as well. We do not even have time for planning” (T9).

In general, teachers feel pressured to achieve good SIMCE results. The increasing requirements of external accountability make teachers feel overwhelmed, and moved to constantly scrutinise themselves. Nevertheless, as evidenced in Chapter Five, specific teacher responses depend on the structure and institutionalised logic of the school. For all principals, the pressure to boost SIMCE results represents an inevitable reality; but their reactions vary widely. Schools A and C have explicit and systematic organisational practices that assume the logic of accountability, such as helping students to respond well to the tests, and focusing on the subjects of their evaluations. As a result, more time was spent per week on subjects such as mathematics and language than other disciplines, and students are trained to give responses tightly oriented around the SIMCE format.

These results suggest what Wrigley et al. (2012) calls a ‘pedagogical reduction,’ where teachers closely adhere to the testing formats in their teaching practices, thus establishing the phenomenon known as ‘teaching to the test.’ Similar results are also found by Elacqua et al. (2016), who stated that a high percentage of teachers declare that they frequently use SIMCE preparation as a main measure of improvement in school results. The pressure for high scores in SIMCE tests within a fixed period pushes teachers to use a more regimented training style rather than a flexible pedagogical approach. The time pressure specifically inhibits teacher innovation, and leads to an authoritarian form of teaching and a mechanical preparation of students. This situation comprises the visible connection between accountability and an

authoritarian school organisation and teaching style. Similar findings are described in Rojas Bravo (2013) who states that teacher objectives are closely related to the institutional pressure to achieve academic gains, no matter how the student learns. In this scenario, Rojas points out that “teachers normalise the idea of control and discipline, legitimising authoritarian forms of teaching” (p. 96).

The negative consequences of accountability do not only affect the teaching process; the teachers themselves also suffer from the same procedures. Teachers who specialise in subjects that are considered more important, and who work in an evaluation year (years two and four) experience increasing pressures and extra work. According to McCarthy and Lambert (2006), accountability uses standardised measures to make a direct connection between teachers and student results without considering the context of teaching. To some extent, teachers in school A feel stressed, constantly evaluated, and blamed by parents and authorities for negative student results that are also discussed publicly in the mass media.

Teacher identity in school A is framed within a contested school organisation and an unclear culture of improvement; it is therefore characterised as fragmented and polarised, resulting in a non-consensual teacher community. Some teachers acknowledge the developing vision of the teacher as an instructor rather than a master.

As one teacher argues, "More teachers (are now) teaching as instructors, rather than based on (a sense of) vocation. They do their class and that is all. If the student has a little accident or if something happened to them, the newer teacher did not react; according to them that is not their business. However, I am a doctor, mum, and I do everything; but that does not happen now" (T10).

The instructor model means adopting a mechanical approach to teaching, despite the superficial practice of involvement with students. The identity of these teachers perhaps reflects the conflicts and tensions produced by a new form of managerialism, compared with the traditional vision of teachers and their authority. Teachers in this school demand recognition without acknowledging the need to adjust their practices to the new context of vulnerability.

As pointed out in Chapter Five, teacher identity in school C was recreated through a structured and vertical school organisation. School C presents a highly organised environment with a prime logic of time maximisation. Teachers have little room for

flexibility and autonomy and use a planning package for almost all subjects, while students also have a strict regimen of evaluation that is used to assure teacher content, delivery and performance.

Ball (2003) states that the type of school organisation oriented toward emphasising academic gains restricts teaching actions and de-professionalises the role of the teacher. Indeed, as the evidence in chapter Five reveals, the teachers in this school conform to the idea of technical staff who operate according to a predefined plan and set of objectives. Teachers in school C are accustomed to a high level of pressure, and to continued micro- and self-management. The logic of productivity also filters down to their identity as teachers, pushing them to add value to themselves through training and meeting formal requirements. The identity of these teachers is described as professional, albeit lacking a rationale that connects their practices to other general school practices within the logic of accountability and market.

Teacher identities in school A and C are an expression of the consequences of accountability that have also been identified in other contexts. In contrast, the findings of this research show that teacher identity in school B can be situated inside a logic of teacher reaction and resistance to the new accountability process. The supremacy of context and democratic school organisation defined in this school motivates the teachers to distance themselves **from teachers conceptualised as professional by the new accountability processes**. Teachers in school B react to the logic of standardised tests by criticising the mechanical and simplistic vision of improvement. The principal and teachers are capable of analysing and responding to the implications of standardised measures in a disadvantaged educational context. Teachers express a critical vision of the current policy; indeed, they wish to retain their independence with regard to their use of time and their pedagogical decisions. Teachers resolve the dilemma of following a narrow curriculum and a fixed period of time while working with disadvantaged students by resisting the pressure, and dedicating more time to the factors that contribute to sustainable student learning, such as attitude and commitment. These teachers, like those identified by Wrigley (2013) in the English context, show that constant testing perpetuates inequalities and jeopardises student needs. According to teachers in School B, SIMCE preparations are a waste of time because they only entail preparing a student for a test, as many schools do, and this practice distracts teachers from attending to the real needs of their students.

6.1.11 Student consequences

The intense pressure for results not only affects curriculum, teaching practices and teacher identity, it also has an impact on students. Teacher descriptions of the negative impacts on students are similar to those present in international research (Minarechová, 2012; Pandya, 2011). According to my findings, teachers from different school settings assert that students are subjected to high pressure and extra work for test preparation.

The narrow curriculum and the continued training for testing has a negative impact on the quality of the classroom environment and on the presence of student interest. A teacher in school A, for example, states that the current classroom does not offer an attractive environment for learning (T17). Teachers in this school mention that students show less motivation to learn for SIMCE because they know that these tests have no direct consequences for them. To increase student interest in the SIMCE tests, school C works on their motivation by making them feel responsible for school results. In this way, students become involved in the logic of academic improvement through assurances of commitment to the logic of preparation and acceptance. Although teachers acknowledge that the students are fatigued, they see this situation as inevitable and necessary.

Another finding stated by Ravitch (2010) and West (2010) is that students are treated according to the possibility of their passing the test. Chilean research on school selection and segregation similarly reveals that students are chosen for enrolment on the basis of their academic background, as an attempt to maximise the possibility of increasing the academic gains in their school. This is the first step in valuing students according to their previous or their potential capacity to perform successfully. The descriptions of teachers and school practices, however, uncover a second method of treating students as objects of intervention. In school A and C, an extensive amount of time is spent on the 'more important' subjects like mathematics and language; and underperforming students are given extra classes in these subjects. In addition, students are given incentives to encourage competition that will enhance the achievements of the school.

As one teacher in school A declares, "We included a graph displaying in their classroom the results of previous SIMCE pre-test, and then students started to see and compete to obtain the best results. It worked. We had had excellent results" (T10).

A teacher in school C mentions that younger students in the first cycle are more willing to 'cooperate' with SIMCE preparation than the older students, whose participation was not as easily engaged.

The double process of student selection widely practised in the Chilean system substantiates that students are valued according to their ability to pass the tests, which accommodates to the new logic of accountability. Students outside the 'normal' parameter are viewed as being a harmful and negative factor for school performance. Teachers in school A who feel the pressure to achieve academic gains therefore exclude students with disabilities and pupils who are in need of extra pedagogic care apart from the normal processes required for school accreditation.

