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LIVING-TOGETHER AT SCHOOL:

DIMENSIONS AND PROCESSES IN HIGH SCHOOL STUDENTS

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un grazie speciale per essere stati la mia “base sicura”
ed un esempio di semplicità, coraggio ed amorevole bontà ...*

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CHAPTER I

GENERAL INTRODUCTION

Introduction

The interest in investigate relationships among individuals that live together in various contexts and its influence in peoples' quality of life has been increased in literature since 1980s (Barnett & Hyde, 2001; Bergeman, Plomin, Pedersen, & McClearn, 1991; Bronfenbrenner, 1979; Feinberg & Kan, 2008).

In educational and scholastic psychological fields, for example, there is no doubt that relationships with peers and teachers play a pivotal role in individual develop and functioning in many sphere of young's life (e.g., Syvertsen, Flanagan, & Stout, 2009). In the last years, in studies concerning relationships among individuals in various life's contexts, Avallone has developed a particular interest in examined the role that relationships have in determining people's well-being, introducing the construct of "living-together" and, in a study of 2007, have investigated the various aspect that characterize live-together in social, organizational and affective contexts (Avallone, Farnese, Pepe & Paplomatas, 2007). In particular, in this study Avallone and colleagues have individuated ten areas rewarding the "living-together" common at contexts analyzed and that referred to respect of rules and norms, sense of confidence in persons, tolerance and acceptance of diversity, collaboration and cooperation, equity, support and solidarity, a sense of protection and secure environment, care for others and effective communication, power, investment of energy and involvement in the relationship.

General purpose of present dissertation was to investigate how the construct of live-together translate in scholastic social organization and in particular in class. Specifically, the first aims was to examine the psychometric characteristics of the construct of "living-together" in classroom, then to identify different profiles of high students' *stiles of living-together in the classroom*, finally to investigate if and how individual and contextual dimensions of "living-together" in classroom could influence the students' satisfaction at school. In this introductory

Chapter the definition of “living-together” will be addressed and clarified. Furthermore, the theoretical framework and an outline of the remaining Chapters will be presented.

“Living-Together”: Definition and Theoretical Framework

In this contribution we consider “living-together” in classroom, with the aims of identified in the classroom the ten dimensions defined previously by Avallone et al. (2007) and individuated in social, affective and organizational contexts and how this dimensions are associated with students’ satisfaction.

Avallone and colleagues (2007), have described “living-together” as the process that allows individuals, organizations and communities to manage significant and stable relationships, placed in a physical and symbolic space with other people, groups and social systems. As mentioned above, the authors studied the live-together in three contexts (affective, social and organizational) in which people spend much of their time e relate each other. In affective context concerned relationships that take place within the original family (among parents and children, among siblings, or relativenes for extended families) and the couple's relationships within or outside marriage. In social context the relationships related to the way in which were conceived relationships in civil society and relationships (both direct and symbolic) with people that are different by language, race, religion and values. Finally, in organizational context, the concerned relations in work places, for example among colleagues, among leaders, among leaders and employees.

The concern about the quality and nature of “living-together” probably has been stimulated by pivotal role that relationships have in determining satisfaction, well-being and outcomes in the individual life and by the need to develop rules and skills to generate specific modes of interaction within a specific context and relational systems (Avallone et al., 2007). However, in literature contributions on the topic of “living-together”, there were not relative to

construct well-defined but to neighbourhood issues and constructs specific for each area investigated (Bennett, Cook, Pelletier, 2003; Bumpass & Sweet, 2001; Collier, 2003; Gozzoli & Cigoli, 2002; Gozzoli & Regalia, 2005, 2006; Setton, Bennett, & Linden, 1996). Mostly for this reason, Avallone and colleagues (2007) have set out to investigate the existence of fundamental areas of “living-together” in three contexts investigated. Starting from the definitions that people who were interviewed in these three contexts have given of affective, social and organizational living-together, the authors have been identified the above ten areas, then adopted as generative criteria of instruments that in different settings have investigated this topic.

In regard the school organization and in specific the classroom context, these areas were included in a questionnaire developed during a research for the Italian Ministry of Education and “Sapienza” University of Rome coordinated by Avallone (2007) for measuring scholastic “living-together”. In classroom context the areas of “living-together” referred to different behaviors and characteristics of students and teachers: students’ loyalty, support, negotiation, cooperation, cohesion, assertiveness, rules respectful and power orientation and teachers’ behavioral of equity and support, that define the relationships that they establish with each other and that influence the student’s perception of what happens in classroom. These ten areas correspond to those identified by Avallone and colleagues (2007) in social, affective and organisational contexts.

In this dissertation, our interest to investigate “living-together” at school followed the evidence that classes are the settings where children and adolescents spend most of their time and go through various experiences that serves to basis for their development and that the quality of classroom life is most important in shaping student “feelings and attitudes towards their classmates, teachers and subjects that they study and the whole educational system” (Zedan, 2010, p.75).

Even in the case of the school and classroom contributions concerning “living-together” are not related to construct specifically defined. The construct closer to that of living-together widely studied in the literature is the construct of classroom climate, that is present in the literature since 1970s and that has been studied for decades (see Fraser, 1989; Schmuck & Schmuck, 1978). Although the definitions of the construct vary and there is no total consensus on a set of dimensions (Sink & Spencer, 2005), generally, classroom climate are described as the classroom social atmosphere (Johnson & McClure, 2004) or the social-psychological environment for learning (Fraser, 1994).

For the our concern the classroom climate definitions of Schmuck and Schmuck (1978), provides a meaningful framework of classroom climate, because they defined it as the set of all group’s processes that take place during teacher-student and student-student interactions. This set includes dimensions as interpersonal relationships, teaching style, teacher expectations, classroom organization, level of teacher control, disciplinary problems (Schmuck, & Schmuck, 1978) and social and emotional support among students and teachers (Stornes, Bru, & Idsoe, 2008) and among students (e.g., Baker, 1998), teacher equity (Syvertsen et al. 2009), and cohesion and collaboration among students (Ryan & Patrick, 2001).

Studies in this area have showed associations between classroom climate and many students characteristics and outcomes as goal orientation (e.g., Church, Elliot, & Gabel, 2001), student motivation (Anderson, Hamilton, & Hattie, 2004), student engagement in class activity (e.g., Douglas Willms, 2003), social skill and competence (Baker, 1998), self-image and attitudes towards a certain discipline, scholastic achievement, levels of knowledge (Fraser & Tobin, 1991), engagement and participation (Anderson et al., 2004).

Researchers have measured classroom climate and its dimensions using various methods. One of the most commonly used and considered adequate is students’ perceptions and interpretations of their learning context, because these are based on knowledge of the

participants themselves and are the results of a shorter or longer period of exposure to a specific environment (see Fraser, 1989).

The areas of living together in classroom refer to students' perceptions of themselves and classmates relate to each other and with teachers. The critical function played by teachers in quality of students' school life (e.g., Midgley, Feldlaufer, & Eccles, 1989) and in students' school satisfaction (Danielsen, Samdal, Hetland, & Wold, 2009; DeSantis King, Huebner, Suldo, & Valois 2006) has been an important topic of educational research over the past decades. Today, there is no doubt that students' perceptions of the nature and quality of their relationships with teachers predict their confidence about learning and academic achievement (Dorman, 2001) and that teachers' evaluative and supportive feedback influences the students' perceptions of their competence which in turn, predicts motivation, performance, satisfaction and well-being (Bandura, 1997; Bong & Skaalvik, 2003; Eccles & Wigfield, 2002).

Many studies showed that among the different aspects of teachers' work, social support has a strong influence on students' school satisfaction (DeSantis King et al., 2006; Huebner & McCullough, 2000). Moreover teachers' engagement to promote affective disciplinary climates, encourages students to share their thoughts and to perceive fairness and equity (Syvertsen et al., 2009). The perception of fairness (i.e., fair school climate) is related to a positive classroom context, sense of community and academic performance and is a strong mediator between belief in a just world, school grades and well-being and can reduce negative feelings (Dalbert & Maes, 2002). A classroom in which students feel respected, see the fairness and clarity of rules, and participate in the planning and implementation of rules, is a place in which they experience a sense of connectedness and a generally positive quality of life (Hernández & Seem, 2004).

As well as teachers, also classmates have a critical role in adolescents' well-being. In fact, positive interactions with them and perceptions of their social and emotional support influence students' emotional, cognitive and health development. Moreover, when young

people have friends who can provide support and protection, this reduces the risk of youth being victimized and in this way they are more likely to receive prosocial acts from peers (Bukowski & Sippola, 2001; Schwartz, 1999). Peer support and high levels of social bonding to prosocial groups and activities (attachment to school, commitment to educational pursuits, and belief in the fairness of school rules) protect adolescents from many problems caused by acts of unfairness or iniquity (Abbott, O'Donnell, Hawkins, Hill, Kosterman, & Catalano, 1998), promote cooperation, sincerity and honesty (Costa & McCrae, 1985), and can influence students' satisfaction of their class, school and global life (Danielsen et al., 2009).

The studies of present dissertation: Participants, Procedures and Instruments

Participants were part of mentioned national project organized by the Italian Ministry of Education and "Sapienza" University of Rome. This project aimed to investigate "living-together" in classroom, at school and in society, in order to explore the behavioural trends and patterns of elementary, middle school and secondary school students in Italy.

The research involved 10,231 students, 3,086 (30.2%) of them attending 5th grade of Italian primary school, 5,051 (29.8%) attending 3rd of middle Italian school, 4,094 (40%) attending 2nd and 5th grade of Italian secondary school. The average age of the pupils of the 5th grade is 10 years (SD = .4), the average age of the pupils of the 3rd grade is 13 years (SD = .45), the average age of secondary students was 15 years (SD = .7) at 2nd grade and 18 years (SD = .8) at 5th grade, that refer to 10th and 12th grades of USA high school (5th grade of secondary school in Italy and 12th grades of high school in USA are both the last years of high school in the two countries). Henceforth, in our studies, we will use these labels that refer to USA high school's grades.

For our studies we considered only the sample of secondary school students. Approximately 300 high schools with a total 224 classes and 4,094 students attending both 10th

and 12th grade participated in the studies. Of these, 1,917 (47%) attended 10th grade (52% female) of high school and 1,790 (44%) attended 12th grade (56% female) of high school. The students came from all regions of Italy. Twenty-eight percent of students lived in north-eastern regions, 23% in the north-west, 18% in central Italy, 18% in the south, and 12% lived on the islands of Sicily and Sardinia. The family profiles matched the national profile with regard to the families' socio-economic characteristics. Most young people were from intact families (79%), had Italian parents (89%) and had almost one parent with a high school education (43%).

A stringent consent procedure for the study was followed, including parental consent, approval from school councils and the freedom of the students to reject participation if they chose to do so. All students were assured of the confidentiality of their responses and that the participation was voluntary. The school that had confirmed their participation to the research received questionnaire in an on-line forum. In schools with computer labs, the whole class group were accompanied by teachers and compiled directly questionnaire return it to the site indicated. In schools where this was not possible, the questionnaires were printed, fill in the facts from the each class group working in the classroom under the supervision of a teacher and returned to the research team.

Data of present dissertation were collected through a self report questionnaire named "Living in class, at school, in society" developed by the above mentioned research in project of Italian Ministry of Education and "Sapienza" University of Rome. In the first part of the questionnaire socio-demographic characteristics were assessed. Then "living-together", student satisfaction, internal locus of control and student personal values were assessed.

The scale to measure the ten areas of "living-together" in classroom (labeled PYC – "How Do You Perceive Your Classroom?"), included four items for each of them (for a total of 40 items). In PYC each student was asked to think about classmates, themselves and class and

to assess the frequency that a specific behavior occurs in class using a 4 point Likert scale (from 1 = *never* to 4 = *often*) (for example "Having a good relationship with teachers"). The scale to measure *student personal values* included 13 aimed to measure how much students give importance to values that concern justice in society, power and personal success and self-direction. For each item students indicated how they consider important values described using a 10-point Likert scale (from 1= *not at all important* to 10 = *very important*) (for example "Respect for human rights"). *Student satisfaction* was measured by four items that regard *student classmate satisfaction, student teacher satisfaction, student study satisfaction and student life satisfaction*. Participants reported how they are satisfied with classmates, teachers, own study and own life using a 10-point Likert scale (from 1= *not all important* to 10 = *very important*). *Student internal locus of control* was measured by one item in which participants reported how much they think are able to influence events in own life using a 10-point Likert scale (from 1= *not at all important* to 10 = *very important*).

For our three studies we used these measures and the entire sample of 4,094 students.

In particular, for the First Study related to the analysis of psychometric properties of the instrument that measure the ten areas of "living-together" in classroom (PYC "How do You Perceive Your Class?"), we considered separately sample of students that attending 10th grade and sample of students that attending 12th grade. For Study 2 in which we aim to identify and interpret different profiles of students' *styles of living-together in the classroom* we used the entire sample of students and measures of living-together, student satisfaction, student personal values and student internal locus of control. In addition we used gender, the participate or not in voluntary activities and having or not a stable group of friends.

In Study 3 in which we investigate the interplay between living in the classroom and student school satisfaction, we used the entire sample and considered both individual and class hierarchical levels, using around 224 class in the sample.

Outline of the Dissertation

The central Chapters (Chapters II through IV) present empirical findings of the Italian secondary school students' sample. Chapter II aims to investigate how the ten areas of "living-together" identified by Avallone and colleagues (2007) translate in the school organization, with a particular focus in the relations among students and among students and teachers. In order to do this, we first will examine the dimensionality and internal consistency of the PYC and then we will examine the extent to which the factor structure of the scale would be replicated across grades (10th and 12th) of Italian secondary school.

This study contributes to the scientific knowledge on the measurement of "living-together" in classroom, because to our knowledge no studies in the assessment of student perceptions of life in classroom have yet analyzed all the dimensions that are in PYC in one instrument.

Chapter III aims to identify and interpret different profiles of students' *styles of living-together in the classroom*. First, we will identify clusters through the clustering of four dimensions of "living-together": student loyalty, student rules orientation, student social support and student negotiation. Then we will confirm those of cluster solution and fully describe the clusters identified, analyzing the relationships among these and some dimensions that we chose as test variables and that refer to dimensions of "living-together", students' satisfaction with classmates, teachers, study and life, student values and student internal locus of control.

This study contributes to the scientific knowledge in identifying profiles of secondary school students in which are combined all these dimensions, because, to our knowledge, no previous studies have done this.

Chapter IV aims to investigate the impacts that same dimensions of “living-together” in classroom have on student school satisfaction and in changing the effects of student-level predictors on students satisfaction. Primary, at student level, the study will investigate the direct and interactive effects of student cohesiveness, student social support and teacher support on predicting the student school satisfaction. Then, at class level, the study will examine if class perceived as supportive predicts the student school satisfaction. Finally will test how to be part of a class in which students perceive a supportive climate influence the relationships between student cohesiveness and student school satisfaction, between student social support and student school satisfaction and between teacher support and student school satisfaction (cross-level interactions).

This study contributes to the scientific knowledge, because to our knowledge, despite a variety of study have found that several class-level variables influence students’ school satisfaction, not many of these have suggest any cross-level interactions with students’ perception of specific behavioral dimensions of teacher and classmates.

Please note that Chapters II through IV are based on unpublished articles and they can be read independently from each other.

Methodological Considerations

The use of innovative methodological techniques for the Study 3 in this dissertation was possible thanks to the course “Multilevel Modeling: Foundations and Applications” followed in Department of Psychology - Quantitative Psychology Training Program of KU-University of Kansas. “Multilevel analysis is applicable to a broad range of situations involving units at a lower level (or micro units) nested within units at a higher level (or macro units) (including for example, persons nested within studies as in meta-analysis, and measures over time nested within individuals as in the analysis of repeat measures)” (Diez Roux, 2003, p.588). Because in this technique the treatment of regression coefficients (intercepts and slopes) is allowed to vary across nesting units (i.e., teacher classroom and neighbourhoods; Raudenbush & Bryk, 2002) it is especially suited for in school psychology research. In fact, in these field the units of analysis are nested within each other (student in classroom, classroom in school, and school are grouped in neighbourhoods) and if this hierarchical data structure is ignored, analysis may ignore its important aspect and violate fundamental assumption of regression analysis (Graves & Frohwerk, 2009).

The analysis of Study 1 was performed with SPSS 18 and Mplus 5.1 (Muthén & Muthén, 1998-2007). The analysis of Study 2 was performed with SPSS 18 and Sleipner 2.1 (Bergman & El-Khoury, 2002). For Study 3 we used SPSS 13 and 18.

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CHAPTER II

STUDENTS' RELATIONSHIP WITH CLASSMATES

AND TEACHERS:

A NEW INSTRUMENT FOR THE MEASUREMENT OF

STUDENTS' PERCEPTIONS OF "LIVING-TOGETHER"

IN THE CLASSROOM

Students' Relationship With Classmates and Teachers: A New Instrument for the Measurement of Students' Perceptions of "Living-Together" in the Classroom.

Introduction

Over the last few decades many studies have highlighted the key role of relationships among individuals in influencing their life (Barnett, & Hyde, 2001; Bergeman, Plomin, Pedersen, & McClearn, 1991; Bronfenbrenner, 1979; Feinberg & Kan, 2008). As part of industrial and organizational psychology, Avallone and colleagues has investigated this issue and has introduced the construct of "living-together", which indicates the process of sharing existential experiences with other people, groups and social systems for a period of time in a defined common place (Avallone, Farnese, Pepe & Paplomatas, 2007). In their 2007 study, Avallone et al. examined how people live-together in social contexts (for example relationships among different cultures, ethnicities, political orientations, etc.), in work organizations (for example relationships among colleagues, among leaders, among leaders and employees, etc.) and in families' and couples' affective contexts (relationships in couples, among parents and children, among siblings, etc.).

In investigating the different aspects that the "living-together" process assumes in these contexts, Avallone Farnese, Pepe and Paplomatas (2007) analyzed what people meant to affective living-together, organizational living-together and social living-together and undivided ten areas common to the different contexts examined, defining the living-together process and the way in which people are together. The ten areas individuated regard: respecting of rules and norms; sense of confidence in people; tolerance and acceptance of diversity; collaboration and cooperation; equity, support and solidarity; a sense of protection and secure environment; care for others; and effective communication, power in relationships, investment of energy and involvement.

The principal purpose of our study was to explore how these areas translate in the school organization and specifically in the relationships among students and among students and teachers. First a new instrument will be introduced; the PYC “How Do You Perceive Your Class?” for measuring scholastic living-together and developed during research for the Italian Ministry of Education and “Sapienza” University of Rome, coordinated by Avallone (2007). Then, the psychometric characteristics of this instrument will be analyzed.

Our interest in analyzing the “living-together” dimensions in schools originated from the pivotal role that school plays in many spheres of adolescents’ lives and in the facilitation or inhibition of adolescent development. Young people spend much of their time at school, particularly in classrooms, and this can potentially help them to not only develop their, social competence and experience a sense of competence and belonging (Vieno, Santinello, Pastore, & Perkins, 2007), but also to consolidate social relationships with peers and with non parental adults (i. e., teachers, principals and other scholastic collaborators). Furthermore, school is a place in which students can be helped to build their future, trained to be responsible and engaged members of their community and to be able to love, work and be lifetime learners (Cohen, 2006). In this sense school and the classroom are a social organization in which students have the opportunity to live-together, to experiment with the feeling of membership and obligation to a group (Syvertsen, Flanagan, & Stout, 2009) and to build models of mutual recognition and support that may have an effect throughout their lives. In fact, relationships with others especially during adolescence have been found to be a very important resource for positive adaptation and for the development of self-efficacy and psychological well-being (Ayers, Sandler & Twohey, 1998; Bandura, Barbaranelli, Caprara, & Pastorelli, 2001; Cartland, Ruch-Ross, & Henry, 2003). Moreover, students who do well in school and who perceive a positive classroom atmosphere tend to be more satisfied with school (Baker, 1998; Suldo, Shaffer, & Riley, 2008).

In educational research, students' perceptions of the quality of their relationships and of their living-together with both teachers and peers have been investigated in theoretical framework of school climate (Althof, 2009; Anderson, 1982; Halpin & Croft, 1963; Higgins-D'Alessandro & Guo, 2009; Homra, Huerta, & Sokol, 2009) and of classroom climate (Brand, Felner, Seitsinger, Burns, & Bolton, 2008; Flook, Repetti, & Ullman, 2005; Fry & Coe, 1980; Hart & Fellabaum, 2008; Ladd & Dinella, 2009; Libbey, 2004; Rowe, Kim, Baker, Kamphaus, & Horne, 2010; Wentzel, 1994; Zedan, 2010). These two fields of investigation are difficult to define succinctly. When considering a more comprehensive conceptual level, researchers are usually in agreement on the fact that school climate identifies people's perceptions of the school as a place for learning and interacting with peers and authority figures (teacher and principal) (Anderson, 1982; Libbey, 2004) and for having support and care (Syvertsen et al., 2009). Classroom climate has been defined as the emotional and relational characteristics or the mood or atmosphere that is created in the classroom by the school, teachers, and peers through the specified rules, the way the teachers interact with pupils and the way the physical environment is laid out (Creemers & Reezigt, 1999; Freiberg & Stein, 1999).

Previous studies have investigated the role that these dimensions play in enhancing students' performance, achievement and school and life satisfaction (DeSantis King, Houbner, Suldo, & Valois, 2006; Fraser, 1994). Many researchers in a number of countries and for different cultural groups, have suggested significant relationships between classroom climate and students' behaviors, self-efficacy, achievement, social and emotional development, motivation and engagement, and goal orientation (Adelman & Taylor, 2005; Fraser, 1989, 1991). Thus, there is no doubt that relationships with peers and teachers, and a positive school and classroom climate are protective factors in preventing risk behaviors (e.g. bullying, drug and alcohol abuse) (e.g., Syvertsen et al., 2009). In fact, students who have a supportive school

climate frequently engage in appropriate behaviors and are more satisfied at school (e.g., DeSantis King et al., 2006).

The Present Study

The main goal of the present study was the identification in the school organization of the ten dimensions defined previously by Avallone et al. (2007) and individuated in social, affective and organizational contexts.

The instrument to measure the ten dimensions of “living-together” in classroom is called “How Do You Perceive Your Class?” (PYC). Based on preliminary studies (Avallone et al., 2007) four items for each 10 dimensions of “living-together” (for a total of 40 items) were developed for the class context (see Appendix 1). In PYC each student is asked to think about classmates, themselves and class and to assess the frequency that a specific behavior occurs in class using a 4 point Likert scale (from 1 = *never* to 4 = *often*) (for example "Having a good relationship with teachers").