As one teacher explains: "They influenced the score; if I take them out the percentage would increase. They always answered carelessly; they needed to have assistance to respond to the test" (T10).

Thus, the logic of academic gains evaluated through standardised measures makes the idea of student selection and exclusion a viable strategy to achieve good SIMCE scores. Employing this strategy marks disadvantaged students as belonging to a 'type' that conflicts with the logic of accountability, and hinders the achievement of good results by the school. This rationale eliminates the possibility of considering this 'type' of student to be considered as 'objects of right' in themselves, and instead classifies them under the dichotomous logic of 'useful/useless.' To respond to the obligation to achieve academic gain, schools cannot also operate from a duty of care. A notable exception, however, is evident in school B, where teachers deploy an important pedagogy of care, as one teacher explained: "Teachers become a fundamental part of student's life. We cross the border; we are almost their parents (T11)".

The logic of accountability and comparability between schools in a marketplace system creates an incentive that distracts school efforts from their essential objective to educate students, and redirects the efforts toward competing and reaching high positions on league tables. As Ravitch (2010) states in the USA context, "what matters most is for the school, the district, and the state to be able to say that more students have reached 'proficiency'" (p. 159).

6.1.12 Drawing it together: quantitative and qualitative analyses.

As in other related research, this study approaches policy analysis by testing the assumption that the market is a force for improvement (Verger et al., 2016). The analysis is made relative to a particular local context, including its embedded socioeconomic conditions. Furthermore, the analysis incorporates the involvement of local educational agents to add the dynamic interaction of retention and resistance to macro policy implementation.

The market in Chile has been defended from its establishment under the Pinochet regime up to the present day. Although the supremacy of the educational market in Chilean policy is evident (for researchers), the characterisation of the market (by policymakers) has been euphemistically re-labeled as ‘parent choice.’ The use of this terminology for the market system hides its mechanisms and makes it difficult to assess and analyse one of the most significant causal assumptions -- that the market system enhances school effectiveness.

There are two points to discuss considering the evidence presented previously:

1. **The notion of school effectiveness.** The SEP program emphasises academic gain. Chilean researchers have identified some academic improvements, although the results are lower than expected, and the projections were done in the first period of the program by the schools through their plans of improvement (MINEDUC, 2012; Mizala and Torche, 2013; Peticara et al., 2013; Raczynski et al., 2013; J. Valenzuela et al., 2013). As far as methodological approaches to examine academic gain, all the researchers incorporate quantitative studies. Acknowledging a series of methodological limitations, the scholars argue that there it is impossible to establish causal inference to the effect of the program on academic gain; and that in the case of public school, **only a descriptive trend is available** because of the absence of a control group. The authors also recognise a general academic improvement within the period (2007-2011), although the progress cannot be linked entirely to the SEP program. Thus, with regard to academic gains, the effects of the SEP program can be characterised as limited.

Using a qualitative approach, principals and teachers question the success of the program. As international researchers have pointed out, there is a narrow measure of what constitutes effectiveness (Carney, 2003; Proudford & Baker, 1995; Wrigley, 2013). According to principals and teachers, the pressure to boost SIMCE results altered the functioning of the school, distorting their efforts through biased and decontextualised forms of instruction.

Although there are teachers who consider that the pressure for academic achievement is an inevitable part of the ‘new times’, they also recognise that the new notion of effectiveness emphasises the outcome and not the process.

In this research, Chilean principals and teachers manifest an increasing discomfort with the use of standardised measures. However, according to Quaresma and Valenzuela (2017) during the 2011-2013 period, school evaluation through SIMCE tests actually increased. Moreover, the authors state that the Quality Agency, which estimates a new performance index for each school, assigns SIMCE a weight of 73 per cent of the total value of the index. This centralisation of SIMCE as an indicator of and a synonym for quality is an excessive interpretation of its significance.

As thoroughly explored in previous sections, working within fixed time limits and under intense pressure to increase scores damages the process and quality of teaching. **Teachers working in disadvantaged contexts declare that this new situation is harmful to the curriculum, the pedagogy and ultimately the learning by the students.** They feel that the importance of the teaching process is diminishing, and the primacy of visible academic gain obscures a deeper notion of education.

The three school cases are significant examples to examine the theory of EER and sociology of education. All schools exhibit a high enrolment of students with disadvantaged backgrounds, although each school assumes the macro policy and organises its operations differently.

School A cannot be considered a successful school either academically or politically. The erratic institutional practices in the school do not enable the teachers to achieve what Hayes and Mills (2006) call productive pedagogies. The teachers do not acknowledge the social constraints and the school practices do nothing to reduce the academic gap. Politically, school A did not take part in an alternative process and offered no resistance to the plane of actions.

Both school B and C can be considered successful schools; indeed, they are classified as such by the Ministry of Education. Although they school share similar levels of academic success, their different approaches raise the question of what can be understood by the term ‘good schools’.

School C displays a high level of school organisation and teaching practices; however, theoretically, this school comes closer to the idea of performativity stated by (Ball, 1993,

1997, 2003). The question that emerges from this case is whether School C represents the right model for vulnerable schools. A policymaker might view school C as representing an example of SEP law success; but from a critical perspective, the school might represent the value from primacy of academic focus over the discussion of system inequalities.

School B is viewed by both the principal and the teachers as a social institution for social change, in which the context requires that they provide their students with more than just numeracy and literacy; in other words, the school cannot function as only a formal institution for the uncritical transmission of knowledge. The SIMCE tests and their standardised vision of academic gain transform schools into uncritical institutions divorced from their context. **This formal and superficial approach to student learning takes away all the potential of the school to redress social inequalities.** School B can be seen as an example of an ethical commitment to eliminate pre-existing social inequalities. The idea here is that, realistically, schools cannot do everything; but they can certainly do something (Hayes & Mills, 2006; Thrupp, 1999; Wrigley et al., 2012).

2. **Schools are responsible for their improvement:** the SEP reform adjusted the voucher system and installed a new vision of improvement. The school was defined as a privileged space where success or failure is produced; but this notion of school responsibility contains two essential aspects that need to be examined for discussion.

The first aspect is the internal configuration of the school. Delegating the responsibility to improve without first taking into consideration the type and quality of leadership and institutional practices that are in place prior to the inception of the program, such as a democratic school governance, might result in an unsustainable and authoritarian implementation. School C is a good example of a case in which the urgency to achieve short-term academic gains prioritised top-down measures for improvement without using a democratic process. This school led a development process that was very effective from an academic gain point of view; however, the practices, identity, and sense of professionalism of the teachers suffered from the lack of democracy. They were now seen as technicians charged with accomplishing pre-established school organisation, which undermined their sense of professionalism. The pressure for an 'efficient' use of time hindered their practices and eliminated the possibility of their implementing helpful pedagogical innovations. Interestingly, this school meets almost all the dimensions of effective schools described by Reynolds et al. (2014). Nevertheless, achieving academic gains cannot be the only point of an

educational institution. The quality of schooling processes and the important role of schools as agents of social change must be included into the total picture for analysis.