The 10 dimensions assessed by PYC refer to different behaviors and characteristics of students and teachers specifically:

1. *Student Loyalty* – the extent to which students are sincere and honest, and keep their commitments and secrets (e.g. “To keep a promise/pledge.”);
2. *Teacher Support* – the extent to which the teacher helps, encourages and is interested in the students (e.g. “Can you ask for help from teachers when in difficulty.”);
3. *Student Assertiveness* – the extent to which opportunities exist for students to express their own ideas and opinions, to say what was not understood and to make their opinion count (e.g. “To freely express their ideas.”);
4. *Student Rules Orientation* – the extent to which students respect classroom rules and environment (e.g. “Respect the discipline in the classroom.”);

5. *Students Cohesiveness* – the extent to which opportunities exist for students to feel at ease in class and with peers, and feel part of the classmate group (e.g. “Feel part of the class.”);
6. *Teacher Equity* – the extent to which the teacher treats all students equally, including the distribution of praise and questions, and the inclusion in discussion (e.g. “All receive the same attention from teachers.”);
7. *Student Social Support* – the extent to which opportunities exist for students to help classmates in distress, to integrate classmates who are more shy, and to defend the weaker classmates (e.g. “Help shy classmates to integrate.”);
8. *Student Negotiation* – the extent to which opportunities exist for students to seek agreement during discussions and among several opinions, and to accept new ideas (e.g. “Seek a meeting point between different views.”);
9. *Student Cooperation* – the extent to which students cooperate with each other during class and activities (e.g. “Help in carrying out classroom activities.”).
10. *Student Power Orientation* – the extent to which students want to assume positions of leadership, to rule over others, to seek the consent of the other (e.g. “Wanting to become a leader.”).

As mentioned above, the ten dimensions that assess student perception of living-together in the classroom might be considered as corresponding to those that are assessed with a number of instruments developed to measure students’ perception of classroom climate (e.g., Fraser, 1989). Most of the instruments on classroom climate have been built to measure the meaningful environment for students in a given class, in view of the strong relationship that it has with desirable academic, psychological and social outcomes (e.g., Anderson, Hamilton, & Hattie, 2004). Classroom climate questionnaires essentially have been developed in both “personal” and “class” forms that respectively assess students’ perceptions of their own role in the class and their perceptions for the class as a whole (e.g., Sinclair & Fraser, 2002). PYC was

developed in a “class form”. As a result, in our framework we conceptualize the classroom as a place in which the perceptions of the students’ and teachers’ individual characteristics (“who we are”) and behaviors (“what students and teachers do”), define “how I feel”. Specifically the sense of “who we are” guides the relationships and behaviors in the classroom and influences students’ feelings about teachers, classmates and themselves.

In the literature it has been repeatedly noted that teachers especially have a critical function in the quality of school life (e.g., Midgley, Feldlaufer, & Eccles, 1989; Salmela-Aro, Kiuru, Pietik Salmeläinen, Jokela, 2008) and in school satisfaction (Danielsen, Samdal, Hetland, & Wold, 2009; DeSantis King et al., 2006). Several researchers have emphasized how students' perceptions of the nature and quality of their relationships with teachers influence their confidence about learning and academic achievement (Dorman, 2001). Teachers’ evaluative and supportive feedback influences the students’ perceptions of their competence which in turn, predicts motivation, dynamic well-being and performance (Bandura, 1997; Bong & Skaalvik, 2003; Eccles & Wigfield, 2002). In fact, when teachers appear to be attentive to social needs and build a rational and affective disciplinary climate (Murphy, Weil, Hallinger, & Mitman, 1985) showing support and concern for students, they promote in students perceptions of respect (Syvertsen et al., 2009), engagement in academic tasks (Ryan et al., 1998) and interest in schoolwork (Midgley et al., 1989).

Moreover, teachers’ engagement to promote affective disciplinary climates (Murphy et al., 1985), encourages students to share their thoughts and to perceive fairness and equity (Syvertsen et al., 2009). The perception of fairness (i.e., fair school climate) is related to a positive classroom context, sense of community and academic performance and is a strong mediator between belief in a just world, school grades and well-being. In particular, higher feelings of fairness can reduce students’ negative feelings and regulations and framework for classroom activities, in which students can participate in development and interpretation of

those regulations, influence their adjustment to the school and how they feel about school and classroom (e.g., Samdal, Nutbeam, Wold, & Kannas, 1998).

In addition to students' views of teachers' support, most measures of classroom climate assess relationships with peers and how their personal characteristics can influence these relationships. As mentioned above, several studies have highlighted the important role of positive relationships in developing a feeling of well-being (e.g., Diener, Diener, & Diener, 1995; Flanagan, Bowes, Jonsson, Csapo, & Sheblanova, 1998). Relationships with others and positive emotional support play a central role in the development of individuals during the complete course of their lives (see Di Giunta, Eisenberg, Kupfer, Steca, Tramontano, & Caprara, 2010). Studies conducted in a scholastic context have shown that prosocial behaviors (sharing with others, caring, giving support) are positively related to self-esteem and life satisfaction (Wentzel, McNamara, Barry, & Caldwell, 2004). Moreover, studies conducted in an evaluative context have observed how prosocial behaviors are positively associated with positive individual characteristics that reflect high levels of social competence, accountability and adolescents' good adaptation (Eisenberg & Fabes, 1998). It has been demonstrated that in adolescents more than in children, prosocial behavior becomes a specific trait in friends relationships (i.e., cooperative, cordial, sincere, honest; Caprara, Barbaranelli, & Borgogni, 1993; Costa & McCrae, 1985; Barbaranelli & Fida, 2006). In fact, when students have a good relationship with peers, they enrich their sense of possibilities, feel more effective and able to learn and better able to engage in academic achievement (Webb & Palincsar, 1996). Especially in young adolescents, positive interactions with classmates and perceptions of their social and emotional support, influence students' emotional, cognitive and health development, facilitate their self-regulation and self concept (Wentzel, 1998), encourage engagement and concentration on achieving goals and academic learning (Pierce, 1994), and discourage disruptive behaviors (Ryan & Patrick, 2001). Furthermore, peer support and high levels of

social bonding to prosocial groups and activities (attachment to school, commitment to educational pursuits, and belief in the fairness of school rules) protect adolescents from many problems caused by acts of unfairness or iniquity (Abbott, O'Donnell, Hawkins, Hill, Kosterman, & Catalano, 1998) and can influence students' satisfaction of their class, school and global life (Danielsen et al., 2009).

It is amply demonstrated that students' positive view of school are related to student participation in, and responsibility for, school life (Fraser, 1994; Samdal et al., 1998). Students who feel included in a classroom group in which they are cared for, giving and receiving positive responses or tasks (Danielsen et al., 2009), can share cognitive and emotive experiences and are encouraged to express themselves and to dialogue and cooperate. In fact, the possibility to actively participate in discussion and the planning of the classroom program can decrease the importance of lower academic performances (Samdal et al., 1998). In this way feelings of belonging are promoted (Osterman, 2000) and the number of negative and conflictual experiences is reduced, in turn increasing students' perceptions of satisfaction with their school life (DeSantis King et al., 2006).

Specific Aims

The general purpose of the current study was to investigate how the ten dimensions of "living-together" identified by Avallone and colleagues (2007) translated in the school organization, with a particular focus in the relations among students and among students and teachers. In order to do this, the first aim was to examine the dimensionality and internal consistency of the PYC and then to examine the extent to which the factor structure of the scale would be replicated across grades (10th and 12th) as the second aim. To indicate the grades attended by our sample we used USA high school labels (10th and 12th) that corresponding at 2nd and 5th grades of Italian secondary school (5th grade of secondary school in Italy and 12th grades of high school in USA are both the last years of high school in the two countries).

To our knowledge, no studies in the assessment of classroom climate have yet analyzed all the dimensions that are in PYC in one instrument. Moreover, although the ten PYC dimensions are common in the literature of classroom climate, their combination into a single instrument is unique.

Hypothesis

Regarding the first aim, on the basis of Avallone et al's study (2007) we hypothesised a ten factor structure of the scale.

With regards to the second aim, it is expected that the measure is invariant among grades. We have made this assumption because we did not have any specific findings that lead us to hypothesize a differential functioning of the majority of instruments that assess classroom climate in different grades of high school and then in different age groups (in our sample the mean age of students was 15 years (SD = .7) for 10th grade and 18 years (SD = .8) for 12th grade).

Method

Participants

Participants were part of a national project organized by the Italian Ministry of Education and "Sapienza" University of Rome (see Chapter III and IV). Approximately 300 high schools with a total of 4,094 students attending both 10th and 12th grade (2nd and 5th grades of Italian secondary school. 5th grade of secondary school in Italy and 12th grades of high school in USA are both the last years of high school in the two countries) participated in the study. Of these, 1,917 (47%) attended 10th grade (52% female) and 1,790 (44%) attended 12th grade (56% female). The mean age of the students was 15 years (SD = .7) for 10th grade and 18 years (SD = .8) for 12th grade. Twenty-eight percent of students lived in north-eastern regions of Italy, 23%

in the north-west, 18% in central Italy, 18% in the south, and 12% lived on the islands of Sicily and Sardinia. The family profiles matched the national profile with regard to the families' socio-economic characteristics. Most young people were from intact families (79%), had Italian parents (89%) and had almost one parent with a high school education (43%).

Procedures

A stringent consent procedure for the study was followed, including parental consent, approval from school councils and the freedom of the students to reject participation if they chose to do so. All students were assured of the confidentiality of their responses and that participation was voluntary. Parents were informed and teachers supervised student completion of the questionnaires in their classrooms. (see also Chapter I)

Measures

Data were collected through a self report questionnaire. In the first part of the questionnaire socio-demographic characteristics were assessed. *Student perception of "living-together"* was assessed by the PYC questionnaire described above.

Analytical Approach

The first aim of this study was to investigate the psychometric characteristics of the PYC. Firstly we examined the dimensionality of the questionnaire by using an exploratory factor analysis (EFA) approach. Next we performed a confirmatory factor analysis (CFA) as a test of replicability of the factor model (Bollen, 1989; Thompson, 1994). Exploratory factor analyses were performed on the 10th grade sample to investigate the dimensionality of the PYC. Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity were used to assess the appropriateness of the correlation matrices to factor analysis.

After having ascertained the suitability of the correlation matrices to factor analysis we selected the number of factors based on the theoretic hypotheses and considering the Standardized Root Mean Square Residual (SRMR) and the Root Mean Square Error of Approximation (RMSEA) as indices of goodness of fit. Promax oblique rotations were applied to unrotated matrices. Promax rotation is a procedure normally used when factors are expected to correlate and be non-orthogonal (Gorsuch, 1983).

After having ascertained the dimensionality of our PYC questionnaire we aimed to cross-validate the ten factor model (Bollen, 1989) in an independent sample of students, i.e., those attending 12th grade, by using confirmatory factor analysis (CFA). Before proceeding with the analysis the normality of the variables was ascertained. EFA on the 10th grade sub-sample and CFA on the 12th sub-sample were performed using Robust Maximum Likelihood parameter estimates. All analyses were done using MPlus 5.1 (Muthén & Muthén, 1998-2007). Internal consistency and item-scale correlations were investigated in the whole sample.

A multigroup approach (MGCFA) was used to test measurement invariance across grades (10th and 12th). Three consecutively more restrictive analyses of invariance were run with the Maximum Likelihood method of estimation. Each form of invariance is nested in the previous model and involves added constraints at each step that build on previous constraints. “The logic is that invariance restrictions may hold for some but not all manifest measures across populations, and relaxing invariance constraints where they do not hold controls for partial measurement inequivalence” (Vandenberg & Lance, 2000). We tested three nested models (Vandenberg, 2002), configural invariance, metric invariance and scalar invariance. In the first model for each group the same pattern of fixed and free factor loadings was specified. In the second for each group the same factor loadings per item was specified and finally for the third model the same factor loadings and latent intercepts per item were specified

The most recurring additional tests were those of partial invariance at each step; modification indices (MI) from each step were applied to improve the structure models (Vanderberg, 2002). Chi-square difference tests were performed to compare nested models adopting a cutoff of $p < .01$ (Kline, 1998). The attention was aimed toward the fit model indices that were less sensitive to the sample size, since obtaining a nonsignificant chi-square becomes increasingly unlikely with large sample sizes (Kline, 1998). The comparative fit index (CFI), the root-mean-square error of approximation (RMSEA) with associated confidence interval and p value, the standardized root-mean-square residual (SRMR) are reported for each model. CFI values greater than .90 were considered adequate for good models (Kelloway, 1998; Kline, 1998) as well as RMSEA values lower than .07 (Browne & Cudeck, 1993) and SRMR values lower than .08 (Kelloway, 1998). For the RMSEA, a nonsignificant p value means the hypothesized model is a good approximation of the population. MPlus 5.1 was using for CFAs (Muthén & Muthén, 1998-2007).

Results

Descriptive Statistics

Descriptive statistics of the PYC items are presented separately for 10th and 12th grades in Table 1. As shown there were missing data in all of the variables. Estimation of parameters must be adjusted accordingly in the presence of missing values and so we used Maximum Likelihood estimation of parameters, which is a method widely accepted as appropriate for handling missing data (Schafer & Graham, 2002).

Table 1. Descriptive Statistics of the PYC “How Do You Perceive Your Class?” Items Separately for Grade (10th and 12th) of High School in Exploratory and Confirmatory Factor Analysis

	10 th grade					12 th grade				
	N	Mean	SD	Skewness	Kurtosis	N	Mean	SD	Skewness	Kurtosis
1. 57_Feeling good in classes	1795	3.116	.720	-.553	.230	1728	2.986	.732	-.404	.000
2. 58_Having a good relationship with classmates	1773	3.269	.681	-.695	.524	1706	3.104	.685	-.421	.137
3. 59_Feeling part of the class	1789	3.079	.819	-.684	.028	1725	2.881	.862	-.433	-.439
4. 60_Meeting with classmates also out of school	1783	2.482	.899	.125	-.756	1720	2.483	.871	.133	-.672
5. 61_Having an understanding of the teachers	1789	2.486	.789	-.088	-.439	1724	2.465	.784	-.096	-.440
6. 62_Considering the teachers as a reference point	1773	2.312	.899	.134	-.781	1716	2.212	.851	.252	-.582
7. 63_Having a good relationship with teachers	1789	2.728	.808	-.349	-.271	1722	2.739	.766	-.379	-.076
8. 64_Being able to ask teachers for help in cases of difficulty	1789	2.631	.873	-.184	-.637	1722	2.549	.858	-.146	-.614
9. 65_Respecting discipline in the classroom	1789	2.900	.856	-.460	-.388	1728	3.038	.787	-.580	.021
10. 66_Caring for the classroom and school equipment	1795	2.901	.860	-.488	-.352	1720	2.980	.815	-.545	-.119
11. 67_Knowing and abiding by the school rules	1794	2.865	.866	-.437	-.433	1722	2.883	.804	-.423	-.204
12. 68_Being on time for lessons	1799	3.151	.884	-.810	-.146	1721	3.067	.857	-.645	-.260
13. 69_Everyone being treated equally	1787	2.684	.950	-.229	-.863	1726	2.312	.936	.147	-.887
14. 70_Receiving fair evaluations	1778	2.683	.854	-.326	-.469	1721	2.364	.848	-.036	-.697
15. 71_Everyone receiving the same attention from the teachers	1787	2.565	.899	-.145	-.739	1723	2.295	.876	.116	-.738
16. 72_Knowing the criteria that teachers use to give marks/grades	1791	2.711	.889	-.237	-.672	1730	2.535	.864	-.064	-.652
17. 73_Feeling free to say what you haven't understood	1787	3.003	.858	-.529	-.412	1721	2.947	.842	-.478	-.352
18. 74_Students being able to freely express their own ideas	1787	3.008	.846	-.511	-.408	1722	2.868	.860	-.363	-.535
19. 75_Allowing everyone to express their views	1789	3.022	.804	-.500	-.254	1727	2.929	.823	-.399	-.401
20. 76_Students making their own views count	1783	2.875	.799	-.288	-.428	1720	2.710	.802	-.149	-.464
21. 77_Groupwork in class	1782	2.527	.897	.003	-.762	1721	2.357	.847	.163	-.567
22. 78_Cultivating common interests in class	1778	2.591	.782	-.184	-.353	1724	2.459	.771	-.029	-.395
23. 79_Students making their own study materials available to classmates	1793	2.891	.855	-.439	-.410	1725	2.924	.840	-.480	-.303
24. 80_Helping out in class activities	1796	3.006	.810	-.583	-.043	1726	2.898	.782	-.498	.041
25. 81_Keeping a secret	1787	2.871	1.006	-.466	-.889	1715	2.635	1.003	-.168	-1.044
26. 82_Keeping a promise/commitment	1792	3.014	.844	-.628	-.128	1717	2.881	.836	-.451	-.297
27. 83_Being honest	1787	3.080	.879	-.726	-.181	1718	2.922	.902	-.486	-.552
28. 84_Being fair	1790	3.098	.882	-.780	-.088	1722	2.927	.911	-.479	-.606
29. 85_Helping a friend through a difficult time (at school and/or family)	1779	3.129	.847	-.761	-.034	1711	2.992	.832	-.497	-.344
30. 86_Helping the shyer classmates to integrate	1788	2.773	.871	-.317	-.558	1726	2.633	.841	-.242	-.497
31. 87_Defending a weaker classmate	1784	2.859	.873	-.359	-.585	1723	2.722	.861	-.248	-.571
32. 88_Helping a friend in classroom activities	1761	2.904	.794	-.476	-.070	1711	2.866	.752	-.445	.103
33. 89_ Tending to bully others with their behavior	1760	2.282	.928	.224	-.817	1711	2.237	.944	.324	-.794
34. 90_Wanting to become a leader	1787	2.178	1.058	.379	-1.111	1722	2.080	1.029	.502	-.954
35. 91_Seeking the consensus of others	1768	2.673	.889	-.272	-.633	1704	2.620	.867	-.239	-.586
36. 92_ Tending to bully others with their behavior	1775	2.206	.936	.277	-.850	1711	2.134	.869	.294	-.688
37. 93_Searching for a point of agreement during discussions	1784	2.766	.834	-.456	-.241	1719	2.711	.775	-.418	-.080
38. 94_ Welcoming new ideas from all group members	1788	2.796	.799	-.370	-.216	1716	2.701	.757	-.337	-.110
39. 95_Making friends with people from environments different from their own	1780	2.802	.931	-.369	-.721	1721	2.664	.904	-.252	-.696
40. 96_Meeting halfway on different points of view	1772	2.777	.815	-.326	-.338	1710	2.732	.748	-.349	-.050

As shown in Table 1, all the items are normally distributed. Relative multivariate kurtosis was -1.11, which was less than |2.0|, so a transformation was not needed.

Exploratory and Confirmatory Factor Analysis

Exploratory factor analyses were performed on the 10th grade sample. In accordance with the structure of our instrument we hypothesized 10 dimensions: a) student cohesiveness, b) teacher support, c) student rules orientation, d) teacher equity, e) student assertiveness, f) student cooperation, g) student loyalty, h) student social support, student power orientation and i) student negotiation. Since this solution revealed five items loading lower than |.35| these were deleted and a second analysis was performed. The resulting ten-factor model was supported by the $\chi^2(425) = 898.624$; $p < .000$; RMSEA = .03; CFI = .97; SRMR = .02).

Table 2 shows the factor loading of the final solution explaining 47% of the total variance. The first factor labelled *Student Loyalty* accounted for the 6% of the total variance, the second factor *Teacher Support* accounted for the 5% of the total variance, the third factor *Student Rules Orientation* accounted for 5% of the total variance, the fourth factor *Student Assertiveness* accounted for 5% of the total variance, the fifth factor *Teacher Equity* accounted for 5% of the total variance, the sixth factor *Student Cohesiveness* accounted for 5% of the total variance, the seventh factor *Student Power Orientation* accounted for 4% of the total variance, the eighth factor *Student Social Support* accounted for 4% of the total variance, the ninth factor *Student Negotiation* accounted for 4% of the total variance, and finally the ten factor *Student Cooperation* accounted for 4% of the total variance. Factors were shown to be correlated, with correlations ranging from -.05 (correlation between student cooperation and student power orientation) to .51 (correlation between teacher support and teacher equity).

Table 2. *Pattern Matrix for the Ten-Factor Exploratory Factor Analysis of the PYC “How Do You Perceive Your Class?”*

	Student Loyalty	Teacher Support	St. Rule Orientation	St. Assertiveness	Teacher Equity	Student Cohesiveness	Student Power Orientation	Student Social Support	Student Negotiation	Student Cooperation
26. 82_ Keeping a promise/commitment	,830	,028	,025	,052	-,051	-,092	,043	-,040	-,085	,103
25. 81_Keeping a secret	,814	-,066	-,059	,020	,039	-,096	,094	,019	-,141	,061
28. 84_Being fair	,793	-,005	,031	-,038	,063	,057	-,089	,045	,038	-,089
27. 83_Being honest	,792	,029	-,011	-,076	,032	,044	-,063	,067	,107	-,128
6. 62_Considering the teachers as a reference point	,007	,836	,059	-,006	-,036	-,031	,039	,018	-,007	-,065
7. 63_Having a good relationship with teachers	-,031	,818	,076	-,018	-,023	,076	-,024	,004	-,049	,013
5. 61_Having an understanding of the teachers	,026	,784	-,062	-,015	,084	-,039	,004	-,014	-,033	,045
8. 64_Being able to ask teachers for help in cases of difficulty	-,022	,757	-,046	,007	-,003	-,043	-,026	-,007	,080	-,017
11. 67_Knowing and abiding by the school rules	-,031	,007	,833	,022	,017	-,015	,001	,025	,032	-,040
9. 65_Respecting discipline in the classroom	,025	,068	,796	,058	-,042	-,005	,020	-,019	-,045	-,047
10. 66_Caring for the classroom and school equipment	,024	-,043	,789	,017	,035	-,028	,019	,009	,016	-,039
12. 68_Being on time for lessons	-,047	-,007	,722	-,091	,017	,016	-,037	,096	-,116	,125
18. 74_Students being able to freely express their own ideas	,021	,005	-,054	,892	-,007	-,025	-,054	-,053	,034	-,048
19. 75_Allowing everyone to express their views	-,037	-,105	,119	,808	-,011	-,086	-,053	-,036	,142	,064
20. 76_Students making their own views count	,017	-,022	,000	,706	-,027	,087	,086	,137	-,068	-,095
17. 73_Feeling free to say what you haven't understood	-,031	,129	-,057	,649	,129	,023	-,008	-,011	-,072	,082
14. 70_Receiving fair evaluations	,060	-,012	-,019	-,049	,839	-,011	-,014	-,051	-,019	,076
13. 69_Everyone being treated equally	,022	-,102	,060	,004	,811	,057	-,034	,051	,028	-,044
15. 71_Everyone receiving the same attention from the teachers	-,003	,147	-,008	,010	,724	,011	,008	,009	,030	,006
16. 72_Knowing the criteria that teachers use to give marks/grades	-,033	,058	-,009	,154	,482	,012	,073	-,040	,079	-,006
3. 59_Feeling part of the class	-,051	-,041	-,057	-,043	,053	,858	,005	,142	-,117	-,037
2. 58_Having a good relationship with classmates	-,034	,004	-,028	,019	,001	,856	,002	,022	-,007	-,010
1. 57_Feeling good in classes	-,019	,001	,064	,015	,005	,761	,000	-,120	,038	,056
34. 90_Wanting to become a leader	,015	-,010	-,050	,106	-,049	-,006	,755	,002	-,148	-,117
33. 89_ Tending to bully others with their behaviour	-,068	-,010	-,029	,030	,136	-,097	,687	,238	-,193	,008
36. 92_ Tending to bully others with their behaviour	,012	-,025	,058	-,182	,067	-,031	,672	-,145	,253	,050
35. 91_Seeking the consensus of others	,058	,043	,035	-,010	-,148	,152	,662	-,079	,192	,059
31. 87_Defending a weaker classmate	,060	-,040	,044	-,004	,033	,025	,010	,783	,095	-,091
30. 86_Helping the shy classmates to integrate	-,019	,028	,065	,009	-,003	,018	-,005	,736	,103	,087
29. 85_Helping the shy classmates to integrate	,216	,054	-,030	,068	-,170	,075	-,009	,449	,091	,202
40. 96_Meeting halfway on different points of view	-,017	-,041	,005	,046	,050	-,017	,061	,028	,771	,056
39. 95_Making friends with people from environments different from their own	-,171	,022	-,100	-,063	,010	-,142	-,035	,335	,771	-,076
38. 94_ Welcoming new ideas from all group members	,140	,032	-,004	,106	,016	,112	,034	-,091	,594	-,006
23. 79_Students making their own study materials (notes, research, etc..) available to classmates	-,018	-,020	,021	-,061	,026	-,030	,003	,018	-,041	,899
24. 80_Helping out in class activities	,013	-,002	-,035	,050	,012	,041	-,025	,012	,032	,778

After having ascertained the dimensionality of our PYC questionnaire we aimed to cross-validate the ten factor model (Bollen, 1989) in an independent sample of students, i.e., those

attending 12th grade, by using confirmatory factor analysis (CFA). Results of this analysis confirmed the hypothesized model. CFA fit the data ($\chi^2(508) = 1211.533$; $p < .000$; RMSEA = .05; CFI = .96; SRMR = .04).

Table 3. Means, Standard Deviation and Correlations of the Ten Factors of PYC on 12th Grade

	M	SD	1	2	3	4	5	6	7	8	9	10
1.Student_Loyalty	2.84	.76	1									
2.Teacher_Support	2.49	.67	.198**	1								
3.Student_Cohesiveness	2.99	.65	.410**	.136**	1							
4.Student_Assertiveness	2.86	.69	.261**	.457**	.278**	1						
5.Student_Rules_Orient.	2.99	.63	.269**	.286**	.077**	.196**	1					
6.Teacher_Equity	2.38	.72	.239**	.566**	.178**	.487**	.315**	1				
7.Student_Social_Supp.	2.79	.70	.505**	.221**	.327**	.274**	.186**	.194**	1			
8.Student_Negotiation	2.70	.63	.424**	.298**	.292**	.341**	.268**	.274**	.479**	1		
9.Student_Power_Orient.	2.27	.67	-.131**	.069**	-.021	.025	-.082**	.015	-.095**	-.047**	1	
10.Student_Cooperation	2.91	.71	.372**	.230**	.408**	.263**	.189**	.234**	.376**	.355**	.007	1

The italic values are not significant, * $p < .05$, (two tailed), ** $p < .01$ (two tailed).

Correlations among the factors were calculated and ranged from -.047 (correlation between student negotiation and student power orientation) to .57 (correlation between teacher equity and teacher support) (see Table 3). Table 4 shows the standardized estimates of factor loadings. All the factor loadings were significant and higher than |.40|.

Internal Consistency

To investigate internal consistency of each dimension of the PYC questionnaire, Cronbach's Alpha and corrected item-scale correlations were computed for the dimensions with more than 2 items, i.e., student cohesiveness, teacher support, student rules orientation, student equity, student assertiveness, student loyalty, student social support, student power orientation and student negotiation. Correlations between items were computed for the dimension with two items. Cronbach's Alpha of Student Loyalty was .84.

Table 4. *Standardized Estimated of Factor Loadings of PYC “How Do You Perceive Your Class?” of the Ten Factor Model*

Student Loyalty		Teacher Support	
27. 83_Being Honest	.810	7. 63_Having a good relationship with teachers	.812
28. 84_Being Fair	.795	6. 62_Considering the teachers as a referent point	.756
26. 82_Keeping a promise/commitment	.710	5. 61_Having an understanding of the teachers	.749
25. 81_Keeping a secret	.582	8. 64_Being able to ask teachers as a reference point	.716
Student Assertiveness		Rules orientation	
18. 74_Students being able to freely express their own ideas	.874	11. 67_Knowing and abiding by the school rules	.727
19. 75_Allowing everyone to express their lives	.814	9. 65_ Respecting discipline in the classroom	.715
17. 73_Feeling free to say what you haven't understood	.676	10. 66_Caring for the classroom and school equipment	.685
20. 76_ Students making their own views count_	.686	12. 68_Being on time for lesson_	.562
Student cohesiveness		Student Social Support	
2. 58_Having a good relationship with classmates	.847	29. 85_Helping a friend in classroom activity	.787
3. 59_Feeling part of the class	.707	30. 86_Helping a friend in classroom activities	.680
1. 57_Feeling good in class	.767	31. 87_Defending a weaker classmates	.624
Student Power Orientation		Teacher Equity	
33. 89_Tending to bully others with their behaviour	.722	13. 69_Everyone being treated equally	.760
34. 90_Wanting to become a leader	.757	14. 70_Receiving fair evaluations	.797
35. 91_Seeking the consensus of others	.408	15. 71_Eveyone receiving the same attention from the teachers	.857
36. 92_Tending to bully others with their behaviour	.442	16. 72_Knowing the criteria that teachers use to give marks/grades_	.517
Student negotiation		Student Cooperation	
37. 93_Searching for a point of agreement during discussion	.696	23. 79_Students making their own study materials available to classmates	.663
38. 94_ Welcoming new ideas from all groups members	.729	24. 80_Helping out in class activities	.821
40. 96_ Meeting halfway on different points of view	.740		

Corrected item-scale correlations ranged from .55 to .75, with a mean of .68 and a standard deviation of .08. Cronbach's Alpha of Teacher Support was .84. Corrected item-scale correlations ranged from .64 to .72, with a mean of .67 and a standard deviation of .05. Cronbach's Alpha of Student Rules Orientation was .77. Corrected item-scale correlations ranged from .49 to .62, with a mean of .57 and a standard deviation of .08. Cronbach's Alpha of Student Assertiveness was .84. Corrected item-scale correlations ranged from .62 to .78, with a mean of .68 and a standard deviation of .09. Cronbach's Alpha of Student Cohesiveness was .81. Corrected item-scale correlations ranged from .63 to .71, with a mean of .66 and a standard deviation of .12. Cronbach's Alpha of Teacher Equity was .83. Corrected item-scale

correlations ranged from .46 to .74, with a mean of .65 and a standard deviation of .01. Cronbach's Alpha of Student Social Support was .78. Corrected item-scale correlations ranged from .57 to .66, with a mean of .61 and a standard deviation of .08. Cronbach's Alpha of Student Power Orientation was .70. Corrected item-scale correlations ranged from .44 to .55, with a mean of .48 and a standard deviation of .05. Cronbach's Alpha of Student Negotiation .67. Corrected item-scale correlations ranged from .42 to .56, with a mean of .49 and a standard deviation of .07. With regard to the Student Cooperation dimension, correlation between the two items was .54.

Grade Invariance

We investigated if the factorial structures of the PYC were replicated across grades (10th and 12th). We included the correlation between errors for the two grade samples model testing as suggested by the CFAs. In the two samples, the fit indices of the configural invariance models suggested that the same factor structures existed for 10th grade and 12th grade for PYC. As shown in Table 5 the mean change in overall χ^2 between the configural invariance model and the metric invariance model was nonsignificant in two samples. Then we tested the scalar invariance.

Table 5. *Fit Indices and Chi-squared differences for Grade Invariance Analysis*

	χ^2	<i>Df</i>	<i>p</i>	CFI	RMSEA	SRMR
Step 1 – Configural	3533.344	1030	.000	.93	.04	.04
Step 2 - Metric	3555.170	1053	.000	.93	.04	.04
Chi- squared difference	p value diff 0.084					
Step 3- Scalar	3576.264	1069	.000	.93	.04	.04
Chi- squared difference	p value diff 0.175					

The mean change in overall χ^2 between the metric invariance model and the scalar invariance model was nonsignificant in both samples.

This finding suggesting that scalar invariance held across grades (10th and 12th) (see Table 5 for the fit indices of the multi group CFA separately by grades).

Discussion

The principal purpose of our study was to explore how the dimensions of “living-together” identified by Avallone and colleagues (2007) were translate in the school organization and, specifically, in the relationships among students, and among students and teachers in the classroom. The first aim of the current study was to examine the dimensionality and internal consistency of the PYC (“How Do You Perceive Your Class?”) and the second aim was to examine the extent to which the factor structure of the PYC scale would be invariant across grades (10th and 12th).

The results of the present study offer support for the psychometric characteristics of our questionnaire and thus for the assessment of students’ perception of the relationships that regard themselves, teacher and classmates in the classroom. In particular, EFA and CFA and reliability results confirmed the goodness of questionnaire in terms of factor structure and internal consistency. Taken together the EFA and CFA provide support of the ten-factor model hypothesized. Specifically the theoretical dimensions that resulted in the empirical investigation were: student loyalty, student negotiation, teacher support, teacher equity, student assertiveness, student rules orientation, student cohesiveness, student support, student cooperation and student power orientation. *Student Loyalty* refers to the extent to which students perceive classmates and themselves as sincere and honest, and keeping promises and secrets. *Student Negotiation* refers to the extent to which opportunities exist for students to seek agreement during discussions and among several opinions, and to accept new ideas. *Teacher*

Support refers to the extent to which the teacher helps, encourages and is interested in the students. *Teacher Equity* refers to the extent to which the teacher treats all students equally, including the distribution of praise and question and inclusion in discussion. *Student Assertiveness* refers to the extent to which opportunities exist for students to express their own ideas and opinions, to say what was not understood and to make their opinion count. *Student Rules Orientation* refers to the extent to which students respect classroom roles and environment. *Students Cohesiveness* refers to the extent to which opportunities exist for students to feel at ease in class and with peers, and feel part of the group. *Student Social Support* refers to the extent to which opportunities exist for students to help classmates in distress, to integrate their classmates, and defend the weaker classmates. *Student Cooperation* refers to the extent to which students cooperate with each other during class and activities. Finally *Student Power Orientation* refers to the extent to which students want to assume positions of leadership, to rule over others, to seek the consent of the other.

The low moderate correlations among the ten factors of the PYC suggested that these factors tapped distinct aspects of the same construct. In addition, the magnitude and direction of the correlations were consistent with previous findings in the literature. For example, the moderate and positive correlation between Student Social Support and Student Loyalty, between Student Loyalty and Student Negotiation and between Student Social Support and Student Negotiation, highlighted that peers' behaviors and characteristics are satisfactory linked. In fact, several studies have shown that peers have a critical role in adolescents' school satisfaction and well-being (e.g., Ennett & Bauman, 1994) and that they represent significant reinforcement and models of behavior. In particular, adaptive behaviors are more likely to increase when there are many students who showed high levels of prosocial and agreeable traits such as sincerity and tolerance in the classroom (Eisenberg & Morris, 2004) and the support of

classmates has a direct effect on school satisfaction and scholastic competence, which in turn is directly related to life satisfaction (e.g., Danielsen et al., 2009).

Also the moderate correlation between teacher support and teacher equity, teacher equity and student assertiveness and teacher support and student assertiveness, are in accordance with the literature that underlines the strategic role that teachers' behaviors play in quality of living-together in the classroom. Previous studies have demonstrated that when teachers develop caring and close student-teacher relationships they contribute to the construction of a classroom climate that promotes wellness and, for example, the more teachers treat students equally, the more the students feel united and happy in class (Thorkildsen, Sodonis, & White-McNulty, 2004). In turn, an open and fair classroom climate is positively correlated with students' ability to think critically about social issues and display tolerance of diverse opinions (e.g., Berman, 1997). Torney-Purta and colleagues (2001) showed that teachers who exhibited democratic interaction styles (e.g., open communication, equal treatment of students), established expectations for student behavior, and modeled a caring attitude towards the students and their own work. By encouraging students to express their opinions and feelings about events in their lives and to actively participate in the world around them, teachers signal respect for people as human beings (Weithorn, 1998). In addition, the more students perceive their class as a place with a positive atmosphere the more they are satisfied with their classmates, teachers and their life. Regarding the second aim, we wanted to examine if the measure was invariant among grades. In the two samples the fit indices for the configural invariance models suggested that the same factor structure existed for 10th and 12th grades. The mean change in overall χ^2 between configural invariance model and the metric invariance model was nonsignificant in both samples. Moreover, no grade difference was found in the two samples of 10th and 12th grades at metric and then at the intercept level for the PYC. Thus the measurement invariance across the two grades was entirely supported at the factorial structure and at the pattern level

and provides empirical evidence that the fundamental meaning of the constructs has not changed across the different grades.

The cross-sectional nature of the present research does not allow inferences in regard to the stability of the fundamental meaning of the construct across the age. But, with due care and caution, the results from the measurement data on different classes and then on different age groups of students may form an initial basis for checking the stability of the measure in the different age groups through future longitudinal studies.

To our knowledge, no studies in the assessment of classroom climate have yet analyzed all the dimensions in one instrument as we have done with the PYC. Moreover, although the ten PYC dimensions are common in the literature of classroom climate, their combination into a single instrument is unique. Hence, our results, demonstrating good psychometric properties and structural invariance of the PYC and thus a good generalizability of this instrument, are a loud reinforcement for the validity of the “living-together” construct in scholastic organizations and in measuring how young people perceive life-together particularly in the classroom.

These results are important to both researchers and educators, to the relationship between the several dimensions of PYC and to student school satisfaction. The initial findings underline a link among the dimensions of “living-together” in the classroom and student well-being and also the central and responsible role that teachers play in building respectful and caring places (Ware, 2006), that could be better investigated in future research. So, effective teachers must be able to create a classroom context that motivates students to develop cooperation, support, cohesiveness, loyalty and respect for each other and they must be able to understand the effects of their behaviors on students’ learning and well-being. Moreover, teachers should be able to constantly monitor and maintain an effective network of class group relationships, as well as be particularly attentive to relationships with students.

The results of this study are encouraging in that they support the idea that quality of environment and positive “living together” in the classroom are protective and promoting factors of health and therefore of students’ academic and personal success. In this way, future preventive and promotional interventions could be designed using the strength of the relationships between the examined dimensions in this study in order to create an environment where there is good teacher support and clear fairness and equity to the students. Specifically, interventions should be designed to develop individual and collective behaviors that in turn facilitate and promote positive social life and individual well-being.

Limitations, future directions and strength

The study has some limitations. First, although the sample was large it was not nationally representative, nevertheless, the advantage of a large data set provides valuable information on high school students’ perceptions of occurrences in classrooms that influences their well-being. Secondly, the study was limited to self-report measures. To surmount some of the disadvantages of self-report procedures the measures were reserved private in order to reduce responding in a socially desirable way.

In addition, in this project it was not possible use other existing measures to further validate our instrument and to assess the convergent and discriminant properties of PYC, as recommended by Barbaranelli and Natali (2005). In future research it “would be desirable to rely upon multiple methods and informants across situations to minimize bias due to self-report” (Caprara, Alessandri, Di Giunta, Panerai, & Eisenberg, 2010, p.85).

Finally, the cross-sectional nature of this study did not allow for analysis of the longitudinal factorial invariance, which constitutes a requisite to modeling change over time, and would provide empirical evidence that the fundamental meaning of the construct has not changed across the different developmental periods (Vanderberg & Lance, 2000).

The strength of the present study was that we used several social and psychological variables associated with students' outcomes that seemed appropriate and meaningful for use in the high school classroom, and that are recurring in the classroom climate literature. Results of this research provide evidence that PYC is appropriate for obtaining perceptions of "living-together" in the classroom from high school students. In the future, it could be interesting to analyze the structure of the same measure with elementary and middle school students. As many authors point out in the literature (see Rowe et al., 2010, for a review), there is a development of interest for the importance of these dimensions and their influence on important student outcomes.

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Appendix 1

PYC - “How Do You Perceive Your Class” Items

Think about your class, yourself and your classmates ... how often do these things happen?

Scale anchors

from 1 = *never* to 4 = *often*

1. 57_Feeling good in clas
 2. 58_Having a good relationship with classmates
 3. 59_Feeling part of the class
 4. 60_Meeting with classmates also out of school
 5. 61_Having an understanding of the teachers
 6. 62_Considering the teachers as a reference point
 7. 63_Having a good relationship with teachers
 8. 64_Being able to ask teachers for help in cases of difficulty
 9. 65_Respecting discipline in the classroom
 10. 66_Caring for the classroom and school equipment
 11. 67_Knowing and abiding by the school rules
 12. 68_Being on time for lessons
 13. 69_Everyone being treated equally
 14. 70_Receiving fair evaluations
 15. 71_Everyone receiving the same attention from the teachers
 16. 72_Knowing the criteria that teachers use to give marks/grades
 17. 73_Feeling free to say what you haven't understood
 18. 74_Students being able to freely express their own ideas
 19. 75_Allowing everyone to express their views
 20. 76_Students making their own views count
 21. 7_Groupwork in class
 22. 78_Cultivating common interests in class
 23. 79_Students making their own study materials (notes, research, etc..) available to classmates
 24. 80_Helping out in class activities
 25. 81_Keeping a secret
 26. 82_Keeping a promise/commitment
 27. 83_Being honest
 28. 84_Being fair
 29. 85_Helping a friend through a difficult time (at school and/or family)
 30. 86_Helping the shy classmates to integrate
 31. 87_Defending a weaker classmate
 32. 88_Helping a friend in classroom activities
 33. 89_Tending to bully others with their behavior
 34. 90_Wanting to become a leader
 35. 91_Seeking the consensus of others
 36. 92_Tending to bully others with their behavior
 37. 93_Searching for a point of agreement during discussions
 38. 94_Welcoming new ideas from all group members
 39. 95_Making friends with people from environments different from their own
 40. 96_Meeting halfway on different points of view
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CHAPTER III

Pattern Analysis of Students' Styles of Living- Together in the Classroom

Pattern Analysis of Students' Styles of Living-Together in the Classroom

Introduction

Numerous cross-sectional and longitudinal studies have shown the classroom as a social place that has a pivotal role in many spheres of adolescents' lives, and in facilitating or inhibiting the development of their social competence (e.g., Vieno, Santinello, Pastore, Perkins, 2007). Furthermore, as decades of research in educational settings have stressed, adolescent adjustment, motivation and engagement are related to the nature of the context that young people experience (Anderman & Maecher, 1994; Eccles & Midgley, 1989). In this sense, in scholastic social organization and in particular in the classroom, students have the opportunity to experiment and create models of social relationships and living-together that can help them to build their future and to become responsible and engaged members of their community (Cohen, 2006).

In analyzing how people experience lives with others in a common place for a certain period of time, Avallone and colleagues (2007) introduced the construct of "living-together". By examining the various ways in which people relate to each other in the several contexts in which they spend much of their time, the authors identified 10 areas regarding respect of rules and norms, sense of confidence in people, tolerance and acceptance of diversity, collaboration and cooperation, equity, support and solidarity, a sense of protection and secure environment, care for others and effective communication, power relations, investment of energy and involvement (Avallone, Farnese, Pepe, & Paplomatas, 2007). As pertain the classroom context, these areas refer to different behaviors and characteristics of students and teachers: students' loyalty, support, negotiation, cooperation, cohesion, assertiveness, respect for the rules and power orientation and teachers' behavioral of equity and support, that define the relationships

that they establish with each other and that influence the student's perception of what happens in class. (see also Chapter II)

In educational research, several combinations of dimensions, which are similar to areas mentioned above, have been labelled as classroom climate (e.g., Fraser, 1994). Accordingly the current study will make reference to the classroom climate. Traditionally, classroom climate has been commonly described as the emotional and relational characteristics or the mood or social atmosphere (Johnson & McClure, 2004) that is created in the classroom by the school, teachers, and peers, through the rules sated out, the way of interaction among teachers and pupils and the way the physical environment is set out (Creemers & Reezigt, 1999; Freiberg & Stein, 1999; Fraser, 1994). Moreover, the classroom climate is frequently considered also as a function of students' characteristics, behaviours and perceptions. Based on these consideration, if teachers want to create an environment that promotes success and student satisfaction, it is important that they know "who" the students that live-together in the classroom are, and that their behavior, characteristics and perceptions of what happens in class contribute to create the "living-together".

Because different types of students who are characterized by various personal characteristics and different ways of relating with their classmates and teachers might exist, the general purpose of this study was to examine how high school students' perceptions of "living-together" dimensions (that regard loyalty, social support, negotiation, cooperation and cohesiveness among students, student rules and student power orientation, student assertiveness, teacher equity and teacher support) and other students' characteristics and values (satisfaction with school and life, students' internal locus of control and student universalism, power and self-direction values), combine with each other to configure homogeneous profiles of high school students' *styles of living-together in the classroom*.

To our knowledge, not previously studies have done this. Instead, there are a lot of researches that used classroom learning environmental factors and student characteristics and behaviors related to, to identified homogeneous clusters of students (Damon, 2008; Linnakya & Malin, 2008; Mahoney, Stattin, Magnusson, 2001; Tapola & Niemivirta, 2008). The dimensions that referred these researches are very similar to “living-together” dimensions used in our studies to identify and interpret clusters of high students’ *styles of living-together* in the classroom.

Students’ Characteristics and Behaviors and Teachers’ Behaviors

The protective and adaptive role of positive peer relationships have been shown across many areas of psychology (Daukantaite & Bergman, 2005; Peterson & Seligman, 1984; Reis & Collins, 2004). Especially in early adolescence, when youth are more capable of considering others’ perspectives, to reflect, produce ideas and evaluate alternatives, peers serve as a significance reinforces and models of behavior. Many studies indicate that a stable group of prosocial peers who provide support and protection (Bukowski & Sippola, 2001; Schwartz, 1999) and with whom youths have possibility to affiliate, gain a feeling of cohesion (Roseth, Johnson, & Johnson, 2008) and have social learning experiences, reduces risks of social, emotional, or behavioral problems and enhances students’ developmental outcomes (Brody, Murry, Chen, Kogan, & Brown, 2006). Group cohesiveness is related to cooperation and competition, and it increases when there are cooperative conditions and decreases when there are competitive conditions (Phillips, 1956). Thus, it appears important to promote positive relationships between students in the classroom, which are also associated with school solidarity and loyalty, and which refer to how students perceive their classroom as a place where students usually show a shared sense of pride and concern for one another (Syvertsen, Flanagan, & Stout, 2009).