The difficulties in instituting a recognised leadership in school A offers an example of the problem that lives inside most schools. The CEPPE (2010) report established that most schools before the SEP program had significant problems related to leadership, making it difficult to project and sustain a process of improvement. The critical nodes displayed and analysed in this school highlight the fact that without a recognised, shared culture of improvement, the school can fall victim to a series of fragmented actions that in the end will make it impossible for them to formulate a coherent approach to school organisation that adjusts to the new accountability.

A second aspect for discussion is the relationship between the school context and its capacity to redress educational and social inequalities. The school effectiveness approach evaluates the school by emphasising internal capacities; however, contextual factors and the policy environment are also central to correctly assess the potential of the school. As this research illustrates, EER has been criticised for its decontextualised vision of school improvement, viewing the school as an island without connection to its social and political context. The SEP program incorporates this vision by assuming that schools can effectively implement a new process of change based only on their internal capacities or by employing external private agents ('consultants') who are capable of guiding the school through the improvement process (Raczynski et al., 2013).

The findings in this study, however, suggest that contextual effects have significant impacts on both school classification and school achievement. The family SES context is significant, but more importantly, the SES school composition determines how the policy of market and school competition produces a difficult situation in schools, especially schools with a high enrolment of disadvantaged students. Analysing the operation of the school within its wider social and political environment is necessary in order to embrace an understanding of the influence of context (Murillo & Hernández Rincón, 2002; Televantou et al., 2015; Thrupp, 1995), the absence of which problematises the dominant and standardised view of effectiveness. **Underperforming schools cannot be treated as organisations that can be fixed by following standard procedures or steps.** In fact, the discussion of effectiveness should not only concentrate on the aspects that make schools successful, but also on the

elements that provoke ineffectiveness, including a related discussion of injustice and inequalities.

Considering the ideological and political implications stated by Thrupp et al. (2002), and in light of the impacts of the contextual presence of the SES compositional effect in the Chilean system, the school can hardly be considered an agent of social change; instead, the research canvassed above shows that the school is more suitable linked to structural reproduction (Lucas, 2001; Mizala & Torche, 2012; Torche, 2005). The political implications of including contextual factors make accountability questionable, because it fails to consider the non-malleable school characteristics that nonetheless affect school achievement significantly. The EER has, in this case, a reduced power of explanation because of the fact that school backgrounds and their consequences affect school results more strongly than internal school processes.

7 Chapter Seven: Conclusion

The investigation of the effectiveness of the market-oriented system in Chilean schools produced a number of results, which are treated under three headings: theoretical, methodological and policy. The purpose of this study was to measure the effects of the market-oriented system and also to present a discussion of the importance of context, and the contradictions of policy.

For a significantly long time, the Chilean educational system has extensively applied the voucher system, with the accompanying principles of school competition and parent choice, as key drivers of school effectiveness. After Chilean researchers pointed out the resulting low levels of improvement and equity in schools, and especially in the face of the social discontent exhibited in recent years, the Chilean state then passed one of the most significant adjustments to the voucher system: the SEP law program in 2008.

The SEP program brought two main changes to the voucher system. The first change addressed the problem of flat funding by providing an extra amount for vulnerable students; and the second change introduced the high-stakes accountability system.

Subsequent studies of this reform showed at least two main misspecifications. Most researchers in Chile studied the effect of the market-oriented system from a technical point of view, using mainly quantitative methodologies. The econometric models used, however, were not sensitive enough to capture the influence of context; in fact, context was not a priority at all, and most researchers tried to ‘control’ or remove contextual influence (Luke, 2004; Verger et al., 2016). Another issue is the use of standardised measures as an indicator of effectiveness. Although there are many practicalities associated with standardised measures of effectiveness, there is a notable downgrading of the concept of effectiveness as related only to academic gain (Carney, 2003; Proudford & Baker, 1995; Wrigley, 2013; Wrigley et al., 2012).

To broaden the methodological approach, this thesis therefore incorporated the two missing aspects into the evaluation of market assumptions: the socioeconomic context within the policy environment and the logic of actions and responses of educational agents who have taken part in the policy intervention (Verger et al., 2016). Through these two analytical

lenses, the evaluation allowed the unpacking and questioning of the concatenated assumptions of the market-oriented system. As Verger et al. (2016) stated, the study served as a critical ‘reality’ check, uncovering policy contradictions and dilemmas.

Thus, the possibilities of the policy adjustment were analysed from two perspectives. First, quantitative research measured the level of school SES composition and its effect on equity and effectiveness. Secondly, qualitative research was used to examine the local impact of pressure for improvement through the new external accountability brought by the SEP law, via three detailed case studies, set in context. The local scenarios brought to light those fixed aspects of daily practices in the school that finally conferred meaning to the proposed educational changes. Using both perspectives allowed the research to integrate the evaluation and to consider the inseparable nature of school improvement to both macro and micro processes.

The theoretical, methodological and policy implications are successively pointed out in the following section.

7.1 THEORETICAL

7.1.1 Discussing the SEP program and its accountability reform.

The history of the voucher system in Chile reveals an unequal educational system. Not only was academic achievement stifled by reduced gains, but the level of socioeconomic segregation produced was also significant and impacted both school processes and the idea of school effectiveness.

Intending to make the educational market more efficient, the Chilean educational system implemented an accountability system with high-stakes consequences. In doing so, the Chilean system reinforced neoliberalism in two ways -- by implementing a market system based on school competition and parent choice, and by instituting ultimate control over schools through an accountability system based on national standards and standardised tests. The double pressure coming from the system changed school dynamics and logics. Under this system configuration, schools are compelled to perform, to pursue academic gain and retain

students. According to some authors, this scenario has raised the notion of performative schools (Ball, 2003; Ball & Olmedo, 2013; Falabella, 2014).

Performative schools are under constant pressure to achieve academic gain, albeit with little room to move and innovate. The idea of decentralisation and delegating control to the schools for creating their own Plan of Improvement is constantly negated by the urgency of the required results, and by bureaucratic controls. Although the program was defined as a process of decentralisation and delegation (Weinstein et al., 2010), in practice, it re-regulated schools, leaving them with a lower margin of action and more driven to achieve an academic gain within a limited amount of time (Ball, 2003).

In this way, the state still maintained power to demand (standards) and to audit while making the schools responsible for providing quality. The school has now become the locus of responsibilities, albeit with a limited power for action and carrying the blame for any failure to perform. In effect, schools have more responsibilities with fewer possibilities to manoeuvre.

The introduction of the SEP law certainly helped to repair part of the unequal distribution of funding for disadvantaged students and schools; however, insisting that market logic is a mechanism that will produce school effectiveness is a misconception. The policy contradiction highlighted by this research is that although the SEP program was defined as a mechanism to redress or halt school segregation and inequality, the evidence indicates that the SEP program functioned to enhance the operation of the market rather than the level of equity.

The SEP program is an example of school reform that avoids the discussion of a wider context and concentrates on within-school capacities, delegating to schools the 'power' and the responsibility for achieving effectiveness beyond the influence of contextual impact and current composition.

Using the politics of blame (Thrupp, 1999), the state transferred the responsibility for redressing inequalities to the school, thus avoiding a discussion of the liability of the state for inequalities produced by educational reforms. The state has too easily accepted the argument

of school effectiveness research that constructs school failure without including the effect of the wider social context.

7.1.2 Criticising the EER and its restricted notion of effectiveness.

The Chilean accountability system is a public policy that instead of repairing the inequalities, it served to widen them. Measuring the level of effectiveness through accountability implies a range of grave consequences for schools. The constant test preparation and time constraints might affect the quality of school responses to vulnerable students. The accountability design and the permanent faith in competition damaged the concept of quality by defining it according to the results from a series of standardised measures. Reducing school improvement and effectiveness to specific parameters of proficiency in some subjects generates restrictions on the quality of education delivered to disadvantaged students, who need flexibility, time and care.

Simply examining technically the impact of a series of school reforms results in an uncritical presentation of evidence that biased the discussion in favour of the notion of effectiveness as generated by school conditions that can be fixed. Avoiding the influence of context diverts attention only towards conditions that generate effectiveness and ineffectiveness, and avoids the related consideration of social justice (Carney, 2003; Murillo & Hernández Rincón, 2002; Proudford & Baker, 1995; Scheerens, 2001; Thrupp, 1995, 1999; Thrupp & Lupton, 2006).

As has been pointed out by experienced researchers (Noddings, 2013; Ravitch, 2010), there is no panacea for the problem of school failure and public school damage; and there is no need to resort to complicated neoliberal formulas. School effectiveness in the context of vulnerability means designing a new approach to learning. Teachers must feel responsible for their students' achievement, and should also develop a professional community that allows them to interact and share knowledge based on reflexive practices. A school under pressure cannot assume a democratic approach to initiate a process of improvement. Schools need to develop autonomy and flexibility, and to be able to manage their time, pedagogy and curriculum (Blossing, Nyen, Söderström, & Hagen Tønder, 2015).

7.1.3 The limits to school capacity

From the literature review, perspectives such as EER and school improvement have been criticised for not taking seriously the wider political and social context of school reforms. This explains why the idea of “school can make a difference” has been a strong and persuasive statement that has convinced many researchers and policymakers, creating the pervasive and tremendously popular notion that schools can resolve student problems and that the commitment of principals and teachers can overcome pre-existing inequalities (Thrupp, 1999).

In this research, studying three disadvantaged schools with differential academic achievement contributed to testing this theoretical, and to some point empirical, statement. The qualitative study yielded a detailed understanding of how different school institutional practices and organisation impacted school performance. The most important core characteristic that made a significant difference toward achieving better academic performance was *the extent to which the school assumed responsibility for redressing the socio-economic disadvantages of their students*. This evidence supports the idea of EER that schools with a strong shared commitment and appropriate management can, to some extent, neutralise or mediate the adverse effects of low socioeconomic school composition.

Although this result is promising, the quantitative empirical evidence also revealed that the majority of disadvantaged schools are not able to overcome the effects of poor socioeconomic situations; the SES composition of a school had a negative impact on achievement. Without being deterministic, the realistic evaluation undertaken in this research concedes a close link between school intakes and school results. Keeping this mind, the main result of this study can be summarised as follows: *the contextual environment of a school can exercise a strong influence on educational outcomes*.

The SES composition affected not only the final academic results, but also the organisation of institutional practices in the school. One of the case studies presented in this research (school A) can represent the reality of many schools in Chile that are facing disadvantaged contexts. From this perspective, a high level of inequality persists in the Chilean system; and the discovery that some schools can redress or mediate the effects of this inequality does not

mean that all schools are in a condition to do so. As Wrigley et al. (2012) stated, “schools can make a difference but not all the difference” (p. 3).

Acknowledging the limits of school capacity recognises the role played by the policy environment. Analysing the contextual environment of a school considers the pre-existence of socioeconomic segregation and the decisive influence on how the school functions. However, how a school reacts to policy adjustments cannot be the only focus of analysis to explain success and failure; the policy itself must also be a focus of scrutiny. The recent policy reform that was intended to improve equity through reducing SES segregation and enhancing the educational setting, persisted with the use of a market logic for repairing inequalities and achieving educational improvements. Instead, applying this logic resulted in disadvantaged schools that found it difficult, as an institution, to repair academic inequalities and to function as democratic institutions that promote teacher professionalism and agency.

7.2 METHODOLOGICAL

7.2.1 The mixed method approach contributed to better understanding of school effectiveness

In the study of school effectiveness, the use of Mixed Method (MM) is scarce. The EER approach has been criticised for its poor incorporation of context, and emphasises a quantitative approach. This research applied a novel use of MM, broadening the notion of context, not only as methodological imperative but also as a socio-political argument to analyse the environment that sustains what is understood as effectiveness. Beyond the objective to overcome the dichotomous appreciation of quantitative (QUAN) and qualitative (QUAL), and offer a research alternative to EER, the use of MM in this research had the intention of offering a critical analysis of the practical consequences of market designs for education.

A sequential design allowed to first set the impact of context and then examines how this context interacted with implementation of the new policy, such as accountability. Both analyses contributed to a complete understanding of the policy configuration and its impacts. This approach permitted the disentanglement of the assumptions underlying the market system policy as implemented and reinforced in Chile. Indeed, the MM approach enhanced the study of effectiveness, yielding a more complete and heuristic approach to the study of

school reforms. Analysing the structural and idiosyncratic aspects of policy allowed the development of a critical understanding of the effect of context.

Joining the strength of multilevel methodology to uncover the significance of school as a unit of analysis, to the richness of semi-structured interviews to obtain sensemaking, sought to address the criticisms and limitations of the study of school effectiveness. Considering the school as the unit of analysis allowed recognition of the grouping phenomena present in the Chilean system. Chilean schools contain different student niches characterised by a significant level of homogeneity. That concentration produced a considerable effect on mathematics achievement, constituting a double disadvantage for students from low SES backgrounds.

Deploying semi-structured interviews served to re-conceptualise the meaning of effectiveness. To consider three study cases with a high level of vulnerability allowed me to understand how the concentration of student disadvantage affected school practices and teacher identity. For principals and teachers, acknowledging the background served to organise school practices, and contributed to their sense-making in relation to the new policy of accountability. The sense-making of administrators and educators did not consist of isolated rhetorical arguments; instead, it reflected the type of institutional logic characterised as bureaucratic and democratic (Bridwell-Mitchell, 2013). Indeed, in the absence of this institutional logic and clear assumptions of student context, schools were not able to face their imperative of school responsibility for student achievement.

Both approaches served to initiate further discussion around the study of school effectiveness beyond the local spectrum of school capacities. The use of MM allowed the researcher to comprehend the impact of policy design, uncovering its invisible consequences. Integrating both approaches proved to be fruitful in gaining a better understanding of the impact of context. Employing the MM design to evaluate the effects of disadvantaged educational context is rare, and this research made a valuable contribution to the literature. The use of MM opened up the type of research questions that could be asked regarding the impact of the SEP program. The study included not only quantitative evidence of SES compositional effect on academic achievement, but also a critical approach to those qualitative aspects previously discarded by much of the current Chilean evidence based on EER, such as the negative effect of an accountability system and its association with market policies.

7.3 POLICY

7.3.1 Several policy implications derived from the research

This thesis arrived at the conclusion that the market-oriented system has improved neither the quality nor the equity in education. The SEP program adjusted the funding system and starting to open the spectrum of possibility to choose schools for those vulnerable parents though it has not been able to modify the pre-existing and structural inequalities. The Chilean system has persisted in maintaining and to some extent adjusting the educational system, but without substantially modifying the model. The Chilean policy has interpreted the problem of exclusion and segregation as an imperfection in the policy.