The importance of teachers' characteristics and behaviors in creating environments of student success and satisfaction is unquestionable (see Rowe, Kim, Baker, Kamphaus, & Horne, 2010). As decades of research in educational settings have underlined, classroom climate is often seen as a function of the teachers who teach in a classroom (e.g., Marsh, Martin, & Cheng, 2008). Young people's perception of being in a class where teachers support and encourage the students and where classmates are supportive and cooperative, have an important role in students' positive behavior and cognitive development (Ryan & Patrick, 2001). By building a culture of sensitive and responsive interactions, teachers give students the chance to be part of a school community and to avail pedagogical approaches that promote cooperation and fellowship (Danielsen, Samdal, Hetland, & Wold, 2009). Teachers' engagement to promote affective disciplinary climate (Murphy, Weil, Hallinger, & Mitman, 1985), stimulates students to share their ideas and to perceive fairness and equity (Syvertsen et al., 2009), which are strong mediators among belief in a just world, school grades and well-being, as a person who is high in feelings of fairness can reduce negative feelings. Indeed, the fairness, the regulations and framework for the activities in the classroom and the amount in which students can participate in development and interpretation of those regulations, influence their adjustment to the school and classroom environment and define the kind of feelings about school and classroom (Samdal, Nutbeam, Wold, & Kannas, 1998). Moreover, if students feel they are included in a classroom group in which they are cared for, giving and receiving positive responses or task (Danielsen et al., 2009), they can share cognitive and emotive experiences and are encouraged to express themselves and to dialogue and cooperate. In this way, feelings of belonging are encouraged (Osterman, 2000) and a number of negative and conflictual experiences are reduced and this, in turn, increases students' perception of satisfaction for their school life (DeSantis King, Huebner, Suldo, & Valois, 2006).

Students' Satisfaction with Life and School and Students' Values

As mentioned above, peer support and high levels of social bonding to prosocial groups and activities can influence students' satisfaction of their class, school and global life (Danielsen et al., 2009). Several studies have showed links between students' happiness with their schooling (i.e., school satisfaction) and their global life satisfaction (e.g., Natvig, Albrektsen, & Qvarnstrom, 2003; Suldo, Shaffer, & Riley, 2008). For example, in elementary school, Elias and Haynes (2008), have documented the protective nature of high life satisfaction (Huebner, Suldo, Smith, & McKnight, 2004), analyzing the differences between more satisfied and less satisfied students of school life, finding that those who were more satisfied with school tended to have more caring teacher-student relationships and more help from teachers and peers, compared to others who were less satisfied with school. Good and Weinstein (1986) have found that schools in which its components feel a sense of effectiveness and satisfaction, generate a sense of shared values and culture. Moreover, several studies show direct correlation between students' perceptions of the democratic classroom climate, civic values and social responsibility (Flanagan, Bowes, Jonson, Csapo, & Sheblanova, 1998; Syvertsen et al., 2009).

For a long time psychological and sociological researchers have emphasized the importance of adolescents' social values (Allen, Weissberg, & Hawkins, 1989) considering values like a crucial determinant of motivation for a range of behaviors (Rokeach, 1968) and especially relevant to adolescent social behaviors (Cohen, 2006). Several studies (e.g., Allen, et al., 1989) have showed that adolescent values are important in understanding the multiple aspects of adolescents' social competence, because they are associated with to social competences from multiple perspectives. Additionally, "there are significant differences between the values of adolescents that relate to competence with peers and those that relate to competence as judged by teachers" (Allen et al., 1989, p,463). Moreover Allen and colleagues

argued that the at-odds rapport between adolescent values and social competence with adults and peers sustains the concept that the process of achieving autonomy from adult rules while maintaining communicative relationships with both adults and peers, is an important developmental undertaking of adolescence (Allen et al., 1989).

The Present Study

In our study we considered individuals who "live-together" in class as an integrated "whole", i.e. who relate to each other and to the teacher, creating a "whole" that is the class and therefore may be recognized within groups that have particular and homogeneous profiles (e.g., Janson & Mathiesen, 2008). The framework for this perspective is offered by a "person-oriented approach" or a "modern typological approach" developed by Magnusson and colleagues, and which substantiates a "holistic-interactionistic" perspective in which the individual is viewed as an integrated psychological, biological, and social organism and as the "organizing principle" for scientific inquiry (Bergman & Magnusson, 1997; Magnusson, 2001; Magnusson & Cairns, 1996). David Magnusson and coworkers, as well as Bergman and collaborators, have substantiated with theoretical and empirical evidence the need to study people as functioning wholes (e.g., Janson & Mathiesen, 2008) and to consider development in terms of holistic configuration or profiles, in which measurements take on meaning only in the context of the individual's whole pattern of variables or characteristics (e.g., Magnusson & Cairns, 1996). Following this theoretical approach we used cluster analysis methods (Bergman & El-Khoury, 2001). This technique is suitable to identify homogeneous configurations of students on the basis of similarities among individuals' profiles of values on the dimensions that we deemed relevant for understanding "who are" and "how are" class students, in particular to help teachers that want to build a learning environment that promotes a positive quality of classroom life.

Thus, the primary aim of this study was to identify homogeneous students' *styles of living-together in the classroom* clusters of high school students through the clustering of four dimensions: *student loyalty*, *student rules orientation*, *student social support* and *student negotiation*. We chose these dimensions because they are representative of the characteristics and relational behaviors of students that make up their perception of living-together in the classroom.

A second aim of the study was to confirm the choice of cluster solution and fully describe the clusters identified. We did this by analyzing the relationships among the identified clusters and some dimensions that we chose as test variables, which refer to students' relationships with teachers (*teacher equity*, *teacher support* and *student teacher satisfaction*), students' relationships with classmates (*student cohesiveness*, *student cooperation*, *student social support* and *student classmate satisfaction*), students' characteristics and satisfaction (*student assertiveness*, *student power orientation*, *student satisfaction with studies* and *with life*), student values (*universalism*, *power*, *self-direction*) and *student internal locus of control*. We also included the four variables that we used for identified configurations. Moreover, we fully described the clusters identified through the difference in group membership among male and female, between belonging to groups' participating in voluntary activities or not and between belonging a stable group of friends or not.

Hypothesis

Regarding the first aim, we expected to find different configurations in the classroom climate dimensions, which referred to the students' perception of support, negotiation and loyalty among classmates, and to the students' perception of rules orientation of peers in class.

As pertain the second aim we expected that the relationships among test variables and identified clusters would confirm the structure of the patterns. In particular, we expected to find

differences between clusters on dimensions that referred to students' relationship with teachers, students' relationship with classmates, students' characteristics and satisfaction and student values. Moreover we expected to find differences between male or female, between belonging or not belonging to a volunteering association and between being or not being part of a stable group of friends. In particular:

- based on previous research on gender differences in perception of classroom climate (Waxman & Huang, 1998), we expected that males would be less included in groups in which there was a more positive view of what happens in the classroom and in which there was greater satisfaction for both teachers and classmates. We expected females on the other hand, to be more included in groups in which there was higher satisfaction for both teachers and classmates;
- in addition, we expected students who participated in voluntary activities and belonged to a stable group of friends (Youniss & Hart, 2005) to be more included in groups who are more prosocial and in which students had a greater sense of well-being. In fact, as several studies have shown, high school activity participation predicts a higher likelihood of college attendance, more favorable mental health and increased civic engagement (Mahoney et al., 2003). Extracurricular involvement is associated with lower dropout rates and reduction of problem behavior in areas such as delinquency and substance use (Youniss, McLellan, Su, & Yates, 1999).

Method

Participants

The sample is the same as that in Chapters I and III. The participants were part of a national project of the Italian Ministry of Education. About 300 Italian secondary schools with a total of 4,094 students, attending both 2nd and 5th grade, participated in the study. To indicate

the grades attended by our sample we used USA high school labels (10th and 12th) that corresponding at 2nd and 5th grades of Italian secondary school (5th grade of secondary school in Italy and 12th grades of high school in USA are both the last years of high school in the two countries). The mean age of students was 16.7 years (SD = 1.7) (45% male). Twenty-eight percent of students lived in North-East regions of Italy, 23% in the North-West, 18% in the Center, 18% in South, and 12% lived on the islands (Sicily and Sardinia). The families' profile matches the national profile with regard to the families' socio-economic characteristics. Most young people were from intact families (79%), had Italian parents (89%) and had almost one parent with a high school education (43%).

Procedures

A stringent consent procedure for the study was followed, including parental consent, approval from school councils and the freedom of the students to reject participation if they chose to do so. All students were assured of the confidentiality of their responses and that participation was voluntary. Parents were informed and teachers supervised the completion of the questionnaires by the students in their classroom. The measures used in this report were part of a high school student questionnaire administered to the participants. (see also Chapter I)

Measures

Measures considered here were based on responses to PYC (*How Do You Perceive Your Class?*). (see also Chapters I and III)

How Do You Perceive Your Class? (PYC). A new instrument designed for investigating how high students' living-together in the classroom was used (Avallone, 2007 – Research for Ministry of Education and “Sapienza” University - Rome). PYC was developed in a “class form” rather than in a personal form, to assess students' perceptions of their class as a “whole”

(e.g., Sinclair & Fraser, 2002), that is as a place in which the perceptions of the students' and teachers' individual characteristics ("who we are") and behaviors ("what students and teachers do"), define "how I feel". Specifically the sense of "who we are" guides the relationships and behaviors in classroom and influences students' feelings about teachers, classmates and themselves. Exploratory Factor Analysis (EFA) on 10th grade students and Confirmatory Factor Analyses (CFA) on 12th grade students and complete grade invariance, showed an acceptable ten dimensional factorial structure of the PYC (see also Chapter II). The ten dimensions refer to the students' perceptions of how teachers interact with and treat students (*teacher support, teacher equity*), the perceptions of classmates personal dimensions (*student loyalty, student power orientation, student negotiation*), and behaviors of students in classroom (*student rules orientation, student assertiveness, student cohesiveness, student social support, student cooperation*).

The questionnaire consists of 40 items (35 after EFA and CFA) grouped in the 10 indicated dimensions. For each item students were asked to "Think about their class, about themselves and their classmates and to report how frequently a specific situation happens" using a 4-point Likert scale (from 1 = *never* to 4 = *often*). As mentioned above, the dimensions of the PYC correspond to 10 dimensions that had been found in a qualitative study in which Avallone and colleagues (2007) explored themes of living-together in several contexts (affective, social and organisational).

Values. Students' values were assessed by a scale that includes 13 items and measures how much importance is given by students to values such as social justice and environmental protection, success and personal power, personal skills and interest in what happens in the world. For each item, students indicated how they considered the described important values using a 10-point Likert scale (from 1= *not at all important* to 10 = *very important*). In this study

Students' satisfaction and students' locus of internal control. Satisfaction was measured by four items that regard *student classmate satisfaction, student teacher satisfaction, student study satisfaction* and *student life satisfaction*. Participants reported how satisfied they are with classmates, teachers, their own study and life using a 10-point Likert scale (from 1= *not at all important* to 10 = *very important*). In regard to *students' internal locus of control* participants reported how much they think they are able to influence events in their own life using a 10-point Likert scale (from 1= *not at all important* to 10 = *very important*).

Participate in voluntary activities and belonging to a stable group of friends. These variables were measured by asking students if they participated or not in voluntary activities and if they have or not a stable group of peers.

Analytical Approach

Preliminary Analysis

As a preliminary analysis, we first examined the factorial structure of the values scale by using an exploratory factor analysis (EFA) approach. Next we performed a confirmatory factor analysis (CFA) as a test of replicability of the factor model (Bollen, 1989; Thompson, 1994). EFA and CFA were performed using Maximum Likelihood parameter estimates and using MPlus 5.1 (Muthén & Muthén, 1998-2007). In Exploratory factor analyses Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity were used to assess the appropriateness of the correlation matrices to factor analysis. After having ascertained the suitability of the correlation matrices to factor analysis we selected the number of factors based on the hypotheses that refers to theoretical framework (Schwartz, 1999) and the results of scree-plot, and considering the Standardized Root Mean Square Residual (SRMR) and the Root Mean Square Error of Approximation (RMSEA) as indices of goodness of fit. Promax oblique rotations were applied to unrotated matrices. Promax rotation is a procedure normally used when factors are expected to correlate and be non-orthogonal (Gorsuch, 1983). The cut-offs and adequate values for the

other fit indices used in this study are as follows: $>.95$ for the CFI, $<.06$ for the RMSEA, and $<.08$ for the SRMR (Hu & Bentler, 1998).

Cluster Analysis

How mentioned above, to investigate the students' *styles of living-together in the classroom*, we referred to a person-oriented approach and applied clustering analysis techniques (e.g., Bergman & Magnusson, 1997; Magnusson, 2001; Magnusson & Cairns, 1996; Zarrett, Fay, Li, Carrano, Phelps, & Lerner, 2009). In this approach subjects are grouped together considering similarities in the profiles (Bergman, 1988). The cluster analysis of dimensions that we selected following our hypothesis was performed with the SLEIPNER 2.1 statistical program (Bergman & El-Khoury, 2002). We proceeded in several steps and used a combination of hierarchical and nonhierarchical clustering methods (Gore, 2000; Tan & Kumar, 2006). Before clustering, several modules of SLEIPNER 2.1 were used to strengthen the quality of our data.

Missing-data handling. We chose to perform analyses based on participants with valid data. Consistent with common practice in person-oriented analyses that do not adjust for missing values (Bergman, Magnusson, & El-Khoury, 2003) subjects with too many missing values (more than 3) or without an identified close neighbor were excluded from the analysis. With Sleipner's Residue, which uses the same close neighbor approach as the impute module to identify multidimensional outliers, residual objects were identified and a new data file from which residual objects have been removed was created (Bergman, 1988). Variables included in Cluster analysis were imputed for 4,094 cases. Across these procedures 540 non valid cases and 1 residue case were identified and excluded from analysis. Thus, the final sample size was 3,553 (86.8%).

For the first step of Cluster Analysis, we used Ward's algorithm method to perform a preliminary cluster classification. This method is an iterative and agglomerative hierarchical procedure that uses the squared Euclidean distance to identify the similarity between subjects' profiles on the factors. The Ward's algorithm joins the cluster and, in this fusion process, minimizes an increase in the within-cluster or error sum of square (ESS) while maximizing the between-cluster sum of squares (Keltikangas-Järvinen, Ravaja, & Viikari, 1999). Error sum of squares values are also defined *fusion coefficients* and it is the sum of squared differences between individual values on the cluster variables and the means of these variables within each cluster (i.e., the centroid), summed across all clusters (Zarrett et al., 2009). Across this process individuals that have similar values and patterns are grouped together. Iterations proceeded until the cluster solution was stable, as long as a new iteration did not produce a significant ESS reduction. In our study we conducted Ward's method hierarchical analysis with four PYC's dimensions: *student loyalty*, *student negotiation*, *student rules orientation*, *student social support*. We have already said that we have chosen these dimensions because they are representative of the characteristics and relational behaviors of students that make up their perception of living-together in the classroom.

A critical point for the researcher in cluster analysis is the choice of the number of clusters, because there are no specific and valid criteria for all situations. In our study we followed several guidelines: a) the accepted solution has to be meaningful and the last cluster fusion judged not to obliterate two distinct and theoretically interpretable clusters, b) change in the ESS values between adjacent cluster solutions, c) whether the cluster homogeneity coefficients are sufficiently low (lower values indicate greater homogeneity and high values indicate little homogeneity). Homogeneity coefficient should be quite low. Bergman and colleagues (2003) have suggested a limit, as desirable, 50 (for the T metric), d) theoretical meaningfulness of the profile pattern.

We used the scree-type plot, a type of visual aid, to help in determining the appropriate number of meaningful clusters represented in the data. On the basis of providing more or less unique information moving from lower to higher numbers of cluster groups, we have identify the number of cluster groups per solution that can be statistically justified. In the second step, after a preliminary number of best cluster choice, the subjects were relocated to the clusters by using a nonhierarchical k-means cluster procedure that reduces total ESS of the cluster solution, excludes outliers, produces more homogeneous clusters and further improves the preliminary cluster solution through an iterative process (Bergman & El-Khoury, 2001).

ANOVAs and Chi-squared Analysis

ANOVAs were then carried out in order to confirm the choice of the final cluster solution and to understand more fully the nature of the cluster. After standardization we used *student loyalty, student negotiation, student rules orientation, student social support, teacher support, teacher equity, student power orientation, student cohesiveness, student assertiveness, student cooperation, universalism, power, self-direction, student satisfaction with classmates, student satisfaction with teachers, student satisfaction with studies, student satisfaction with life, and student internal locus of control* as dependent variables and *cluster groups* as the independent variable. Moreover, we carried out Chi-squared analysis between *cluster groups* and *gender, cluster groups* and *participating in voluntary activities*, and *cluster groups* and *belonging to a stable group of friends* in order to better define the final cluster solution profiles.

Results

Descriptive Data

Table 1 contains the means, the standard deviation and correlations of clustering variables and test variables that were used to more fully understand the nature of the cluster.

Multicollinearity between variables may impact on the cluster analysis by giving more weight to collinear variables. Given that no Bravais-Pearson correlation coefficient was higher than .90, we considered that there was no problem of this kind (Hair, Anderson, Tatham, and Black, 1998).

Preliminary Analysis: Exploratory and Confirmatory Factorial Analysis

To examine the factor structure of values scale we first performed Exploratory Factors Analysis (EFA). The factor solution obtained showed, as hypothesized, three factors. The resulting three-factor model was supported by the fit index ($\chi^2(42) = 577.767$; $p < .000$; RMSEA = .06; CFI = .97; SRMR = .02). Table 2 shows the standardized factor patterns coefficient for each item.

After having ascertained the dimensionality of our values scale we performed confirmatory factor analysis (CFA) as a test of replicability of the factor model. Results of this analysis confirmed the model. CFA fit the data ($\chi^2(58) = 526.346$; $p < .000$; RMSEA = .05; CFI = .95; SRMR = .05). Correlations among the factors were calculated and ranged from .14 (correlation power and self-direction) to .37 (universalism and self-direction). All the factor loadings of the items were significant and higher than $|.40|$ and ranged from .42 to .82. The internal consistency estimates of the factor scores, as measured by Cronbach's alpha, were adequate and ranged from .73 to .84.

Table 1. Mean and Standard Deviation for High School Italian Students together with Correlations between Measured Variables

	Medie	DS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 St Loyalty	2,93	0,74	1.00																	
2 Tea Support	2,51	0,67	.206**	1.00																
3 St Assertiveness	2,92	0,66	.296**	.417**	1.00															
4 St Rule Or	2,97	0,65	.262**	.330**	.197**	1.00														
5 St Cohesiveness	2,93	0,59	.369**	.147**	.259**	.088**	1.00													
6 Tea Equity	2,52	0,71	.254**	.533**	.489**	.308**	.203**	1.00												
7 St Support	2,85	0,70	.502**	.244**	.300**	.229**	.309**	.223**	1.00											
8 St Power Or	2,30	0,66	.092**	.082**	<i>0.03</i>	.058**	.045**	<i>0.03</i>	-.039*	1.00										
9 St Negotiation	2,75	0,63	.422**	.289**	.339**	.286**	.344**	.319**	.413**	.037*	1.00									
10 St Cooperation	2,93	0,71	.351**	.239**	.285**	.238**	.366**	.249**	.365**	<i>0.03</i>	.369**	1.00								
11 Universalism	8,57	1,30	.124**	.201**	.135**	.277**	.052**	.113**	.212**	-.03	.244**	.171**	1.00							
12 Power	6,07	2,31	.044**	.072**	-.01	.146**	.059**	.051**	.097**	.260**	.090**	.093**	.223**	1.00						
13 Self-Direction	8,11	1,52	.089**	.237**	.118**	.248**	.049**	.114**	.144**	.084**	.159**	.137**	.367**	.135**	1.00					
14 St Study Sat	6,95	2,08	.166**	.403**	.245**	.297**	.165**	.309**	.166**	.049**	.226**	.196**	.226**	-.03	.283**	1.00				
15 St Classmates Sat	6,88	2,36	.327**	.103**	.198**	.062**	.646**	.217**	.257**	-.01	.278**	.318**	.054**	.048**	<i>0.02</i>	.206**	1.00			
16 St Teacher Sat	6,32	2,16	.185**	.606**	.303**	.261**	.194**	.437**	.161**	<i>0.03</i>	.211**	.218**	.200**	-.069**	.208**	.506**	.266**	1.00		
17 St Life Sat	7,51	1,99	.132**	.200**	.180**	.094**	.222**	.180**	.119**	<i>0.01</i>	.130**	.103**	.105**	.085**	.119**	.280**	.229**	.225**	1.00	
19 St Int Locus Contr	7,08	1,90	.096**	.113**	.140**	.084**	.188**	.058**	.076**	.103**	.107**	.122**	.106**	.138**	.211**	.177**	.119**	.132**	.308**	1.00

Note: St = Student; Tea = Teacher; St Rule Or = Student Rule Orientation; St Power Or = Student Power Orientation; St Study Sat = Student Satisfaction with Studies; St Classmates Sat = Student Satisfaction with Classmates; St Teacher Sat = Student Satisfaction with Teachers; St Life Sat = Student Satisfaction with Life; St Int Locus Contr = Student Internal Locus of Control.

The italic values are not significant, * $p < .05$, (two tailed). ** $p < .01$ (two tailed).

Table 2. Results of Exploratory Factor Analysis of Values

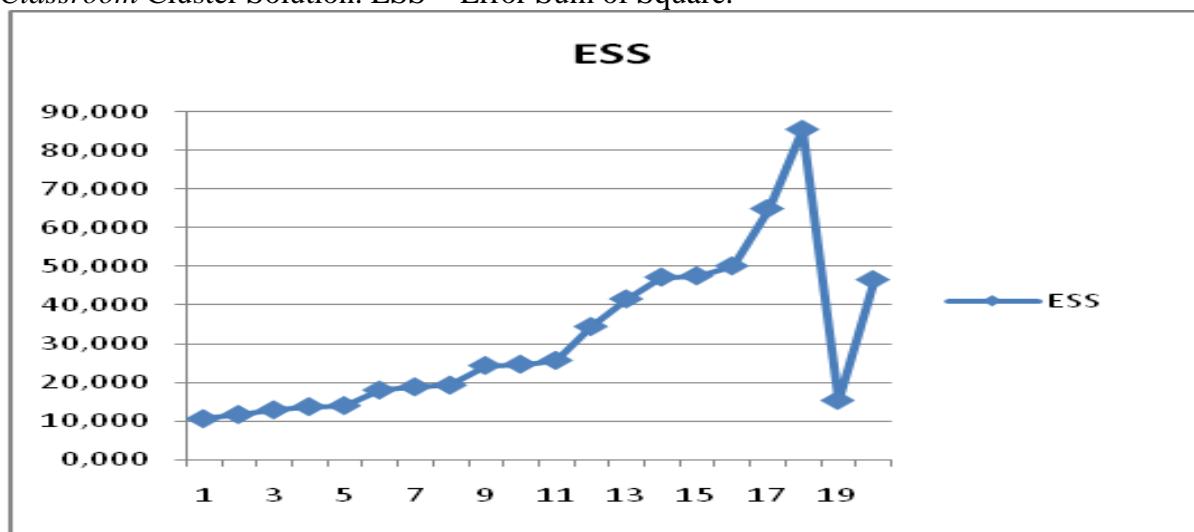
	Universalism	Power	Self-Direction
36 World peace	.796	.005	-.044
37 The brotherhood (the union between people)	.822	.017	-.013
38 Support for disadvantaged and needy	.771	-.035	-.003
39 Tolerance	.566	-.026	.032
40 Respect for human rights	.614	-.009	.152
41 Justice in society	.390	.059	.230
42 Environmental protection	.426	.001	.219
43 Power and being important	-.049	.731	-.003
44 Success	.079	.759	-.003
45 Money and owning things	-.014	.759	-.003
46 Knowing how to speak and express oneself more	.001	.261	.617
47 Keeping informed about what happens in the world	-.019	.014	.776
48 Studying and being educated	.112	-.030	.619

Cluster Analysis

Cluster formations. For the present study we used cluster analysis technique to classify students on the basis of their perceptions of representative classmates' characteristics and behaviors that composed classroom climate: student loyalty, student negotiation, student rules orientation and student social support.

Figures 1 and 2 show change in error sum of square (ESS) and change in explained

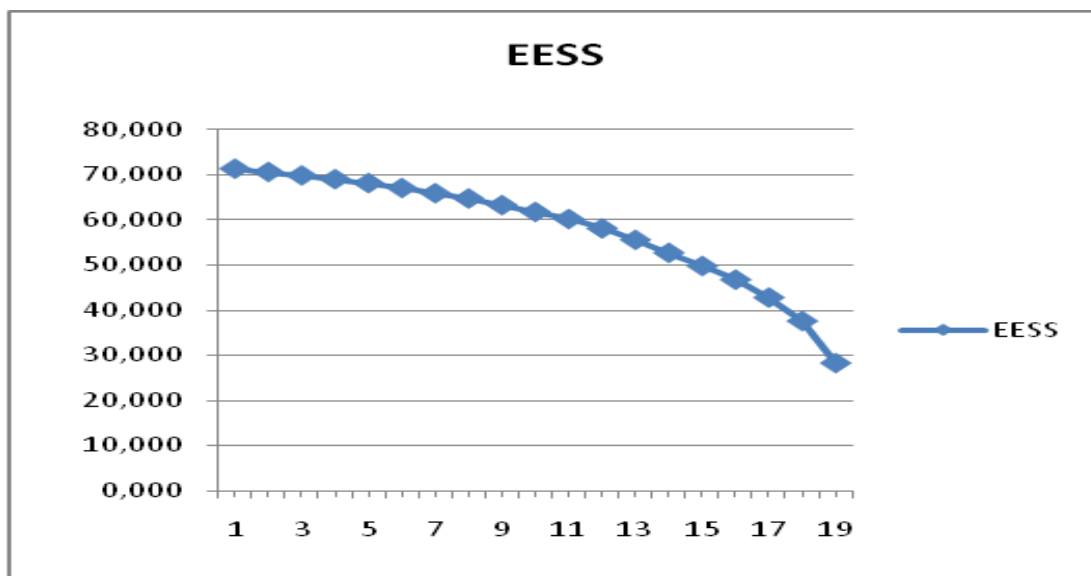
Figure 1 Increase Error of Sum of Square Plot for Students' Styles of Living-Together in the Classroom Cluster Solution. ESS = Error Sum of Square.



error sum of square (EESS) respectively.

Scree-type plot analysis revealed three major gaps that indicated three (ESS = 85.40%, EESS = 38%), four (ESS = 64.91, EESS = 43%) and five (ESS = 50.08, EESS = 47%) cluster solutions. As the three cluster solution EESS was too low, a decision was made between four and five cluster solutions.

Figure 2 Explained Error of Sum of Square Plot for Students' *Styles of Living-Together in the Classroom* Cluster Solution. EESS = Error Sum of Square.

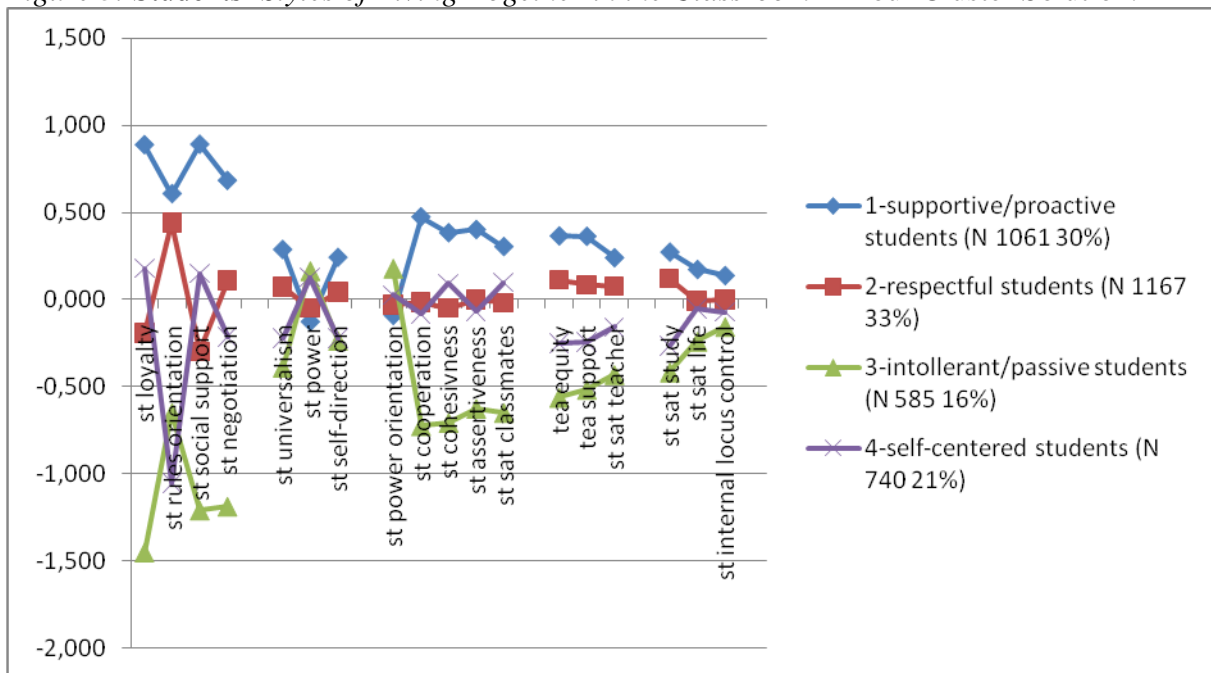


After relocating, the four cluster solution showed EESS = 50% and the five cluster solution EESS = 54%. The analysis of variance that examined independent variables scores for the four-cluster and for the five-cluster solutions showed a significant effect of cluster membership on each dimension (the values of F and p are indicated in Table 3 and 4).

Post-hoc comparisons (Tukey's honestly significant difference) revealed that both in four and five cluster solutions, the groups are significantly distinct. However, as shown in Figures 3 and 4, and as reported in Tables 3 and 4, in the five cluster solution there are few significant differences between groups than in the four cluster solution. Specifically, the analysis of variance examining the four variables that we used to cluster the four cluster

solution, was statistically significant, and the groups were all significantly distinct. While, in five cluster solutions for student rules orientation, groups 2 and 1 are not significantly distinct ($p < .321$).

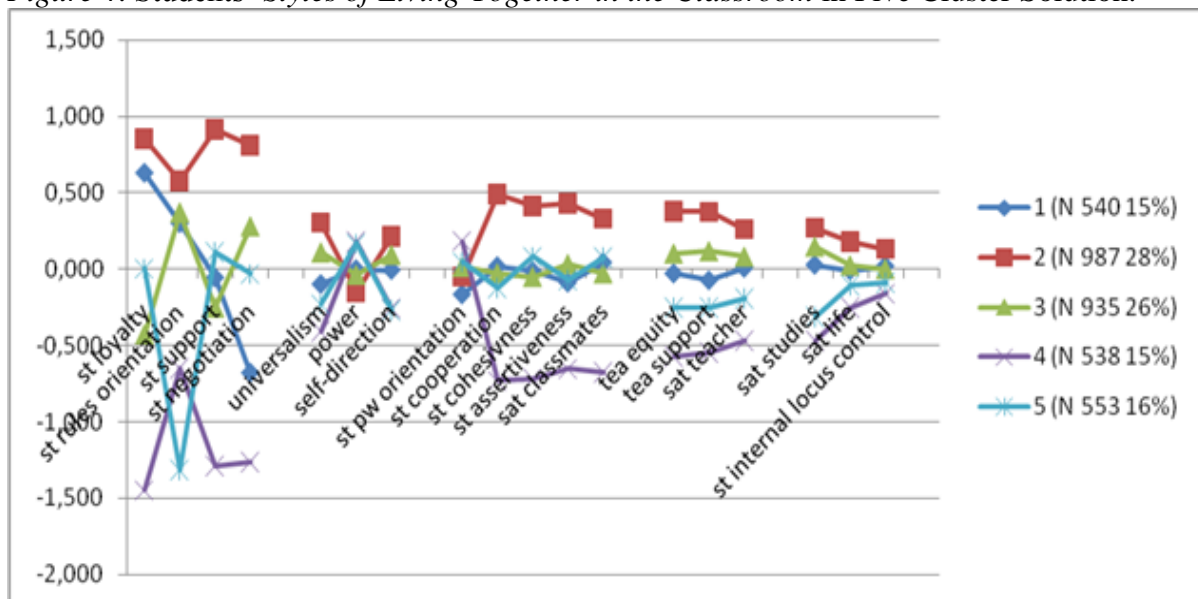
Figure 3. Students' Styles of Living-Together in the Classroom in Four Cluster Solution.



Note: st = student; sat = satisfaction; tea = teacher. St loyalty, st rule orientation, st social support, st negotiation are variables used in Cluster Analysis to identify the better cluster solution of Students' Styles of Living-Together in the Classroom. Other all are variables were used in ANOVAs Analysis to confirm the cluster solution and to interpret Students' Styles of Living-Together in the Classroom.

Moreover, the analysis of variance that examined all other test variables for the four cluster solution, indicated that the student universalism value, student classmate satisfaction, student cohesiveness, teacher equity, teacher support, student teacher satisfaction, student study satisfaction were statistically significantly (all cluster (cl) are significantly distinct) and that student power orientation (cl1, cl2 $p < .490$; cl1, cl4 $p < .070$; cl2, cl4 $p < .622$), student self-direction value (cl3, cl4 $p < .996$), student cooperation (cl3, cl4 $p < .408$), student power value (cl1, cl2 $p < .255$; cl2, cl4 $p < .907$), student assertiveness (cl2, cl4 $p < .473$), student life satisfaction (cl2, cl4 $p < .773$) and student internal locus of control (cl3, cl4 $p < .443$; cl2, cl4 $p < .443$), were not significantly distinct for some groups.

Figure 4. Students' Styles of Living-Together in the Classroom in Five Cluster Solution.



Note: st = student; sat = satisfaction; tea = teacher. St loyalty, st rule orientation, st social support, st negotiation are variables used in Cluster Analysis to identify the better cluster solution of Students' *Styles of Living-Together in the Classroom*. Other all are variables were used in ANOVAs Analysis to confirm the cluster solution and to interpret Students' of *Styles of Living-Together in the Classroom*. In legend there are not labeled of clusters because this solution was not choice and interpreted.

Regarding the five cluster solution, the analysis of variance examining all other test variables for the five cluster solution, indicated that only teacher support was statistically significant and distinct, and that the student universalism value (cl1, cl5 $p < .171$), student classmate satisfaction (cl1, cl3 $p < .646$; cl1, cl5 $p < .976$; cl3, cl5 $p < .241$), student cohesiveness (cl1, cl3 $p < .940$; cl1, cl5 $p < .442$; cl4, cl5 $p < .058$), teacher equity (cl1, cl3 $p < .074$), student teacher satisfaction (cl1, cl3 $p < .607$), student study satisfaction (cl1, cl3 $p < .138$), student power orientation (cl1, cl2 $p < .183$; cl2, cl3 $p < .606$; cl3, cl5 $p < .975$; cl4, cl5 $p < .149$; cl3, cl5 $p < .975$), student self-direction value (cl1, cl3 $p < .312$; cl4, cl5 $p < .999$), student cooperation (cl1, cl3 $p < .892$; cl1, cl5 $p < .086$), student power value (cl1, cl3 $p < .966$; cl3, cl2 $p < .099$; cl4, cl5 $p < 1.000$), student assertiveness (cl1, cl5 $p < .998$; cl1, cl3 $p < .103$; cl3, cl5 $p < .217$), student life satisfaction (cl5, cl3 $p < .963$; cl3, cl1 $p < .522$; cl5, cl4 $p < .094$; cl5, cl3 $p < .107$) and student internal locus of control (cl1, cl2 $p < .229$; cl1, cl3 p

$< .997$; $c15, c11 p < .427$; $c15, c13 p < .505$; $c15, c12 p < .738$), were not significantly distinct for some groups.

This comparison preferred the four clusters solution. In addition, in confirmation of our choice, all homogeneity coefficients of four cluster solution were below one ($c11 = .36$, $c12 = .40$, $c13 = .72$, $c14 = .51$) indicating that all clusters were reasonably homogenous. Thus, according to the criteria we considered in selecting the preferred solution, we chose the four cluster solution.

Cluster Description. On the basis of the four clusters solution cluster composition and the differences identified by the ANOVA, we defined the clusters. As is evident from Figure 3 the four clusters seem to be prospectively paired, because in the dimensions in which some are positive others are negative. In particular, the second and fourth clusters showed profiles in which students' perception of classroom life seem to exactly mirror, whereas, in the first and third cluster, students showed opposite profiles.

In the first cluster (Cluster 1) students predominantly showed an absolute positive vision of what happens in the classroom, that is, how classmates, teachers and themselves are, and what they do. For ease of presentation this group of youth is referred to as the “*supportive/proactive students*” ($n = 1061, 30\%$), although a brief one- or two-word label may not adequately capture the meaning of the whole profile. This profile had significantly higher scores on student negotiation and student rules orientation and much higher scores on student loyalty and student social support than did the other clusters.

This also applies to all other dimensions included in ANOVA analysis performed to better describe the clusters. There were no significant differences between this cluster and cluster 2 in regard to power, and among this cluster and clusters 3 and 4 in regard to student power orientation.

The students referred to by this pattern saw the classroom as a perfect place where everything functions, where there is a lot of respect and tolerance for the rules, and where support and loyalty among students prevails. These young people felt they could express themselves freely and that teachers were fair and supportive. Moreover, the classroom was perceived as a place in which students worked more with others, where they were happy to be and where there were not abuses of power. The students of this profile gave great prominence to values such as justice in society, environmental protection and studying and being educated, while they gave low attention to success and power. Finally they were satisfied with classmates, teachers, their own studies and life in general and were convinced that they could control their life.

In a mirror image of cluster 4, *second clusters* (Cluster 2) had a relatively flat profile. In particular, this profile labeled “*respectful students*” (n = 1167, 33%), had very high scores on student rules orientation and high scores on student negotiation ,but very low scores on student social support and low scores in student loyalty than in clusters 1 and 4. All other dimensions included in ANOVA analysis performed to better describe the clusters were different. There were no significant differences between this cluster and cluster 4 in regard to student cooperation, student assertiveness, student power value, student classmates satisfaction, student internal locus of control, and student life satisfaction, and among this cluster and clusters 1 and 4 in regard to student power orientation.

Table 3. Means and Standard Deviation for the Clustering Variables and Control Variables for Four Cluster Solution

	Cluster 1 (N = 1061 30%) "supportive/proactive students"		Cluster 2 (N = 1167 33%) "respectful students"		Cluster 3 (N = 585 16%) "intolerant/passive students"		Cluster 4 (N = 740 21%) "self-centered students"		F	p
	M	SD	M	SD	M	SD	M	SD		
1. student negotiation	0.68 ^o	0.77	0.11b	0.71	-1.18c	0.87	-0.21d	0.85	944.71	.000
2. student social support	0.89a	0.59	-0.30b	0.68	-1.21c	0.87	0.15d	0.73	900.66	.000
3. student rules orientation	0.61a	0.64	0.44b	0.57	-0.65c	1.08	-1.05d	0.71	802.38	.000
4. student loyalty	0.61 ^o	0.64	0.44b	0.57	-0.65c	1.08	-1.05d	0.71	1501.21	.000
5. student universalism value	0.28 ^o	0.78	0.07b	0.85	-0.39c	1.31	-0.22d	1.06	60.81	.000
6. student power value	-0.09b	1.01	-0.05b	0.93	0.17a	1.02	0.13a	1.05	10.20	.000
7. student self-direction value	0.24a	0.83	0.04b	0.90	-0.23c	1.20	-0.22c	1.08	33.94	.000
8. student cooperation	0.47 ^o	0.85	0.01b	0.83	-0.72c	1.09	-0.08b	0.99	157.51	.000
9. student power orientation	-0.09b	0.99	-0.03b	0.94	0.18a	1.16	0.03b	0.93	14.20	.000
10. teacher equity	0.36a	0.98	0.11b	0.90	-0.56c	0.93	-0.25d	0.97	100.58	.000
11. student cohesiveness	0.38 ^o	0.90	-0.05b	0.90	-0.70c	1.03	0.09d	0.95	128.97	.000
12. teacher support	0.36 ^o	0.98	0.09b	0.90	-0.51c	1.00	-0.24d	0.94	96.98	.000
13. student assertiveness	0.40 ^o	0.92	0.00b	0.89	-0.62c	1.05	-0.06b	0.95	119.27	.000
14. student study satisfaction	0.27 ^o	0.84	0.12b	0.90	-0.42c	1.13	-0.27d	1.08	70.26	.000
15. student classmates satisfaction	0.30 ^o	0.92	-0.02b	0.91	-0.65c	1.07	0.10b	0.95	99.40	.000
16. student teacher satisfaction	0.24 ^o	0.95	0.08b	0.89	-0.43c	1.05	-0.16d	1.04	56.43	.000
17. student life satisfaction	0.17 ^o	0.96	-0.01b	0.90	-0.24c	1.11	-0.05b	1.06	14.46	.000
18. student internal locus of control	0.14 ^o	0.98	0.00b	0.90	-0.15c	1.11	-0.07bc	1.05	8.61	.000

Note: Subscript letters that differ in each row denote which cluster means are significantly different from one another ($\alpha = .05$).

Table 4. Means and Standard Deviation for the Clustering Variables and Control Variables for Five Cluster Solution

	Cluster 1		Cluster 2		Cluster 3		Cluster 4		Cluster 5		F	p
	(N = 540 15%)		(N = 987 28%)		(N = 935 26%)		(N = 538 15%)		(N = 553 16%)			
	M	SD	M	SD	M	SD	M	SD	M	SD		
1. student negotiation	-0.68d	0.68	0.81a	0.64	0.28b	0.61	-1.26e	0.84	-0.03b	0.78	736.27	.000
2. student social support	-0.06c	0.73	0.91a	0.58	-0.25d	0.68	-1.29e	0.83	0.11b	0.78	1229.14	.000
3. student rules orientation	0.30b	0.65	0.58a	0.66	0.37b	0.60	-0.65c	1.08	-1.32d	0.66	166.90	.000
4. student loyalty	0.63b	0.55	0.85a	0.51	-0.43d	0.59	-1.45e	0.75	0.00c	0.70	1767.24	.000
5. student universalism value	-0.10c	0.97	0.30a	0.76	0.11b	0.83	-0.41d	1.33	-0.23c	1.07	77.96	.000
6. student power value	0.00b	0.98	-0.15b	0.99	-0.04b	0.94	0.18a	1.04	0.17a	1.05	16.06	.000
7. student self-direction value	-0.01b	0.96	0.21a	0.84	0.09ab	0.88	-0.26c	1.23	-0.27c	1.09	46.49	.000
8. student cooperation	0.02c	0.91	0.49a	0.83	0.03ab	0.84	-0.73c	1.10	-0.12d	1.02	216.89	.000
9. student power orientation	-0.17c	0.95	0.05bc	0.99	0.01b	0.94	0.18a	1.17	0.05ab	0.93	9.76	.000
10. teacher equity	-0.03b	0.96	0.38a	0.99	0.10b	0.89	-0.57d	0.95	-0.25c	0.96	144.56	.000
11. student cohesiveness	-0.01b	1.00	0.41a	0.87	-0.05b	0.90	-0.72c	1.04	0.08b	0.94	174.23	.000
12. teacher support	-0.08c	0.95	0.37a	0.96	0.12b	0.91	-0.55e	1.01	-0.25d	0.93	127.67	.000
13. student assertiveness	-0.09b	0.95	0.43a	0.90	0.03b	0.89	-0.65c	1.06	-0.07b	0.94	151.67	.000
14. student study satisfaction	0.03b	0.95	0.27a	0.85	0.15ab	0.88	-0.47d	1.14	-0.31c	1.11	87.42	.000
15. student classmates satisfaction	-0.09b	0.95	0.43a	0.90	0.03b	0.89	-0.65c	1.06	-0.07b	0.94	129.46	.000
16. student teacher satisfaction	0.03b	0.95	0.27a	0.85	0.15b	0.88	-0.47d	1.14	-0.31c	1.11	68.36	.000
17. student life satisfaction	-0.01b	0.96	0.18a	0.94	0.02b	0.88	-0.25c	1.13	0.11bc	1.12	22.79	.000
18. student internal locus of control	0.02ab	0.96	0.13a	0.97	0.00a	0.91	-0.16c	1.12	0.09bc	1.07	12.36	.000

Note: Subscript letters that differ in each row denote which cluster means are significantly different from one another ($\alpha = .05$).

These students saw the classroom as a place in which although there is not a lot of support and loyalty among classmates, there is much respect for rules and tolerance. They perceived support and fairness from teachers, but perceived relative ability to speak in a friendly way, relative cooperation and relative possibility to work together with friends. The “*respectful students*” perceived measures of power as negative, were not happy at school and were less satisfied with classmates and life in general, but more satisfied with their own study and with teachers. In regard to values, these young people perceived respect for human rights, environmental protection and knowing how to speak and express oneself as important, while they gave low importance to success and power.