There are three major conclusions that have strong consequences on the Chilean educational policy in:

1. Considering the data from 2012, the SES composition of school is highly present and influential; it affects the level of academic achievement and also impacts the internal organisation of the school. Although the cross-sectional analysis of the 2012 data limits the claims as to direct connections with the SEP program and its impact on academic achievement and educational improvement, SEP has operated in a highly segregated context. The Chilean policy needs to take this context into account.
2. The implementation of high-stakes consequences accountability may negatively affect vulnerable schools and devalue the concept of educational quality. The emphasis on standardised measures of effectiveness as indicators of quality impairs the development of crucial educational factors such as democratic leadership, teacher sense of professionalisation and innovative pedagogic practices.
3. Both the impact of SES composition in the school and the negative consequences of accountability restrict the power of the school to take action that could modify inequalities. In the current situation, the Chilean school cannot perform a social transformation on its own; its function and impact are limited and, in some cases, reduced to implementing mechanisms to achieve academic gain.

Realistically, changing the voucher system as a funding mechanism in Chile does not appear feasible in the near future; however, there are some policy recommendations that could improve implementation. Keeping in mind that this research took the SEP program as an example of policy implementation, the following recommendations are based on a synthesis of qualitative and quantitative findings.

7.3.2 Practical recommendations related to SEP program implementation

Arguably, the SEP program and its accountability system should be applied differently. Both the presence and the effect of SES composition in schools and the differential level of institutionalised organisational practices provoked a re-conceptualisation of the idea of effectiveness. The diagnosis established at the beginning of the SEP program by CEPPE (2010) regarding the organisational deficiencies in school present a decisive area for improvement.

The qualitative findings demonstrate that schools exhibited different forms of school organisation and rationale related to dealing with students from disadvantaged backgrounds. Applying the accountability differently, especially taking into account different indicators of improvement, could accomplish a better and more equitable educational strategy for effectiveness.

Accounting for academic achievement appears to be a reasonable fit for schools displaying a systematic organisation and well-planned teaching practices. Schools already classified as autonomous are apartment candidates for academic accountability.

In schools with erratic or conflicted organisational practices and an incipient level of academic improvement, accountability should be concentrated on school processes rather than on academic gain. Based on the evidence in this research, the negative effect of the pressure for academic gain, combined with a weak culture of improvement, provoked schools to follow a spurious and restricted form of effectiveness. The relevance of school processes should be a central part of school improvement in schools classified as in recovery, and perhaps in most schools classified as emerging.

In this way, accountability would measure the sustainability of school improvement, rather than a spurious indication of effectiveness. The excessive emphasis of SIMCE in the public policy overlooks the importance of school processes. The accountability system currently applied in Chile omits the qualitative aspects of effectiveness, restricting the scope of what counts as important in the operations of the school. Factors such as pedagogic leadership, democratic organisation, systematic and committed teacher practices and teacher professionalism emerged as vital to school effectiveness.

Another revelation that emerged from the case studies and the literature review was that the logic of funding based on student enrolment appears to be regressive for small schools. Small schools with a high enrolment of disadvantaged students received less funding, which affected their operation. Although the SEP program provided increased funding for vulnerable students, highly vulnerable schools with small enrolment numbers still receive fewer funds. The case of school B in this research exemplified this type of contradiction in the SEP program.

Severe socioeconomic segregation in schools has no easy solution. The effects of policies such as the SEP program, intended to adjust the funding system and thereby encourage the enrolment of disadvantaged students in more selective and higher socioeconomic schools, start operating but with concerning consequences for public schools. Educational reforms or simple policy actions in Chile and elsewhere have had limited results (J. Valenzuela et al., 2013). Socioeconomic segregation is a complex phenomenon beyond the reach of specific funding mechanisms, and must also include cultural behaviour from parents and institutional practices.

At least at the institutional level, the new Inclusion Law appears promising toward eliminating the structural incentives for student selection by the schools. Banning arbitrary selection and profit in schools can be a policy step in the right direction. However, although the Inclusion Law enacted in 2015 and implemented progressively until 2019 can be considered an advancement in regulating the parent's right to choose, it still operates under the logic of a voucher system. The voucher system demands competition and forces the educational system to provide standardised measures of quality that have become another way of excluding students, and another mechanism of academic and socioeconomic segregation.

7.4 Limitations of the research

Although the thesis applied a robust methodological approach, there are nonetheless some limitations that must be acknowledged. Applying a mixed method design to the study of market-oriented systems has been recommended by several researchers (Falabella, 2014; Harker & Tymms, 2004; Reynolds et al., 2014; Sammons, 2010; Verger et al., 2016), and this thesis provided a good example of that research. However, both quantitative and qualitative approaches exhibited some boundaries that need to be discussed separately.

7.4.1 Quantitative approach

There are some limitations that need to be taken into consideration with regard to the quantitative study. One of the first methodological points to consider is the use of a standardised measure of school effectiveness. Although EER has been criticised for its frequent use of standardised measures as synonymous with school effectiveness, the availability of data at the national level is restricted. A point for the present research is that the notion of effectiveness was also discussed in the qualitative study.

Another limitation of the current specification of school relevance, also a feature in most research in the area, is that the evaluations were made utilising only two levels of analysis. This model specification certainly has not been found to be free of bias and misrepresentation. Some researchers have stated that ignoring a level in multilevel analysis, especially the immediate lower (classroom) and upper (local authority) levels, implies the risk of overestimating the ‘school effect’ (Van den Noortgate et al., 2005). Although there is not much evidence that considered the primary school level, existing research applied in Chile underlined the importance of the classroom and municipal levels (Muñoz-Chereau & Thomas, 2016; Treviño et al., 2014; Troncoso et al., 2015).

A final limitation on my quantitative results is the possible overestimation of school’ SES coefficient. The no introduction of a contextual variable as territorial segregation could bias the interpretation of its significance. Territorial segregation has been placed as important variable in the Chilean context that affects school segregation. However, the impacts of educational market-based variables, such as, type of schools and school selection practices, on school segregation are greater predictors than residential segregation (Elacqua Santos,

2013; Valenzuela, Bellei and de los Rios, 2013). As Chilean researchers have stated, the explanation of school segregation go beyond territorial segregation, and the type of educational system has played a significant impact on school segregation of today.

7.4.2 Qualitative approach

The logic of this design means that it is not possible to generalise from qualitative research findings. Although 25 semi-structured interviews provided rich information, some categories still require more research. The concepts of teacher identities and school institutional logics were established; however, they still need to be contrasted with different school cases to develop a more robust explanation.

Another limitation that emerged was the setting of the school. The data was collected in Chile over a fixed time period that could not be extended because of economic and time constraints. Studying three schools in disadvantaged contexts was an important means of visualising and then analysing the policy contradictions and school dilemmas in order to expand the agenda related to school effectiveness research; however, to fully understand the effect of school composition, schools with higher socioeconomic backgrounds may need to be included in the studies as well.