Opposite to the Cluster 1, the *third cluster* (Cluster 3) labeled “*intolerant/passive students*” (n = 585, 16%) had very low score on student loyalty and low scores on student negotiation, on student social support and on student rules orientation than did the other clusters. This also applies to all other dimensions included in ANOVA analysis performed to better describe the clusters. There were no significant differences between this cluster and cluster 4 in regard to power, internal locus of control and self-direction. These students saw the classroom as a bad place where there is no respect for the rules and no tolerance, let alone support and loyalty among students. The young people in this profile did not perceive there to be cooperation and the possibility to work more together with friends, nor support and fairness from teachers. The measure of power over others was the only dimension perceived positively. Regarding values these students gave great importance to success, power and knowing how to speak and express oneself more, while they gave less importance to respect for human rights and environmental protection, for example. Moreover these young people were not very satisfied with classmates, their own study, life in general and especially with their teachers and were not convinced that they could control their life.

In a mirror image to Cluster 2, *fourth cluster* (Cluster 4), labeled “*self-centered students*” (n = 740, 21%), had very low scores on student rules orientation and low scores on student negotiation, but high scores on student social support and student loyalty. All other dimensions included in ANOVA analysis performed to better describe the clusters were similar. There were no significant differences between this cluster and cluster 2 in regard to student cooperation, student assertiveness, student classmates satisfaction, student life satisfaction, and among this cluster and clusters 1 and 2 in regard to student power orientation. Moreover, there were no significant differences between this cluster and cluster 3 with regard to the student power value, student self-direction value and student internal locus. This group of students saw the classroom as a place where there is little respect for rules and tolerance, where there is good peer support but little loyalty. For young people of this pattern, being in class was nice and power was positive, but there was no cooperation, low freedom of expression and the teachers were not fair and supportive. These students were also satisfied with classmates, but they were not satisfied with life in general, their own studies and the teachers. In regard to values, the “*self-centered students*” gave little attention to human rights, environmental protection and knowing how to speak and express oneself more, while they gave importance to success and power.

Gender, participating in voluntary activities and belonging to a stable group of friends in cluster composition. To further describe the four clusters, we performed several separate chi square analysis to test for possible *gender, participating in voluntary activities, belonging a stable group of friends* differences in cluster membership. The result indicated that cluster membership was associated with *gender*, $\chi^2(3, N = 3539) = 21.05, p < .05$. Boys and girls in each cluster were balanced, but in C11 (“*supportive/proactive students*”) there were more girls (35%, R=4) than boys (24%, R=4), in C12 (“*respectful students*”) there were no significant differences in belonging to the cluster for male and female (33% and 32% respectively). C13

(“*intolerant/passive students*”) and C14 (“*self-centered students*”) contained a greater number of boys (19%, $R=2.3$ and 25% $R=3.8$ respectively) than girls (15%, $R=-2.1$, and 17%, $R= -3.4$ respectively). The second chi-square analysis indicated that cluster membership was associated with *participating in voluntary activities*, $\chi^2(3, N = 3469) = 8.52, p < .05$. Only 17% of students participated in voluntary activities. C12 (“*respectful students*”) and C11 (“*supportive/proactive students*”) contained the highest numbers of students who participated in voluntary activities (36% and 32% respectively), while the lowest number of students that participated in voluntary activities were in C13 (“*intolerant/passive students*”) (16%) and in C14 (“*self-centered students*”) (17%). Moreover, C14 had more students that volunteered than those who did not (22%). The third chi-square analysis indicated that cluster membership was not independent of *belonging to a stable group of friends*, $\chi^2(3, N = 3498) = 21.053, p < .05$. The majority of students had a stable group of friends (79%). C13 (“*intolerant/passive students*”) and C14 (“*self-centered students*”) had the lowest numbers of student with a stable group of friends (15% and 22% respectively), while the highest number of students that participated in voluntary activities were in C12 (“*respectful students*”) (31%) and in C11 (“*supportive/proactive students*”) (31%). In addition, in C14 there were more students that belonging to peer group (22%), while in C13 there were 20% of students that had a stable group of peers (20%).

Discussion

The classroom is place where young people spend much of their time and where they can develop their relational capacities (Vieno et al. 2007). Researchers have asserted that all adolescents have the potential for constructive development and that this potential is realized when the strengths of youths are in agreement with interpersonal and

institutional supports for healthy development in young people (e.g., Zarrett et al., 2009). Thus, in our opinion, knowing the students and their different ways of relating to each other, their perception of what happens in the classroom, and their behaviors can help teachers to provide a classroom environment that facilitates living-together, satisfaction and wellbeing of each student. This understanding directed the general goal of the present study, where the mode of living-together in the classroom in terms of whole student profiles was investigated by examining the composition of these groups in relation to variables that regard students' perception of live-together in class.

The primary specific aims of the present study were to identify students' *styles of the in the classroom* clusters of high school students that refer to some classroom climate dimensions: student loyalty, student rules orientation, student support and student negotiation. We then confirmed this chose and described the clusters through analysis of differences among clusters trough several dimensions that referred to students' relationship with teachers (teacher equity, teacher support and student teacher satisfaction), students' relationship with classmates (student cohesiveness, student cooperation, student social support and student classmate satisfaction), students' characteristics and satisfaction (student assertiveness, student power orientation, student satisfaction with studies and with life), student values (universalism, power, self-direction) and student internal locus of control.

Our findings showed four cluster of students' *styles of living-together in the classroom* different to each other and internally homogeneous. In the first cluster, the students that we briefly described as "'supportive/proactive students'" seemed to have perhaps an overly idealized vision of living-together in the classroom. In fact, the personal characteristics of classmates, of themselves and of teachers were viewed positively. The students meeting this pattern saw the classroom as a place where everything functions, where there was a lot of

respect and tolerance for the rules' and where support and loyalty among students prevailed. Moreover, they saw class as a place where they worked more with others, where there were no abuses of power and where they were happy to be, also because they felt it was possible to express themselves freely and assert their own point of view in class. These young people were satisfied with both their teachers, who they perceived as very fair and supportive, and with their classmates, who they perceived as supportive, cooperative, cohesive, assertive and loyal. The students of this profile gave great prominence to values such as justice in society, environmental protection and studying and being educated, while they gave low attention to success and power. Finally they were satisfied with their own studies and life in general, and were convinced that they could control their life. As expected and in accordance with literature that has shown that an increase in the amount of time young people spend in organized out-of-school activities (e.g., various kinds of volunteering) often reduces health-compromising and delinquent behavior, promotes positive youth development (e.g., Eccles & Templeton, 2002), social competence, motivational beliefs, and identity development (Simpkins, Eccles, Becnel, 2008), in this group the majority of students are girls, had a stable group of friends and participated in volunteer activities.

On the contrary, the opposite profile "*intolerant/passive students*" showed a group of students that seemed to be apathetic and have a negative vision of classroom, who saw class as a bad place where there is no respect or tolerance for rules, let alone support and loyalty among students. The young people in this profile did not perceive cooperation and the possibility to work together with friends more, not support and fairness from the teacher, and were not satisfied in general with their own life, and in particular, not with their teachers, their classmates and their own studies. The power over others and being a leader was the only dimension perceived positively. This was confirmed also by values that these students showed, as they gave great importance to success, power and knowing how to speak and

express oneself more, while they gave low attention, for example, to respect for human rights and environmental protection. Furthermore, these young people were less convinced that they could control their life. As expected, in this group the minority of students were girls who had a stable group of friends and participated in volunteer activities. These results shown that these type of groups do not include prosocial students given the high scores in guidance to exercise power over others and be abusive, include more boys than girls, and include students who may be at risk of depression or aggressive behavior. The fact that the two groups are extremes and that the group of “*supportive/proactive students*” is almost twice the size of the “*intolerant/passive students*”, could lead to the consideration of them as the normative group.

Our findings highlighted that other two groups were in an intermediate position with respect to these. The two intermediate groups seem to follow the quality of composition and the numerical proportions of the two groups at the extremes, because the groups of boys who seem to fit less positively to the class life, were about half of those who seemed to adapt more positively. In these two profiles, the boys seem to opposite positions, so that high scores on some dimensions of one group correspond to low scores on the same dimensions in the other group. We have defined “*respectful students*” as the group of students who showed positive scores almost exclusively in the dimensions regarding relationships with peers and personal relationships, but not those addressed to working together and belonging to the class. In fact, these young people saw classmates as loyal, supportive and cohesive and were satisfied with classmates, but they were less satisfied in general with classroom life and the teachers, and saw the classroom as a place in which there was little tolerance and respect for the rules. In addition, these students gave much importance to success and power, while perceiving themselves and their classmates unable to be assertive and give direction to their life, and also giving less attention to respect for human rights and environmental protection. On the contrary, students who were defined as “*self-centered students*” showed greater orientation to

perceived in class aspects of responsibility and ability to collaborate and negotiate with others. These young people had more positive perceptions of teachers, who they saw as supportive and fair. They also seem to be more oriented towards respecting both themselves and others, as well as school rules, human rights and environmental protection, and are more satisfied with teachers and their studies, although less satisfied with classmates and their life in general.

In the literature to our knowledge, there are no references that have analyzed students' profiles which include dimensions that can refer to some of those used in our study (Damon, 2008; Linnakya & Malin, 2008; Mahoney, Stattin, & Magnusson, 2001; Tapola & Niemivirta, 2008; Torney-Purta, 2009; Vansteenkiste, Sierens, Soenens, Luyckx, & Lens, 2009). However, there are several longitudinal and cross-sectional studies that can support the groups' composition of students' *styles of living-together in the classroom*. Thus our results are in line with literature that shows open and fair classroom climate is positively created by teacher and peer behaviors and correlated with students' positive vision of their ability to think critically about social issues and their tolerance of diverse opinions (e.g., Berman, 1997). Instead, when the classroom climate is less supportive, competitive and hostile, students feel anxiety, unease and scepticism which may lead to intellectual depression (Zedan, 2010). Evaluative and supportive feedback that teachers give to their students has a decisive influence on the perception they have of their competence. This is most important because perceived competence is considered one of the primary predictors of wellbeing, and performance (see Bandura, 1997). In early adolescence, young people's feeling of teacher support predicts values, achievement expectancies, engagement and performance (Goodenow, 1993). Especially regarding high academic competence, there are strong correlations with positive achievement-oriented behaviors and traits, such as provided effort, engagement, persistence after failure, academic achievement low anxiety, emotional stability, master goal

orientation, intrinsic motivation, internal locus of control, (see Bong & Skaalvik, 2003, for a review). Although the learning process occurs inside the student, teachers have the essential function of building an emotionally receptive and motivating environment, and providing opportunities for social-emotional because the process of learning is facilitated (e.g., Vieno, et al., 2007). Given all the above and the composition of our profiles, the results of previous studies mentioned above, may constitute the theoretical support of the groups labelled “*supportive/proactive students*” and “*respectful students*”.

Regard “*self-centered students*”, previous studies showed that when students' have a good relationship with peers, they enrich their sense of possibilities, feel more effective and able to learn, and are better able to engage themselves in academic achievement (Good et al., 1963; Webb & Palincsar, 1996). Particularly in young adolescent, positive interactions with classmates and positive perceptions of their social and emotional support facilitate students’ self-regulation and self concept (Wentzel, 1994), encourage engagement and concentration on achieving goals and academic learning (Pierce, 1994), and discourage disruptive behaviors (e.g., Ryan & Patrick, 2001). Moreover, perceptions of the support that children and adolescents receive from peers, have been found to be critical influential factors for emotional and cognitive development (e.g., Ennett & Bauman, 1994), an important protective process, and a fundamental ingredient for healthy development in childhood. Therefore, these references could be the theoretical framework of starting from our results and these theoretical issues, we believe this study has an implication for educational practice.

Our general purpose was to examine the profiles that emerged from a combination of high school students’ perceptions of living-together in the classroom, their values, their school and life satisfaction, and their sense of internal locus of control, and also to help teachers to understand their students and improve teaching and relationships in the classroom. The groups that emerge from our analysis indicated the link between students’ positive perception

of living-together and students' well-being, and that the mode and form of the relationships among students and among students and teachers play a key role in shaping the perception that students have of living-together in connection to their satisfaction and values. Moreover, our results connecting previous findings that students' perceptions of school satisfaction and a positive view of school are related to student sense of responsibility and participation in classroom life (Fraser, 1994; Samdal et al., 1998), and that students' feelings of inclusion in a classroom group in which they are cared for and supported (Danielsen et al., 2009), are positively related to cognitive and emotive experiences, and with the of possibility to express themselves and to dialogue and cooperate with each other. Furthermore our results highlighted also that in groups in which there was respect for people, the environment and themselves, a feeling of belonging and low perception of negative and conflictual experiences, students were more satisfied with school and life (Osterman, 2000).

Based on the above, we can argue that living in an educational environment in which students receive support, feel solidarity, demonstrate respect for others, and experience fairness and opportunity of expression, as well as cohesion and cooperation towards common objectives, has a key role for their wellbeing. What has been said so far suggests that if teachers want to create an environment that promotes well-being and, in turn, facilitates students' learning and success, they may consider the perception that students have of living-together in the classroom. In this way they can promote and create a classroom context that supports, nurtures and respects students, that encourages young people to get to know each other and learn about others, to share ideas, and to explore new content. In such a classroom, students are facilitated to develop social skills and relationships and they should be able to accept each other's ideas and values (e.g., Miller & Pedro, 2006). When this happens, everyone will feel a connection with each other and a sense of satisfaction for school and life in general.

Limitations and Future Directions

The study has some limitations. First, the sample was large but not nationally representative. Nevertheless, the advantage of a large data set provides valuable information on high school students' perception of what happens in a classroom, i.e. classroom climate. Secondly, the study was limited to self-report measures. To surmount some of the disadvantages of self-report procedures, the measures were reserved private in order to reduce social desirability responding. However, in future studies it "would be desirable to rely upon multiple methods and informants across situations to minimize bias due to self-report" (Caprara, Alessandri, Di Giunta, Panerai, & Eisenberg, 2010, p.85).

Moreover, self-report assessment might artificially boost the observed strength of the relationships between variables through shared method variance. Such problems could be circumvented by including teacher reports of students' characteristics and behaviors which influence classroom climate.

Furthermore, the cross-sectional nature of this study is limited, as longitudinal data are needed to clarify causal relations. In fact, as Cole and Maxwell (2003) pointed out, with only one cross-sectional assessment it is difficult to provide insight into the direction of influence between a set of variables. Therefore the interpretation of the relational-behavioral high school student profiles' should proceed with caution. Furthermore, the assessment of variables at different times in longitudinal studies could allow for a more certain interpretation of relationships of influence between the variables as well as the stability of the configurations over time and age.

Future research should transcend some of the limitations of the present study. Our findings are limited by the particular set of measures we used to operationalized the PYC, satisfactions' and internal locus of control variables (Anderson, Moore, & Hamilton, 1998) as

we used measures that were composed of only one indicator. In addition, it would be interesting to include other values, such as benevolence in order to refine more profiles, and extra-curricular activity (Duncan, Duncan, Strycker, & Chaumeton, 2002) and other OST (out-of-school-time) variables as covariates in a logistic regression model as predictors of well-being.

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CHAPTER IV

A MULTILEVEL EXPLORATION OF LIVING-TOGETHER

DIMENSIONS:

THE CROSS-LEVEL EFFECTS OF SUPPORTIVE CLASS

*A Multilevel Exploration of Living-Together Dimensions:
The Cross-Level Effects of Supportive Class*

Introduction

In recent years there has been a growing interest in school satisfaction (Baker, 1998; Huebner, Suldo, Smith, & McKnight, 2004). School satisfaction refers to children and adolescents' psychological well-being at school and in the classroom, and is considered one of the most important indicators of students' wellness (Huebner, et al., 2004; Suldo, Shaffe, & Riley, 2008). School satisfaction was defined as the subjective, cognitive appraisal of the perceived quality of school and classroom life (e.g., Baker, Dilly, Aupperlee, & Patil, 2003). It represents a dimension that psychologically affects young people's cognitions regarding their academic competence (Huebner & McCullough, 2000), self-esteem, school engagement, absentee and drop-out rates (e.g., Salmela-Aro, Kiuru, Pietik Salmeläinen, Jokela, 2008). The construct of school satisfaction has been analyzed in relation to both individuals and the environment. In regards to individual characteristics and other proximal factors, it has been documented that school satisfaction may be affected by students' personality, behavior patterns, and cognitive processes (DeSantis King, Huebner, Suldo, & Valois, 2006) as well as by students' ability, gender, race, socioeconomic status, mental health and family context (Baker, Davis, Dilly, & Lacey, 2002). As for the environmental factors, school satisfaction may be influenced by distal variables such classroom practices, school organization, and proximal variables such as the context of peer relations (Baker et al., 2002). School, and in particular classes, are social organizations in which students have the opportunity to live-together for a long time and where they can experience significant and stable relationships. In

addition, students build models of mutual recognition and support that may have long-lasting effects on their lives and their well-being (Cohen, 2006).

Avallone and colleagues (2007) analyzed people's experience of living with others in a definite common place for a certain period of time, in different contexts (organizational, social and affective contexts). They introduced the construct of "living-together" in several contexts and examined the various ways in which people relate to each other in those contexts in which they spend most of their time. Based on an ample research project they have identified ten areas, i.e. respecting of rules and norms, sense of confidence in people, tolerance and acceptance of diversity, collaboration and cooperation, equity, support and solidarity, a sense of protection and secure environment, care for others, and effective communication, power relations, investment of energy and involvement, and have observed the pivotal role that context-specific relationships play in individual well-being (Avallone, Farnese, Paplomatas, & Pepe, 2007). In school, and particularly in the classroom, these areas refer to different behaviors and characteristics of students and teachers that regard students' loyalty, support, negotiation, cooperation, cohesion, assertiveness, rules respectful and power orientation and teachers' equity and support (see also Chapter I). In these areas are included the relationships that students establish with each other and with the teacher that influence the student's perception of what happens in the classroom (Avallone, 2007). In this study we analyzed the interplay between living in the classroom and student well-being, with particular reference to the dimensions that concern students' perception of support by teachers, cohesion and support among students and their influence on students' school satisfaction (with classmates, teachers and their studies).

In recent decades, the size mentioned above were included in the construct of classroom climate in different combinations (Fraser, 1994; Patrick, Ryan, & Kaplan, 2007; Samdal, Nutbeam, Wold, & Kannas, 1998). Accordingly the current study will make reference to the

classroom climate. Classroom climate has been defined as a composition of both emotional and relational characteristics or the mood or atmosphere that is created in the classroom through the interactions among students and with teachers and by the physical environment (Creemers & Reezigt, 1999; Freiberg & Stein, 1999). It has been associated to goal orientation (e.g., Church, Elliot, & Gabel, 2001), student motivation (Anderson, Hamilton, & Hattie, 2004), student engagement in class activity (e.g., Douglas Willms, 2003), social skills and competence (Baker, 1998), self-image and attitudes towards a certain discipline (Fraser & Tobin, 1991), engagement and participation (Anderson et al., 2004).

Classroom dynamics are multifaceted and the climate of a specific classroom varies as a function of single schools. The classroom management, class composition and teachers' and classmates' characteristics and behaviors, may all influence student experience and feelings. In general, school climate is related to social situations within classrooms as a whole. Recently, there appears to be a renewed interest in students' perceptions of the classroom environment among educators and researchers (e.g., Fraser, 1994, 1998, 2002; Rowe, Kim, Baker, Kamphaus, & Horne, 2010). As Bandura (2001) has argued, individuals tend to react to experiences not necessarily how the experiences are, but as they subjectively perceive them. Therefore, students' perceptions of classroom environments has a considerable impact on their behaviors at school and so is a significant potential objective for school improvement projects (e.g., Church et al., 2001). For example, many of the school interventions have considered the influence of factors that can improve school climate both at the individual, e.g. students and teachers, and at context level, classroom and school (Wilson, Lipsey, & Derzon, 2003). Thus, it is important to identify specific factors at different levels (i.e., student, classroom, and school) that may influence quality of student life in the classroom.

In our conceptualization, in accordance with Lau and Nie (2008), particular attention was given to the distinction between personal and contextual levels. In this study we adopted

a hierarchical perspective that provides a new vision of how constructs operate at the individual and group levels. When the on hand data contain a multilevel structure in which individuals clustered into groups (i.e., classes and then in school), this approach is particularly recommended (Graves & Frohwerk, 2009; Marsh, Martin, & Cheng 2008). In the case of the school and the classroom, when individuals are not randomly assigned to a group, there is the risk that individual student characteristics and characteristics of classes they are attending may be confused. In addition, students are more similar to students of the same class than other students from different classes (Marsh et al., 2008). This introduces a difference in the data that needs to be taken into account when the data are analyzed. When hierarchical structures of data is ignored and single level analysis is adopted, results could be distorted and contradictory (Bickel, 2007). Thus, a better comprehensive approach of the phenomena should include both student and class-level attributes in the analysis.

Marsh and colleagues (2008) claim that this approach should be taken into account when one of the main dimensions of the study is on an inherently class-level variable such as climate. They argue that classroom climate is inherently a class-level construct, in contrast with many researchers that consider individual student perceptions of classroom climate as an individual student-level variable to analyze with single-level analyses (e.g., Ames, 1992; Levesque, Zuehlke, Stanek, & Ryan, 2004). For example, when students are sampled within the same classroom, their perceptions on the climate tend to be more similar, thus the most suitable measures of the classroom climate could be measured through aggregates of individual student perception (for further clarification see Marsh et al., 2008).

On this basis, we can argue that the multilevel method provides an appropriate methodological approach to evaluating relationships among students' perceptions of life-together dimensions and student satisfaction. Therefore, we have applied this conceptual and

methodological approach to examine both the student- and class-level predictors of students' school satisfaction within an integrated framework.

Student-level predictors of student school satisfaction

Perceived teachers' and classmates' support and feelings of cohesion with peers are dimensions that students bring and experience in the classroom and influence how they feel and whether they are satisfied with their life in the class (Rowe et al., 2010). In our study we decided to choose these dimensions as a guideline for the evaluation of the experience that students have in class. Many studies have emphasized how students' perceptions of the nature and quality of their relationships with teachers influence students' confidence about learning and academic achievement (Dorman, 2001) and that support from classmates and especially from teachers, has a main effect on school satisfaction and scholastic competence, that are directly related to life satisfaction (Danielsen, Samdal, Hetland, & Wold, 2009). Teachers' evaluative and supportive feedback influences students' perceptions of their competence which in turn, predicts motivation, dynamic well-being and performance (Bandura, 1997; Bong & Skaalvik, 2003; Eccles & Wigfield, 2002), as well as positive interactions with classmates and social and emotional support. Furthermore it facilitates students' self-regulation and encourages the development of self concept (Wentzel, 1998, 1999). Adolescents' perceptions of peer support affects their emotional, cognitive and health development, act as protection from problems caused by acts of unfairness or iniquity (Abbott, O'Donnell, Hawkins, Hill, Kosterman, & Catalano, 1998) and influence satisfaction with their class, school and global life (Danielsen et al., 2009). Moreover, students' perceptions of school satisfaction, safety and a positive view of the school are related to student participation and engagement in school life (Fraser, 1994; Samdal et al., 1998), and to

affiliation, cohesion, fairness, mutual respect, and support from teachers and students (e.g., Patrick et al., 2007; Ryan & Patrick, 2001) both in early adolescents and in adolescents.