7.5 Research contributions and recommendation for future research

This research contributes to the knowledge in the field of Educational Effectiveness Research (EER) and sociology of education. For EER, the extensive use of context helped to extend our understanding of the contribution of internal school characteristics to school effectiveness. In a time of accountability, and in a situation where the school is embedded in a highly unequal socioeconomic context, incorporating the effect of contextual variables contributes to making a fairer evaluation of school capacities and responsibilities for student achievement.

Relevant to the data from the sociology of education, this research provided further empirical evidence of the negative consequences associated with applying a market-oriented system to the educational process. Also valuable to this theoretical framework, this research is

embedded in a highly paradigmatic neoliberal context that exhibited unique features that are not easily found for theory testing. The experiences from more than 35 years of applying a universal voucher system were a significant element that provided the researcher with the prospect of a reality check on the operation of market systems in education.

The findings raise interesting questions for future research. As was suggested by some Chilean authors (Elacqua et al., 2011; García Palomer & Paredes, 2010) and even from the qualitative findings (for instance, school B), the size of a school could be an interesting line for future research. The small and mid-size schools seem best suited to lead in responding to vulnerable students and countering the adverse consequences of compositional effects. In view of the findings related to one of the school cases in this research, a small school size may promote teacher professionalism and democratic governance. As public schools are constantly losing student enrolment, perhaps they could develop into specialised schools for caring and repairing student disadvantages.

Owing to the significant effect of school composition on student achievement, an interesting further investigation could establish the relationship between compositional effect and school processes. Especially for public policy analysis, determining which school processes are more affected by school composition could provide useful information for policymakers to prioritise a specific course of action in school training and interventions. Because the relationship between school composition and school processes is complex and interdependent, quantitative and qualitative research may both be necessary.

The qualitative findings in this research indicate several aspects that could be expanded and tested in a larger scale study. For example, the negative consequences related to teachers and their practices could be part of a new investigation. At the moment the Chilean research has presented partial evidence of this phenomenon. A questionnaire design could be applied to appreciate the impact of accountability in different school settings.

Another element requiring further investigation that emerged from the qualitative research, and was also pointed out by Wrigley (2003) is the concept of democratic school governance associated with the accountability system. As presented in the qualitative study, the school with a strict management style was perfectly suited for the logic of accountability. These results suggest that the process of accountability encourages the participation of schools with

an authoritarian view of management and teaching practices. This hypothesis would be worth analysing empirically.

The study concludes that the socioeconomic composition of a school has a stronger impact on the students than their family socioeconomic composition, constituting a double disadvantage for vulnerable students. Disadvantaged students attending disadvantaged schools are doubly affected by the socioeconomic segregation. The contextual variables that affect school effectiveness results in unfair and misleading school comparisons. Public schools appeared to perform better than private schools when contextual variables were taken into account. The public policy of school classification, however, does not include multilevel analysis and the type of contextual variables incorporated in this research.

Another important conclusion of this study is that the accountability policy erodes teacher professionalisation and encourages an authoritarian type of leadership. The tendency to emphasise specific subjects and evaluate student learning by the results of standardised tests affects the pedagogical practices of teachers, alienating them and transforming their work into a series of routine actions for test preparation. Moreover, the urgency of obtaining good test results encourages schools to focus their practices on the tests, and not on the process of learning. A successful approach to school effectiveness within the accountability system seems to be related to highly organised schools with a top-down type of leadership. Disadvantaged schools with a high sense of teacher professionalism and with democratic and flexible school organisations seem to be in opposition to the accountability policy.

These findings have significant implications for the operation of a market-oriented system of education. The Chilean system still suffers from an unequal distribution of academic achievement, and the new policy of accountability that emphasises school capacity does not take into consideration the contextual factors that affect school operations and the real capacity of the school to be accountable. The school effectiveness research agenda needs to integrate a wider concept of context, and to evaluate the assumptions underlying the policy by using an empirical reality check approach to disentangle the complex interactions of the macro and micro effects of policy.

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APPENDIX A: Mplus Annotations

7.6 NULL MODEL

TITLE: null model

Data:

file= GENERAL DATABASEB.dat;

variable:

names= Sch_ID Cla_ID St_ID Public P_subs P_fee Rural
Select2 Religi2 Sel_SES2 Ability2 St_gend Language
Math book Fath_edu Math_edu F_income St_SES PreSch
St_repet T_stud1 T_stud2 T_stud3 T_stud4 T_upgr
T_Experi PCA_Sub PCA_Ped PCA_Pri PCA_Dir T_post;

cluster= Sch_ID;

missing= all(-99);

usevariables=Math;

analysis: type= twolevel;

output: sampstat;

7.7 MODEL 1

TITLE: SES contextual model

Data:

file=GENERAL DATABASEB.dat;

define:

center St_SES (grandmean);

SchSES=cluster_mean (St_SES);

variable:

names= Sch_ID Cla_ID St_ID Public P_subs P_fee Rural
Select2 Religi2 Sel_SES2 Ability2 St_gend Language
Math book Fath_edu Math_edu F_income St_SES PreSch
St_repet T_stud1 T_stud2 T_stud3 T_stud4 T_upgr
T_Experi PCA_Sub PCA_Ped PCA_Pri PCA_Dir T_post;

cluster= Sch_ID;

missing= all(-99);

usevariables= Math St_SES SchSES;

within= St_SES;

between= SchSES;

analysis:

type= twolevel;

```

model:
% within%
Math on St_SES;

% between%
math on SchSES;

output: sampstat stdyx;

```

7.8 MODEL 2

TITLE: model 2

Data:
file=GENERAL DATABASEB.dat;

define:
center St_SES (grandmean);
SchSES=cluster_mean (St_SES);

variable:
names= Sch_ID Cla_ID St_ID Public P_subs P_fee Rural
Select2 Religi2 Sel_SES2 Ability2 St_gend Language
Math book Fath_edu Math_edu F_income St_SES PreSch
St_repet T_stud1 T_stud2 T_stud3 T_stud4 T_upgr
T_Experi PCA_Sub PCA_Ped PCA_Pri PCA_Dir T_post;

cluster= Sch_ID;
missing= all(-99);
usevariables= Math St_SES P_subs P_fee SchSES;
within= St_SES;
between= SchSES P_subs P_fee;

analysis:
type= twolevel;

```

model:
% within%
Math on St_SES ;

```

```

% between%
math on SchSES P_subs P_fee;

```

output: sampstat stdyx;

7.9 MODEL 3

TITLE: SES composition and within

Data:

file=GENERAL DATABASEB.dat;

define:

center St_SES St_repet St_gend book (grandmean);
SchSES=cluster_mean (St_SES);

variable:

names= Sch_ID Cla_ID St_ID Public P_subs P_fee Rural
Select2 Religi2 Sel_SES2 Ability2 St_gend Language
Math book Fath_edu Math_edu F_income St_SES PreSch
St_repet T_stud1 T_stud2 T_stud3 T_stud4 T_upgr
T_Experi PCA_Sub PCA_Ped PCA_Pri PCA_Dir T_post;

cluster= Sch_ID;

missing= all(-99);

usevariables= Math St_SES St_repet St_gend book
P_subs P_fee SchSES;

within= St_SES St_repet St_gend book;

between= SchSES P_subs P_fee;

analysis:

type= twolevel;

model:

% within%

Math on St_SES St_repet St_gend book;

% between%

math on SchSES P_subs P_fee;

output: sampstat stdyx;

7.10 MODEL 4

TITLE: Model 4 with random slope final

Data:

file=GENERAL DATABASEB.dat;

define:

schSES= cluster_mean (St_SES);

center St_SES (groupmean);

center St_gend book St_repet(grandmean);

BintSES=schSES*P_subs;

BintSES2=schSES*P_fee;

variable:

```
names= Sch_ID Cla_ID St_ID Public P_subs P_fee Rural
Select2 Religi2 Sel_SES2 Ability2 St_gend Language
Math book Fath_edu Math_edu F_income St_SES PreSch
St_repet T_stud1 T_stud2 T_stud3 T_stud4 T_upgr
T_Experi PCA_Sub PCA_Ped PCA_Pri PCA_Dir T_post;
```

usevariables= Math! SIMCE score in Math

St_gend! 1 for male

book! 1 if the student has more than 50 books at home

St_repet! 1 if student has repeated one grade or more

St_SES! socioeconomic index of student

Ability2

Religi2

P_subs! 1 for subsidized school

P_fee! 1 for private_fee school (public is the reference)

schSES! aggregated School SES

BintSES BintSES2;

missing= all (-99);

cluster= Sch_ID;

within= St_SES St_gend book St_repet;

between= schSES P_subs P_fee Ability2

Religi2 BintSES BintSES2;

analysis:

processors=2;

type= twolevel random;

estimator=ml;

model:

% within%

RS | Math on St_SES;

Math on St_gend book St_repet;

% between%

[RS] (WPublic); ! Within effect of SES on math achievement for Public schools

RS on P_subs (sub); ! Difference in within effect for public versus Sub schools (cross-level interaction)

RS on P_fee (fee); ! Difference in within effect for public versus Fee school (cross-level interaction)

RS with math;

Math on schSES (b); ! Between-school effect of SES on math achievement

Math on Ability2

Religi2 P_subs P_fee;

math on BintSES BintSES2;

model constraint:

new (WFee WSub contPub contSub contFee);

WFee=WPublic+fee; ! Within effect of SES on math achievement for Fee schools
WSub=WPublic+sub; ! Within effect of SES on math achievement for Sub schools
contPub = b-WPublic; ! Contextual effect for Public schools
contSub = b-WSub; ! Contextual effect for Sub schools
contFee = b-WFee; ! Contextual effect for Fee schools

APPENDIX B: Semi-Structure interview protocol

ENTREVISTA DIRECTOR/DOCENTE

Escuela C

Docente: _____ e-mail: _____

Fecha: _____ Hora inicio: _____ hora termino: _____

(I). Dentro de la literatura sobre la efectividad escolar y la mejora, hay una serie de características que hacen escuelas eficaces: En esta primera parte de la entrevista te quiero preguntar aspectos relacionados sobre la docencia.

a). cómo describiría los tipos de estudiantes que esta escuela atiende/recibe.

- Capital cultural (GSE: Medio Bajo)
- el nivel de vulnerabilidad ha ido en aumento (82%-86%-84%-82%) A qué se debe esto?
- podrías definir que esta escuela atiende a estudiantes pobres y que esta tendencia se va radicalizando...cada vez más concentración de alumnos pobres?

- la matricula ha ido subiendo levemente (2009: 365; 331; 409; 418)...cuales son las razones? Por un tema de resultados? El número de alumnos prioritarios ha aumentado, esto ha sido deliberado? Se especializan con trabajar con alumnos de este tipo?

Esto es producto de la competencia entre las escuelas? O por que los padres deciden cambiar de colegio?

Aptitudes del alumnado:

- como evalúas las Aptitudes de los alumnos para el estudio?

	4to	6to	8vo
Autoestima académica y motivación escolar	(.) 74	(.) 73	(.) 74
Convivencia escolar	(↑) 81	(↑)80	(↑) 86

- Por qué estos niveles?
- Convivencia escolar:

“Desde el año 2009 al 2012 se ha visto una disminución en los casos de violencia escolar, donde en un principio en promedio las denuncias por agresiones y violencia escolar marcaban 80%, ahora están alrededor del 20%”.

Cómo definiría la cultura escolar de la escuela?

- Involucramiento de los padres?

b). En términos del ejercicio docente, como se desarrolla la

-Gestión del tiempo
- Monitorear el progreso
- Evaluación docente: NO HAY EVALUACION A TRAVES DEL MINISTERIO.

Cómo evalúa el rendimiento de los docentes?

(2). Cuáles son los tipos de programas que en la escuela existe?

- SEP: planes de desarrollo: metas propuestas: las metas fueron consensuadas o impuestas?
- **Como se logró subir de categoría..?**

- Cuales han sido los más importantes programas ejecutados desde la SEP?
- La SEP ha contribuido a mejorar la gestión, la organización e impacto de la escuela en los resultados académicos de los estudiantes?
- Según su percepción, los docentes y todos los que trabajan en la escuela, creen en que la SEP es una forma de legitimar las escuelas y sus capacidades? O la SEP es una forma “camuflada” de descentralización escolar?
- La SEP está ayudando a de-segregar la educación en CHILE?
- La paradoja del alumno prioritario: como aumento de recursos/perdida de matrícula (reputación). Qué opinas al respecto?

2008	2012	2014
Emergente (157 alumnos prioritarios)	Autónoma (334 alumnos prioritarios)	Autónoma (401 alumnos prioritarios)

- SNED: tiene que ver con la excelencia académica...refleja la excelencia en la escuela?

2010-2011	2012-2013	2014-2015
3=si (35%)	1= SI	1=SI

(4). En el contexto de la política escolar.

SIMCE:

4to básico	2012	2013	2014
Matemática	265	279	264 (+21)
Lenguaje	282	285	282(+31)
8vo básico	2011	2013	2014
Matemática	281	272	271 (+45)
Lenguaje	278	277	278(+54)

**** desde el 2009 se observa un alza en los puntajes!!**

“...pero en el año 2010 se produce un importante repunte, que permitió subir en promedio 45 puntos como colegio, además un logro muy importante en lenguaje fue tener 0% de alumnos en lectura inicial y 64% en nivel avanzado.”(PEI)

Que tanto reflejan estos indicadores de ‘calidad’ educativa?

- **Como se explican estos resultados en un contexto de mejora (con SEP)?**
- **Como se logra que una escuela de alta vulnerabilidad tenga buenos resultados?**
- Estos resultados no se distribuyen de igual manera entre los estudiantes? Ni dentro de asignaturas?

	Matemática (2014)	Lenguaje (2014)
Adecuado	14.8%	51.6%
Elemental	57.4%	29%
Insuficiente	27.9%	19.4%

- **Que pasa con ese % de estudiantes que no logran desarrollar conocimientos mínimos?**
- El SIMCE ha sido rector de los procesos internos de la escuela? Que tanto pesa el SIMCE?

En la organización escolar:

- **Como se organiza una escuela con estudiantes de alta vulnerabilidad?**
- **Cómo definirías el tipo de liderazgo necesario para dirigir una escuela con alta vulnerabilidad? Democrático, tecnocrático o autoritario? “Director con foco en lo pedagógico” (PEI)**
- **En un ejercicio de auto-diagnostico, Como cree usted que lo docente evalúan su gestión?**

- **Existe una cultura de test al interior de la escuela?** (racionalidad instrumental) si es Si, por que no funciona en términos de puntaje? Si es No, Por qué no se han sumado?