Class-level predictors of student school satisfaction

Class characteristics provide the basis for interactions between students and teachers and limit the mode of the exchange between them. In this sense, school satisfaction may partly reflect the class-specific experience. At class-level two types of class-level variables may be included: 1) variables that exist only at this level (i.e. teacher gender, teacher style, etc.) and 2) variables that come from lower levels (i.e. variables that represent the sum, the mean and the standard deviation of all students nested within the same classroom).

Especially class-variables derived by lower level, such as teachers' characteristics and behaviours, have been well investigated and found to influence students' experiences. However, several studies have shown that teacher management style is related that teachers' characteristics and behaviours are important components of life in the classroom and, finally, can enhance a classroom climate that in turn promotes student wellness and satisfaction (e.g., Danielsen et al., 2009). It has been established that teachers' educational practices that include emphasis on prosocial values and cooperation, and teachers who are supportive, increase students' perceptions of connectedness (Battistich, Solomon, Watson, & Schaps, 2002). Moreover, in those classrooms in which teachers are supportive (Fry & Coe, 1980), students feel respected and recognize fairness and clarity of rules. In the end students see the classroom as a place in which they experience a sense of belonging and safety, and, more generally, a positive quality of life. The sense of fairness (Dalbert & Maes, 2002), the presence of classroom rules, and student involvement in the development of classroom rules, all influence school adjustment, classroom climate and school-class satisfaction (Samdal et al., 1998).

Class size, as a classroom variable treated at lower level has been extensively investigated. Many studies have shown that a smaller class size is associated with better student performance (Grissmer, Flanagan, Kawata, & Williamson, 2000). In studies in which the number of students was reduced, significant improvement in student outcomes, such as academic achievement (particularly in literacy) and on task behaviours, have been observed. Beyond student outcomes, results have also shown an increase in teacher support for learning and in time that teachers spend with individual students (Class Size Reduction Research Consortium, 2001). Indeed, in regard to school satisfaction in elementary school, two studies conducted with Dutch students have shown that class size bears no relation to school satisfaction (Verkuyten & Thijs, 2002) or school adjustment (van der Oord & Van Rossen, 2002).

The Present Study

On the basis of the literature presented earlier, (e.g., Danielsen et al., 2009; Ryan & Patrick, 2001) the current study examined the students' school satisfaction (i.e., satisfaction with classmates, with teachers, and with studies) to determine potential influence and relative contribution of factors at the student-level (level-1) and at the classroom-level (level-2). Specifically the main purpose of this contribution is to examine whether a supportive environment (i.e., level-2 variable) moderates the relations between predictors at level-1, i.e., teacher support, student cohesiveness, student social support with outcome variables at level-1, i.e., student satisfaction. To this end, we had three goals.

First, we investigated the associations of student level variables, student cohesiveness, student social support, perceived teacher support, with student school satisfaction. In particular we checked for the main and interaction effects of three predictors on influencing the satisfaction of student with classmates, teachers and studies.

Secondly, we examined the main effects and the interaction effects of level-2 variables supportive class and student class participation, on student school satisfaction. Specifically we wanted to control for the number of students within the same class and the number of students responding to the questionnaire. To this aim, we introduced student class participation as a covariate variable to verify if there was an interaction with a supportive class.

A wide variety of class-level factors have been found to be influential to students' school satisfaction, but, to our knowledge, no studies have suggested any cross-level interactions with teacher support, student cohesiveness, and student social support. In our third goal we wanted to explore the possible moderation effects of a supportive class on the relationship between teacher support and school satisfaction, between student cohesiveness and student school satisfaction, and between student social support and school satisfaction.

Hypothesis

Regarding the first goal, according to previous studies (DeSantis King et al., 2006), we expected that student cohesiveness, student social support, and teacher support predict student school satisfaction (Hypothesis 1). The main effect hypothesis under this aim implies that the higher the students' perceptions of student cohesiveness, student social support, and teacher support, the higher the student school satisfaction at student level only (level-1).

Because the three predictors at level-1 were measured simultaneously and because this is not the main goal of the study, we introduced the interactions between three predictors for potential confounding effects that may bias the cross-level interaction.

In regards to the second goal, based on previous studies that showed the influence of a supportive climate in predicting well-being and satisfaction of students with life at school and in the classroom (Midgley, Feldauer, & Eccles, 1989; Samdal et al., 1998), we expected that the higher the perception of a supportive class, the higher the student satisfaction with the

school. The main effect hypothesis under this aim implies that students' perceptions of a supportive class had additional contributions to the prediction of student school satisfaction at class level (level-2).

Moreover, following the studies of Verkuyten and Thijs (2002) and van der Oord and Van Rossen (2002) that showed no influence of class size on school satisfaction in elementary school, we hypothesized that student class participation does not predict student school satisfaction (Hypothesis 2b).

Moreover, because the two predictors at level-2 were measured simultaneously and because this is not the main goal of the study, we introduced the interactions between a supportive class and student class participation for potential confounding effects that may bias the cross-level interaction.

Regarding the third goal, based on theories and studies on the roles of support and student school satisfaction, we hypothesized that teacher support (Bandura, 1997; Bong & Skaalvik, 2003; Danielsen et al., 2009; Eccles & Wigfield, 2002) is the dimension that has the most significant weight on influencing the satisfaction of students with the school, and when it is perceived as directed at themselves or classmates, and when it is perceived as classroom climate. Thus:

- first, we expected that students' perception of a supportive class to moderate the relation between teacher support and student school satisfaction (Hypothesis 3a). In particular, based on previous studies that showed teachers as a pivotal source of social support in class and, subsequently, in student school satisfaction (Rhodes, Roffman, & Reddy, 2004), we expected that the relation between teacher support and student school satisfaction is higher in classrooms with lower support;

- secondly, due to the significant association of a sense of belonging and cohesion with teacher support (DeSantis et al., 2006; Miller & Pedro, 2006), we expected that students' perceptions of supportive class climate to moderate the relations between student cohesiveness and student school satisfaction (Hypothesis 3b). In particular, based on previous studies (Midgley et al., 1989), we expected that in classes with higher teacher support, the relation between student cohesiveness and student school satisfaction will be higher.

Method

Participants and Procedures

The sample is the same as that of Chapter III and IV. The participants were part of a national project of the Italian Ministry of Education and "Sapienza" University of Rome (Avallone, 2007). Approximately 300 high schools participated in the study with a total of 4,094 students and 224 classes, in both 10th and 12th of high school (that refer to 2nd and 5th grades of Italian secondary school respectively. Specifically 5th grade of secondary school in Italy and 12th grades of high school in USA are both the last years of high school in the two countries). (see also Chapter I)

In particular 1,917 (47%) attended 10th grade (52% female) and 1,790 (44%) attended 12th grade (56% female). The mean age of students was 15 years (SD = .7) for 10th grade and 18 years (SD = .8) and for 12th grade. Twenty-eight percent of students lived in North-East regions, 23% in the North-West, 18% in the Center, 18% in the South, and 12% lived on the islands of Sicily and Sardinia. The family profile matched the national one with regard to the families' socio-economic characteristics. Most young people were from intact families (79%),

had Italian parents (89%) and at least one parent with a high school degree (43%). (see also Chapter I)

For the purpose of studying satisfaction in the perception of classroom life and climate, it is important to know some of the characteristics of Italian schools. Students in Italian schools stay with the same classmates and teachers both throughout the elementary school grades and throughout middle and secondary school years. This organizational context, more than the scholastic setting of other countries, is particularly influenced by the relationship among teachers and students, and among students and classmates (Vieno, Perkins, Smith, Santinello, 2005). Since the class represents a microcosm unit characterized by a set of relational variables determining climate and satisfaction (Vieno et al., 2005), we were led to focusing our investigation at this level. The research includes the two grades in which 15-16- and 18-19-year-olds are concentrated. This first age corresponds to 10th grade in the United States and 2nd grade of Italian secondary school. The 12th grade is the last year of high school, which in Italy continues for five years. In this contribute we used these labels.

A rigorous consent procedure for the study was followed, including parental consent and authorization from school councils and the freedom of the students to decline contribution if they chose to do so. All students were assured of the confidentiality of their responses and that participation was voluntary. Parents were informed and teachers supervised student completion of the questionnaires in their classrooms. (see also Chapter I)

Measures

Measures considered here were based on responses to PYC (*How Do You Perceive Your Class?*). (see also Chapters II and III)

Student Level-1 Measures

How Do You Perceive Your Class? (PYC).

PYC is a new instrument designed to investigate how high students' living-together in the classroom (Avallone, 2007). PYC was developed in a "class form" rather than in a personal form, to assess students' perceptions of their class as a whole (e.g., Sinclair & Fraser, 2002). Exploratory Factor Analysis (EFA) on 10th grade students and Confirmatory Factor Analyses (CFA) on 12th grade students and complete grade invariance at scalar level, showed an acceptable ten dimensional factorial structure. (see Chapter II) PYC assesses ten dimensions that refer to the students' perceptions of how teachers interact and treat students (*teacher support, teacher equity*), the perceptions of classmates' personal dimensions (*student loyalty, student negotiation, student power orientation, student rules orientation*), and social and study related behaviors of students in the classroom (*student assertiveness, student cohesiveness, student social support, student cooperation*).

The PYC questionnaire consisted of 40 items (35 after EFA and CFA - see Chapter II) grouped in the ten indicated dimensions. The dimensions of the PYC correspond to dimensions that were found in a preliminary qualitative and quantitative study in which Avallone and colleagues (2007) explored themes of living together. They identified 10 dimensions that underlie "living-together" in social, work and affective contexts. For each item of the PYC students were asked to "Think about their class, about themselves and their classmates and report how frequently a specific situation happens" using a 4 point Likert scale (from 1 = *never* to 4 = *often*).

The predictors included at level-1 were part of the PYC.

Student Cohesiveness. The extent to which opportunities exist for students to feel at ease in class and with peers, and feel part of the classmate group (e.g., "Feel part of the class"). This dimensions include 3 items (Cronbach's Alpha = .81).

Student Social Support. The extent to which opportunities exist for students to help distressed classmates, to integrate more shy classmates, and defend the weaker classmates (e.g., “Help to integrate classmates who are more shy”). This dimension includes 3 items (Cronbach’s Alpha = .78)

Teacher Support . The extent to which the teacher helps, encourages and is interested in the students (e.g., “Can ask help to teachers when in difficulty”). This dimension includes 4 items (Cronbach’s Alpha = .84)

Student School Satisfaction. This dimension was measured by the aggregation of three items that regard *student classmates satisfaction*, *student teachers satisfaction*, *student study satisfaction* (M = 6.72, SD = 1.63, Cronbach’s Alpha =.59). Participants reported how satisfied they were with classmates, teachers, their own study and their own life using a response format ranging from 1= *not at all important* to 10 = *very important*.

The outcome variables at level-1 were assessed through the Student School Satisfaction dimension that referred to the extent to which students were satisfied with their teachers, classmates and studies.

Class Level-2 Measures

Class-level measures of Classroom Climate (i.e., Supportive Class).

This dimension was derived from aggregating (i.e., averaging within each classroom) (Hox, 2002) measures of students’ perception of teacher support at student-level (M = 2.67, SD = 0.63). The total variability of perceived supportive class consisted of the within-class and between-class components. The aggregated measures reflect the between class components (e.g., Lau & Nie, 2008).

Supportive Class was entered at level-2. Measure of teacher support included at level-2 (Supportive Class) were derived from students’ perceptions of teacher support at the student-

level. As Hox (2002) indicated, in multilevel research variables must be “defined at any level of hierarchy. Some of these variables may be measured directly at their natural level (others) may be moved from one level to another by aggregation or disaggregation. Aggregation means that the variables at a lower level are moved to higher level” (p. 2). In our case, this was achieved by computing the mean of the students’ perception of teacher support. At the aggregate level this measure assumed a different meaning and eliminated several statistical and conceptual problems. When disaggregated individual level data are analyzed to draw inferences about groups, statistical problems emerge because observations within a group are more similar to each other than those of other groups, for which there is a positive correlation within groups. In this case the assumption of independence that is typical of the traditional methods (e.g., GLM) is violated and therefore provides an incorrect estimate of the standard errors (often there is an underestimation of standard errors - errors of the type of the highest nominal level α).

Student Class Participation. This dimension was calculated considering the number of students that in each class responded at research’s questionnaire.

Analytical Approach

For the purpose of present study, data were conceptualized as a two-level Multilevel Modeling (MLM) in which students (level-1 or student-level) were nested within classroom (level-2 or class-level).

Although the variable of student class participation was kept out of the analysis the student that was in a specific class had responded to questionnaire (PYC). Thus, the multilevel analysis was performed by taking 3,362 students and 201 classes into account.

Several data transformations were used to facilitate interpretations of cross-level effects. All predictors and outcome variables were standardized before running a hierarchical linear

model. Level-1 predictors were standardized at level-1. Standardized level-2 predictors were derived from first aggregating level-1 scores to level-2 and then standardizing the level-2 scores at level-2. By standardization we centered and controlled for multicollinearity (Aiken & West, 1991; Marsh & Rowe, 1996; Raudenbush & Bryk, 2002). So all predictors are expressed in terms of deviation from their respective general mean: in this case the intercept may be interpreted as the average satisfaction of a student with an average level of student cohesiveness, an average level of student social support, an average level of teacher support, an average level of supportive class and an average level of student class participation.

In order to test the advanced hypothesis, three models were considered by successively adding main and interaction effects at each of the two levels. So Model 1 examined the fixed main and interaction effects of student-level predictors, i.e. student cohesiveness, student social support, and teacher support on predicting student school satisfaction.

Model 2 added the fixed main and interaction effects of students' perceptions of supportive class with student class participation on student school satisfaction to Model 1 at level-2 only. So in this model only the classroom level-2 variables were added. Moreover, in Model 2 student class participation plays the role of a covariate variable to control for potential confounding effects that may bias the cross-level interaction.

In this study the slope relating student cohesiveness to student school satisfaction, student social support to student school satisfaction and teacher support to student school were considered to be fixed. While a fixed slope indicates that level-1 relations are homogeneous across classrooms, a random slope indicates that level-1 relations vary across classrooms. But this last hypothesis was not considered in this study.

Finally, Model 3 added to model 2 the fixed moderation effects of class-level support on the relationship among student cohesiveness, student social support and teacher support in predicting student school satisfaction. Regarding this objective we expected that students'

perception of a supportive class would moderate the relationship between teacher support and student school satisfaction and between student cohesiveness and student school satisfaction. The hypotheses that we tested in Model 3 were cross-level interactions as the interaction between level-1 and level-2 variables was involved. The cross-level interactions between these components can be interpreted as a statistical moderation effect (Baron & Kenny, 1986; Raudenbush & Bryk, 2002).

The only random effect allowed was that of intercept in all of the three models considered. For the purpose of comparison, a Model \emptyset was also tested, in which only the fixed and random effects of intercept were included. By examining the intraclass correlation coefficient (ICC) this model helped us to understand how much of the variability at level-2 was due to grouping (i.e., class-room grouping) (Raudenbush & Bryk, 2002). Specifically, the ICC represents the proportion of variance in the outcome variable that resided between groups (Liao & Rupp, 2005).

The equation below, represents the final Model 3 and includes the effects of all predictors:

$$\begin{aligned} \text{Level-1: } y_{ij} = & \beta_{0ij} + \beta_1(\text{SSS}_{ij}) + \beta_2(\text{SCo}_{ij}) + \beta_3(\text{TS}_{ij}) + \beta_4(\text{SSS}_{ij})(\text{TS}_{ij}) + \beta_5(\text{SSS}_{ij})(\text{SCo}_{ij}) + \\ & + \beta_6(\text{SCo}_{ij})(\text{TS}_{ij}) + \beta_7(\text{SC}_j) + \beta_8(\text{CSP}_j) + \beta_9(\text{SC}_j)(\text{CSP}_j) + \beta_{10}(\text{SSS}_{ij})(\text{SC}_j) \\ & + \beta_{11}(\text{SCo}_{ij})(\text{SC}_j) + \beta_{12}(\text{TS}_{ij})(\text{SC}_j) + r_{ij} \end{aligned} \quad (1)$$

$$\text{Level-2: } \beta_{0j} = \gamma_{00} + u_{0j} \quad (2)$$

where, SSS is Student Social Support, SCo is Student Cohesiveness, TS is Teacher Support, SC is Supportive Class and where, at level (1) of equation, y_{ij} is satisfaction of the i -th student in the j -classroom, (SSS_{ij}) , (SCo_{ij}) , (TS_{ij}) are the observed level 1 predictor for observation i nested within group j , β_1 , β_2 , and β_3 are the fixed regression effect of (SSS_{ij}) , (SCo_{ij}) , and (TS_{ij}) within group j , respectively on y_{ij} . Further, β_{0j} is the intercept of the regression equation for

group j , β_4 , β_5 , and β_6 are the fixed interaction effects between (SSS_{ij}) and (TS_{ij}) , between (SSS_{ij}) and (SCo_{ij}) , and between (SCo_{ij}) and (TS_{ij}) level-1 predictors, respectively, and r_{ij} is the observation-and group-specific residual. β_7 and β_8 are the fixed regression effects for the level 2 predictors (SC_j) and (CSP_j) , respectively, and β_9 is the fixed regression coefficient for the interaction between (SC_j) and (CSP_j) . The three cross-level fixed interaction effects between (SSS_{ij}) and (SC_j) , between (SCo_{ij}) and (SC_j) , and between (TS_{ij}) and (SC_j) are represented by coefficients β_{10} , β_{11} , and β_{12} , respectively.

At level 2 of the equation, the group's intercept is expressed as a function of the fixed mean intercept (γ_{00}). A residual term (μ_{0j}) that captures random classroom (j) deviation from the central mean (intercept) is also expressed.

Using the Mixed command in the SPSS Mixed Procedure to fit cross-sectional multilevel models, this study applied the Restricted Maximum Likelihood method to simultaneously estimate the unstandardized regression coefficients.

Results

Descriptive Statistics

Predictive validity of measures was assessed by correlating teacher support, student cohesiveness, student social support, supportive class and student class participation scores with outcome variable, i.e. student school satisfaction (see Table 1).

Table 1. Means, Standard Deviation and Correlations of Predictors at Student-Level and at Class-Level and of Student School Satisfaction

	M	DS	1	2	3	4	5	6
1 Supportive Class	2.520	.270	1					
2 Teacher Support	2.517	.670	.395**	1				
3 Student Cohesiveness	2.927	.592	.304**	.247**	1			
4 Student Social Support	2.857	.697	.193**	.415**	.246**	1		
5 Student School Satisfaction	6.652	1.604	.110**	.486**	.459**	.250**	1	
6 Student Class Participation	18.30	6.558	-.020	-.005	.016	.002	.019	1

Pearson's correlation were significant at $p < .01^{**}$

Unconditional Model (Model \emptyset)

A preliminary step in our MLM analysis involves fitting an unconditional model and examining the variance of the dependent variable that was due to differences between classes. In our sample ICC was about 11% for school satisfaction. The estimated class variance was statistically significant ($\text{Wald}Z_{(3562)} = 6.681, p < .000$) and of sufficient size to proceed with multilevel analyses. Moreover, these findings illustrate the potential importance of considering variation on a class-level.

Student-level variables effects (Model 1)

Hypothesis 1 predicted that student school satisfaction would be influenced by teacher support, student cohesiveness, and student social support. Supporting Hypothesis 1, the results in Table 2 show that among Level 1 predictors, both student social support ($\beta_1 = .061, p < .05$), student cohesiveness ($\beta_2 = .634, p < .000$), and teacher support ($\beta_3 = .684, p < .000$) were significant predictors of student school satisfaction.

Table 2. *Multilevel results for Student School Satisfaction*

	Model 0	Model 1	Model 2	Model 3
<i>Fixed Effects</i>				
<i>Student Variables: Directs Effects</i>				
γ_{00} Intercept	6.717475***	6.706161***	6.12961***	6.740841***
β_1 Student Social support		0.061187*	0.062539**	0.066805**
β_2 Student Cohesiveness		0.634104***	0.634873***	0.637355***
β_3 Teacher Support		0.684469***	0.666910***	0.659023***
β_4 Student Social support x Teacher Support		-0.014478	-0.012772	-0.002590
β_5 Student Social support x Student Cohesiv.		0.036548	0.034945	0.034742
β_6 Student Cohesiveness x Teacher Support		-0.027295	-0.028896	-0.044471
<i>Fixed Effects</i>				
<i>Classroom Variables: Directs Effects</i>				
β_{10} Supportive Class			0.090837*	0.094394**
β_{20} Student Class Participation			0.020187	0.013038
β_{30} Supportive Class x Class Student Particip.			0.026844	0.012668
<i>Fixed Effects</i>				
<i>Cross-level Interaction Effects (Student x Class)</i>				
β_{11} Supportive Class x Student Cohesiveness				0.051797*
β_{21} Supportive Class x Student Social Support				-0.006887
β_{31} Supportive Class x Teacher Support				-0.079309**
<i>Random Effects</i>				
$\sigma^2_{\tau_{ij}}$ Intercept	2.353876***	1.472354***	1.469806***	1.467341***
<i>Random Effects</i>				
$\sigma^2_{u_{ij}}$ Intercept	0.292204***	0.099727***	0.095787***	0.092064***

Note: the dependent variable in this analysis come from the following survey questions: a) How satisfied are you with what you study? b) How satisfied are you with your classmates? c) How satisfied are you with your teachers? The variable at class-level Supportive Class come from measure aggregate of students' perception of teacher support at student-level. The variable at class-level Student Class Participation came from the calculated number of students that in each class responded at research's questionnaire.

*p < 0.05; **p < 0.01; ***p < 0.001.

Furthermore, no interaction was found between student social support and teacher support, between student social support and student cohesiveness, between student cohesiveness and teacher support.

These findings confirm the hypothesis that students' perception of student cohesiveness, student social support and teacher support, only had main effects on student school satisfaction.

Class-level variable effects (Model 2)

Model 2 includes the effects of class-level variables. Table 2 shows that at level 2 only supportive class ($\beta_7 = .091, p < .05$) had a significant and positive relationship with student school satisfaction.

These results support Hypothesis 2. Class student participation was not a significant predictor of school student satisfaction. Moreover, no interaction was found between supportive class and student class participation.