Seguimiento del currículum (PEI)

Se lleva a cabo de la siguiente manera:

- 1.- Revisión quincenal de planificaciones
- 2.- Triangulación por semestre de: Bases curriculares, planificación y cuaderno del estudiante.
- 3.- Evaluaciones de nivel por semestre en las asignaturas de: lenguaje, matemáticas, ciencias naturales e historia y geografía.
- 4.- Evaluaciones mensuales en cada asignatura

- **El hecho de responder a la serie de metas, supervisiones y requerimientos legales frente al Ministerio (accountability) ha afectado la organización y las relaciones entre docentes?**
- **Definirías a las instituciones bajo el sistema de rendición de cuentas como instituciones esquizofrénicas?**
- **Ustedes tienen dos cursos por nivel: Hay competencia entre cursos del mismo nivel? (PEI)**

Sobre los docentes:

- Como se ha dado el desarrollo profesional en contexto de responder a los resultados SIMCE?
- **Los docentes muchas veces piensan que ellos son evaluados a través de los resultados de los estudiantes en el SIMCE?**
- **Existe una distribución de los docentes en término de sus capacidades para el SIMCE, los profes bueno para el SIMCE? Como los describirías?**
- Enfocados en ciertas asignaturas? Ha habido una reducción de lo que es “importante”? reducción del currículum?
- **En tu opinión, hay una suerte de presión constante por la productividad? Hay un conflicto de identidad (‘teacher soul’)? Docente como formador o docente como ejecutor? Existe tensión? Un nuevo tipo de docente.**
- **Se ha implantado una lógica de competencia entre los docentes?** Hay menos emotividad en el aula?

“Que los docentes reciban capacitación constante en prácticas pedagógicas con el fin de superar la barrera de los bajos porcentajes en los niveles avanzados de lectura, matemáticas, historia y ciencias naturales.(PEI)”

Mecanismos de resistencia:

- Dentro de la literatura se ha mencionado que muchas veces los docentes como las instituciones no creen que todo el sistema de control y fiscalización redunde en un real impacto en los aprendizajes de los alumnos. Por ello, los docentes como las instituciones responden a esas presiones (la esquizofrenia institucional) de forma solapada, elástica...la idea de pasar la fiscalización (Fabricación), de responder, pero sin necesariamente hacer lo que se pide?
- Se aplica esta idea dentro de tu organización o profesorado?

Efecto de composición:

“no solo es el efecto de las características individuales de los estudiantes lo que afecta su resultado académico, sino que la agregación de las características dentro de una escuela afecta por sobre los niveles individuales”.

Si controlo por importantes variables individuales (rendimiento previo, capital cultural y género) el nivel socioeconómico del estudiante afecta alrededor de 7 puntos en el SIMCE de matemática”.

Después si controlo, por todas estas variables individuales (incluyendo SES), mas importantes variables de la escuela (sector y selección), la agregada SES característica de la escuela impacta 8 puntos más, por sobre el nivel individual del SES.

- **Que tanto podría explicar la composición de los alumnos los resultados de la escuela?**
- **Que piensas de la idea de que si descartamos el efecto de la composición de los estudiantes, esta escuela podría ser definida como (no) eficaz?**
- **Si la escuela pudiera seleccionar a los estudiantes, sería una escuela con mejores resultados? Si es SI, entonces los resultados de la escuela dependen de los tipo de alumnos que tiene?**
- **Que el principal elemento de los malos resultados de la escuela es debido a su proceso de NO selección de alumnos? O es debido a algo más?**
- **Por qué escuelas con alumnos de más alto nivel socioeconómico muestran más alto nivel de rendimiento?**
- **En general, las escuelas municipales son más efectivas para educar alumnos vulnerables?**
- **La escuela está más enfocada en el rendimiento (achievement) o más en el aprendizaje (gain/value add)**

Conclusión.

- **Como resumen, como explicarías el rendimiento que actualmente exhibe esta escuela?**

APPENDIX C: Ethics Protocol

7.11 Participation Information Statement

CONSENTIMIENTO INFORMADO DIRECTOR (A)

Sr(a) Director:

En el contexto de su tesis Doctoral, en la Universidad de Sidney, Australia, el docente Jorge Rojas Bravo de la Universidad de Concepción está realizando un estudio sobre la eficacia escolar que tiene por objetivo comprender los procesos educativos internos en las escuelas que favorecen el aprendizaje de los estudiantes, especialmente cuando estos provienen de contextos de vulnerabilidad social.

Por ello solicitamos a Ud. Su consentimiento para participar en este estudio, lo que implica su disponibilidad para responder a una entrevistas relativas a su experiencia como director y su trabajo en la organización escolar y sus impactos en el proceso de la eficacia escolar. El sostenedor ha sido consultado y ha consentido explícitamente la participación de esta escuela en el estudio.

Los resultados del estudio vienen a contribuir en el conocimiento y entendimiento de las complejas acciones y actitudes de los directores y su trabajo con los docentes, en el proceso de hacer escuelas eficaces.

Toda la información obtenida en esta investigación será de uso exclusivo de la investigación, bajo la responsabilidad del investigador responsable, quien guardara toda la información. Toda la publicación de los datos solo será a nivel de grupo ('los directivos') sin identificar las personas ni escuelas en particular.

De Ud. Aceptar, rogamos firmar este documento que detalla las condiciones de su participación.

Investigador responsable:

Jorge Rojas Bravo

Académico de la escuela de Educación de la Universidad de Concepción.

7.12 Interview Consent Form

ACTA DE CONSENTIMIENTO DIRECTOR (A)

Acepto participar en el estudio descrito, entendiendo que este cumple las características que han sido reseñadas y sobre la base de las siguientes condiciones adicionales:

Cualquier pregunta que yo quisiera hacer con relación a mi participación en este estudio será contestado por Jorge Rojas Bravo, Rut 13.311.967-1, teléfono 88975751 o e-mail jorgemanrojas@udec.cl.

Para cualquier duda, queja o inquietud que no me haya sido satisfactoriamente resuelta por el investigador responsable me podre dirigir a José Becerra, Presidente del Comité de Ética de la Universidad de Concepción. Teléfono: (41) 2207455.

Podre retirarme de este estudio en cualquier momento sin ser obligada (o) a dar razones algunas.

Los resultados de este estudio pueden ser publicados, pero mi identidad no será revelada y estos datos personales permanecerán en forma confidencial.

Mi consentimiento esta dado voluntariamente sin que haya sido forzada (o) u obligada (o). Se firman dos copias de este documento, una de las cuales quedara en poder de cada participante y otra en mano del investigador responsable.

Por favor, complete la información que se solicita a continuación:

Yo, _____(nombre)

De la escuela _____(nombre),

comprendo la información que se entregó anteriormente, conozco los objetivos del estudio y he podido hacer preguntas sobre el mismo.

En atención a estas consideraciones, libremente (marque la que corresponda)

YO ACEPTO PARTICIPAR EN ESTE ESTUDIO _____

YO NO ACEPTO PARTICIPAR EN ESTE ESTUDIO _____

FIRMA

Usted debe quedar con una copia de este formulario