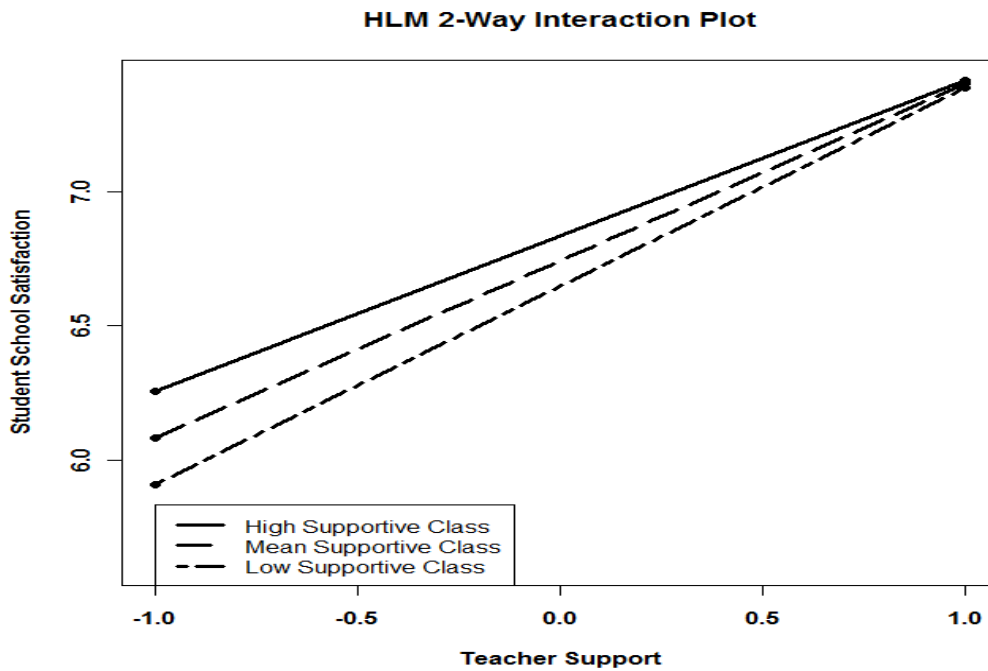
Cross-level interactions (Model 3)

The results regarding Model 3 are shown in Table 2. The interaction of supportive class and teacher behavior was significant ($\beta_{12} = -.079, p < .001$). The result supports Hypothesis 3a since in classrooms with low support (Figure 1), the relationship between teacher support and student satisfaction was higher than in classrooms with high support. We analyzed this interaction further by considering a simple slopes analysis (Aiken & West, 1991; Preacher, Curran, & Bauer, 2006; Bauer & Curran, 2005; Curran, Bauer, & Willoughby, 2006).

We estimated slopes at three levels of supportive class: the mean, and one standard deviation above and below the mean. Results showed that when class-teacher support was high the relationship between student teacher support and student school satisfaction was positive and significant ($b = 0.17, z = 4.09, p < .000$). The relationship was still positive and significant at the mean values of the class-teacher support ($b = 0.09, z = 2.67, p < .000$). While when supportive class was one standard deviation above the mean the relationship is no more significant ($b = 0.01, z = 0.37, p > .05$).

Hypothesis 3b predicts that supportive class moderates the relationship between student cohesiveness and student school satisfaction.

Figure 1 Moderate Effects of Supportive Class on Relationship between Teacher Support and Student School Satisfaction.

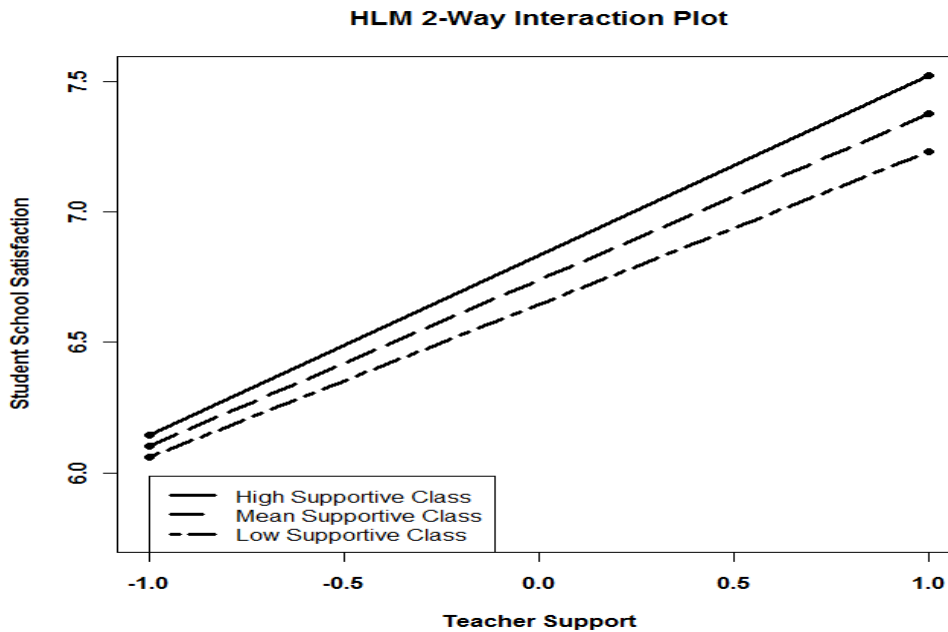


The interaction of supportive class and student cohesiveness was positive and significant. Table 2 showed that supportive class had significantly moderated the relationship between student cohesiveness and student school satisfaction ($\beta_{10} = .052, p < .05$). In particular, in classrooms with high support (Figure 2), the relationship between student cohesiveness and student satisfaction was higher than in classrooms with low support (i.e., supportive class). Also in this case we considered simple slopes analysis (Aiken & West, 1991; Preacher, Curran, & Bauer, 2004; Bauer & Curran, 2005; Curran, Bauer, & Willoughby, 2006).

We estimated slopes at three levels of supportive class: the mean, and one standard deviation above and below the mean. Results showed that when class support was low, the relationships between student cohesiveness and student satisfaction was positive but not significant ($b = 0.043, z = 1.003, p > .05$). While when class support is average, the relationship was positive and significant ($b = 0.09, z = 2.67, p < .001$). Finally, when class

support is one SD above the mean the relationship was positive and significant ($b = 0.146, z = 3.31, p < .000$).

Figure 2 Moderate Effects of Supportive Class on Relationship between Student Cohesiveness and Student School Satisfaction.



The patterns of these cross-level interactions can be typified as ordinal interactions, in which nonparallel lines do not cross over within the range of interest (Lou & Nie, 2008). For the variables that generate interactions, the interaction pattern was of the ordinal type, signifying that the main effects can be utilized to summarize the overall predictor-outcome relations (Lou & Nie, 2008).

Discussion

Findings of this study provide insight into the nature of the influence that specific dimensions of “living-together” in classrooms may have on students’ school satisfaction, at both student- and class-levels. Separating this influence across two levels in the unconditional model, the results demonstrated significant variation in satisfaction of students across them.

From a methodological perspective, these results support the use of multilevel modelling (MLM) techniques for analysis of the data in the present study, as the hypothesis (the impact of predictors at student- and class-levels, and of interplay of the student-level and class-level on student school satisfaction) and the data were multilevel in nature (Raudenbush & Birk, 2002), i.e. students nested in class. Specifically, we adopted a cross-level approach to answer the main aims of this contribution, which was to examine how a supportive class context moderates the relationships between variables measured at student-level (i.e., teacher support, student social support and student cohesiveness) and students' satisfaction of their lives in the classroom.

This methodological framework allows us to better understand the complexity of the interactions between these individual and contextual dimensions. In fact, to our knowledge, this is the first study of its kind to examine the influence of the supportive classroom environment on student satisfaction by simultaneously considering the effects of these specific, relevant, individual and contextual dimensions in predicting students' satisfaction.

Following a hierarchical approach (see Hox, 2002), we first investigated the associations between variables at student- and class-level with students' school satisfaction, and then we explored cross-level interactions. Regarding class-level, our findings were as expected and showed that student cohesiveness, student social support, and teacher support were linked to student school satisfaction. In particular, teacher support and student cohesiveness had a greater weight in predicting student satisfaction. These results are consistent with previous studies that have shown that supportive teachers promote students' awareness of their capacities for learning, facilitate the development of students' ambitions (Danielsen et al., 2009), further perceptions of respect and perusing (Syvertsen, Flanagan, & Stout, 2009) and contribute to their scholastic satisfaction, sense of belonging and wellness. Moreover, our results are in line with DeSantis King and colleagues (2006), who argue that

while teachers play a fundamental role when considering how satisfied a student feels with school, teacher support was a necessary but not sufficient factor, and that the role of classmates remains significant in influencing young people's school satisfaction and well-being.

In regard to the second aim, to analyze the direct effects of class-level variables on students' satisfaction, we assumed the hypothesis that the classroom is the most basic context of the education process and thus a possible starting point to explore the association between young people's learning and relationship experiences with their educational environment (Ting, 2000). In fact it has been repeatedly noted that students feel more satisfied and secure in classes in which they perceive that teachers are respectful, careful, and engaged in creating a supportive and successful environment (DeSantis King et al., 2006; Miller & Pedro, 2006).

In our study, two class-level dimensions, such as a supportive class (i.e., aggregated measures of teacher support at student-level) and student class participation (i.e., class size of number of students to respond to the questionnaire in each class; Avallone, 2007), were also examined as predictors of student school satisfaction. In support of our conceptual analysis, we found that a class perceived as supportive influences the satisfaction of students with their classmates, teachers, and studies (i.e., student satisfaction). This study not only bolsters the wide influence that supportive teachers have on various domains of student life, but also provides evidence that a supportive class in which the teacher is supportive and caring can promote student satisfaction with the school as well as student well-being (Danielsen et al., 2009; Ting, 2000; Ware, 2006). Another important result at this level concerns the non-significant interaction between a supportive climate and the size of the class, because it indicates that the number of students involved does not influence the effects of cross-level interactions. Reducing class size is often mentioned as a way to improve academic performance, however, some authors who have been involved in the study of classroom

climate suggest that class size alone may not influence school satisfaction (e.g., Verkuyten & Thijs, 2002), school adjustment (van del Oord & Van Rossen, 2002) or the perception of school climate (Koth et al., 2008) in elementary school. Our results are similar to these findings and show that also in high school the size of the class-group of students who participated in the research does not influence the level of satisfaction. This finding also supports our hypothesis that the moderating effects of a supportive class on the relationships between the predictors at the first level and students' satisfaction are not affected by these dimensions. Taken together, the results of our study at these two levels add further evidence for findings of previously mentioned studies, highlighting that student- and classroom level factors have greater influence on students' satisfaction with their relationships with classmates and teachers in the classroom and thus with their living-together in the classroom. At the same time our analysis extends these results by providing a cross-level framework for better understanding how the class context may interact with individual perceptions of classroom climate factors to affect individual satisfaction. The main contribution of our study consists in this analysis, as it furthers the understanding of the interplay of individual and class predictors of students' school satisfaction and connects students' perceptions of student cohesiveness, student social support, teacher support, and classroom environment (i.e., supportive class or teacher support at class level).

In our conceptual analysis we assumed that support from teachers is the dimension with the most significant bearing on students' school satisfaction, whether it is perceived as personally addressed (e.g., Bandura, 1997), or perceived as a supportive class (Bong & Skaalvik, 2003; Danielsen et al., 2009; Eccles & Wighfiel, 2002; Rowe et al., 2010). From this point of view we expected that a supportive class would moderate the relationship between teacher support and students' school satisfaction. Moreover, because a sense of belonging and cohesion was found to be related to teacher support (DeSantis King et al.,

2006; Miller & Pedro, 2006), we expected a supportive class to moderate the relationship between student cohesiveness and students' school satisfaction. This hypothesis has received empirical support from our findings of cross-level interactions. We found that in classrooms with less support, the relationship between teacher support and student satisfaction is higher than in classrooms with high levels of support. In other words, in classes where students perceive a highly supportive climate, the satisfaction of school students was less affected by individual perceptions of support from teachers than in classes in which students perceived a less-supportive climate. The result is in line both with our hypothesis and with the literature, and could indicate that the perception of the teacher's support of each student is what counts in predicting satisfaction. In primary school teachers are seen as a potential attachment, pedagogue and disciplinarian figure (Furrer & Skinner) and the constant monitor of effective networks of class-group relationships. In this line this cross-level interaction supports the proposition that also in high school a supportive classroom climate and particularly teacher support are especially powerful.

We also found that in highly supportive classrooms, the relationship between student cohesiveness and student satisfaction was higher than in classrooms with less support. This finding suggests that in classrooms in which teachers create a supportive environment (e.g., Midgley et al., 1989), students perceive a sense of cohesion and belonging, are doing well in class and are comfortable with their classmates, are likely to be more satisfied with the scholastic environment and feel a sense of well-being. Moreover, there is no interaction between a supportive class and student social support in predicting satisfaction. Finally, it is interesting to note that in the complete model the level of significance, the direction and weight of the main effects and interactions in predicting satisfaction of the level-1 predictors remained almost unchanged.

The findings of this study are by and large consistent with the literature that stresses the pervasive role of the perception of positive relationships in explaining students' satisfaction and well-being and confirms that the more students perceive their class as a place in which living-together is comfortable and safe, the more satisfied they are with their classmates, teachers, and their lives (Baker et al. 2003; Baker et al., 2002; Masten, 1994). At the same time, these findings contribute to the student school satisfaction literature by demonstrating that a supportive class context is an important moderating influence on individual difference-satisfaction relationships. Our results also testify to the usefulness of a cross-level perspective for understanding the satisfaction of students (Baker et al., 2003; DeSantis King et al., 2006). Moreover, the non-linear interaction between teacher support and a supportive class, and between student cohesiveness and a supportive class, extends the literature concerning teacher support to students by providing more information about how this affects satisfaction when the individual- and the context-levels are considered simultaneously.

In agreement with Koth and colleagues (2008) these findings can contribute to enhancing the recent interest in student-group interactions in educational research and practice, because they provide further evidence that classroom environment that support and assure students may changing the relationships between student perceptions of "living-together" and their satisfaction. In this view, our result also may offer a small but significant contribute to understand the influence of context on individual perceptions.

Implications for Practice

From an applied perspective, we maintain that the results of this study are encouraging because they support the idea that quality of environment and positive "living-together" in the classroom are protective, and promote factors of health and therefore students' academic and personal success. In this way, future preventive and promotional interventions could be

developed by teachers and educators using the strength of the relationships between the examined dimensions in this study to create an environment facilitating satisfaction and student well-being. Our results, in line with the literature, show that both the individual and contextual dimensions are relevant to producing determined effects that influence students' school satisfaction and their general well-being (Ware, 2006).

In particular, our results showed that teacher support was positively correlated with student satisfaction with the school both at student-level and class-level. In this sense, the findings underline the importance of studying the students' perceptions of classroom climate and life in the classroom in its specific dimensions, in a multilevel framework that considers the reciprocal influence of individual behaviours and contextual characteristics in determining their satisfaction and well-being. This is a very important element to consider because for example, if the analysis considers only the student-level, the findings alone cannot be directly translated into suggestions for practical application in educational environments, as interventions that include changing teachers' classroom styles of teaching are usually implemented at a class-level (Ting, 2000).

Therefore, taking into account the results of the analysis at level-1 and at level-2 only and the cross-level interactions, one could say that emphasizing one aspect or the other would be sufficient to increase satisfaction. In fact, in classes that are perceived as supportive, student satisfaction is higher than in classes that are perceived as less supportive, but in the classes where less support is perceived, the perception of support given by teachers to students positively influences student satisfaction. Given our results, which are in agreement with previous studies (e.g., Ware, 2006) effective teachers must be able to create a classroom context that motivates students to develop reciprocal support, cohesion, loyalty and respect for each other, as well as be able to understand the effects of their behaviour on individuals, and to support each student in the same way.

Furthermore, our study also particularly underlines the fact that we must consider the individual in his/her context (Hirst, Van Knippenberg, Zhou, 2010). Cross-level results corroborate the conclusion that it is the combination of individual perception of living-together's factors and supportive environment that makes it a necessary teacher task to create an environment which offers support to everyone at the same time and to each individual in particular. This consideration highlights the need for leadership that promotes reflection and learning and creates a satisfying psychological environment, which is safe for discussion and exploration in a way that is advantageous for all (e.g., Edmondson, 1999) Furthermore, if the objective of the teachers is that of the satisfaction of all students, seeing the link this has with academic results and student's positive wellbeing (Bong & Skaalvik, 2003; Danielsen et al., 2009; Eccles & Wighfiel, 2002), we argue that in order to be effective and ensure that their students' needs are met, teachers should foremost be engaged in creating an environment that all students can perceive as supportive, and in which young people can perceive and develop cohesion and positive relationships with their teacher and each other. It would be most efficient to invest in educational practices as this could reduce the efforts of teachers in helping all of their students to be content in class, increasing the level of satisfaction and consequently levels of learning and success. This is speculation on the basis of our findings, and future studies could further develop these ideas.

Strength, Limitations and Future Directions

To our knowledge the current study is the first that used cross-level analysis to examine the influence of supportive classroom environments on student satisfaction by simultaneously considering the effects of specific predictors measure at student-level (e.i., teacher support, student support and student cohesiveness) and contextual dimensions (e.i., supportive class and student class participation). In addition, this study includes a large sample of Italian

students, 224 classrooms and a range of ages across two different grades (10th and 12th) of high school, and a design that nests students within classes, which allows us to use multilevel analysis to gauge the simultaneous and separate influences of individual and class factors on student school satisfaction.

Thus, this dissertation, produced several consistent information about relationships between dimensions of “living-together” in classroom that influence student well-being, and thus a more accurate picture of person-context interactions.

The present study has limitations. Firstly, the sample was large but not nationally representative. Nevertheless, the advantage of a large data set is that it provides valuable information on high school students’ perceptions of what happens in a classroom that influences their well-being. Secondly, our measures were based on students’ self reports, which were their subjective interpretations of student and teacher behaviour that comprise the atmosphere of life in the class. To overcome some of the disadvantages of self-report procedures, the measures were kept private in order to reduce social desirability responding.

Not all the literature agrees on the use of students’ perception although many researchers have argued that in several domains, including the classroom climate and student school satisfaction, subjective perception is more important. For example, Cranton and Smith (1990) stress that “When individual students within one class are the units of analysis, the variation in ratings reflects individual differences in the perceptions of students. When class means are the units of analysis, the variation should reflect perceived differences among teachers ... When individuals students’ ratings across different classes are used, the variation due to teachers cannot be separated from the variation due to individual perception” (pp. 208-208). Moreover, aggregation of student perceptions reduces measurement and other unsystematic errors and thus produces more reliable data (Lau & Nie, 2008). Nevertheless, in future studies it would be advisable to rely upon various methods and informants across

situations to minimize bias because of self-reporting (Howard & Dailey, 1979). In addition, it is important that future research is carried out, taking into account more detailed information regarding class characteristics.

Thirdly, the present cross-sectional design did not allow us to determine the stability of the effects of a supportive classroom on students' school satisfaction. This design could only capture the product of a series of potential complex processes at a particular point in time, but the specific processes involved remain unclear (Lau & Nie, 2008). Longitudinal studies are needed to determine the causal relationship with perceived supportive classrooms.

Finally, only adolescents were used as informants for the key variables utilized in the study. Future research might use different informants, such as parents and teachers, to compare with adolescents' self reports.

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CHAPTER V

GENERAL CONCLUSIONS AND DISCUSSION

Conclusions

The present dissertation aimed to analyze the “Living-Together” in classroom in students of High Italian School, considering:

- the dimensions of this construct that Avallone and colleagues (2007) identified in social, affective and organizational context and the translation of these dimensions in scholastic organization, analyzing the psychometric characteristics of the instrument that measures the “living-together” in classroom (PYC - “How Do You Perceive Your Class?”) ;
- the combination of “living-together” in classroom dimensions with students satisfaction, student values, student internal locus of control and other socio-anagraphic data in define different profiles of high students’ *stiles of living-together in the classroom*;
- the influence of “living-together” dimensions at level of student and the “living-together” dimensions al level of group class in influencing the scholastic satisfaction of students.

We will discuss the overall findings of the dissertation emphasizing these three issues. Finally, strengths and limitations of the dissertation and implications for future studies and for classroom practices will be reported.

The Construct of “Living-Together” in Classroom

Studying perceptions’ that students have of the their classmates’ characteristics and behaviors and of their teachers’ behaviors and thus their perception of what happens in classroom is important because of the pivotal role that school plays in many spheres of adolescents’ lives (Vieno, Santinello, Pastore, & Perkins, 2007) and in building their future (Cohen, 2006).

Following studies of Avallone and colleagues (2007) regard “living-together” in various context, in our first study we have examined the dimensionality and internal consistency of the instrument developed (Avallone, 2007) to assess the student perception of “living-together” in classroom (PYC - “How Do You Perceive Your Class?”) and the extent to which its factor structure would be invariant across 10th and 12th grades of high school (that refer to 2nd and 5th grades respectively of Italian secondary school. Specifically, 5th grade of secondary school in Italy and 12th grades oh high school in USA are both the last years of high school in the two countries)).

Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were conduct on two different samples (i.e., 10th and 12th grades) in order to test the factorial structure of the scale (the hypnotized ten solution). Then the Cronbach’s Alpha and corrected item-scale correlations were computed to verify the internal consistency of instrument. Finally three steps of invariance (configural, metric and scalar) was performed to test if the factorial structure of PYC were replicated across grades (i.e., 10th and 12th).

EFA and CFA and reliability results confirmed the goodness of questionnaire in terms of factor structure and internal consistency. In particular EFA and CFA provide support of the ten-factor model hypothesized.

Specifically, the theoretical dimensions that resulted in the empirical investigation were: student loyalty, student negotiation, teacher support, teacher equity, student assertiveness, student

rules orientation, student cohesiveness, student social support, student cooperation and student power orientation.

Also regarding the verify of the invariance of measure among grades, the resulting full invariance confirmed hypothesis and provides empirical evidence that the fundamental meaning of the constructs has not changed across the different grades.

In addition, the low moderate correlations among the ten factors of the PYC suggested that these factors tapped distinct aspects of the same construct. The magnitude and direction of the correlations among dimensions that regard student characteristics and behaviors showed links with findings in the literature when highlighted that peers have a peers' pivotal role in adolescents' school satisfaction and well-being (e.g., DeSantis King, Huebner, Suldo, & Valois, 2006; Ennett & Bauman, 1994; Epstein & McParland, 1976;) and that they represent significant reinforcement and models of behavior.

As well the moderate correlations between "living-together" dimensions that concern behaviors of teachers (support and equity), are in accordance with the findings of literature that showed positive effects of supportive, fairness and democratic teachers in predict student satisfaction and well being (Thorkildsen, Sodonis, & White-McNulty, 2004).

In the Second Study (Chapter III), in order to help teachers and educators to learn more about the different types of students can attend classes where they teach, we are interested to study as the dimensions that assess the students' perception of living together could be combined with other variables that affect their satisfaction, their values and the perceived internal locus of control to identify and define different styles of "living-together" in classroom.

To this end, we adopted the person-oriented approach (Bergman & Magnusson,1997; Magnusson, 2001; Magnusson & Cairns, 1996), in which the individual is viewed as an integrated psychological, biological, and social organism, and cluster analysis methods (Bergman & El-

Khouri, 2002) to identify homogeneous configurations of students who were similar along the dimension mentioned above and that we deemed relevant for understanding “who are” and “how are” students that attending in classroom.

The large number of variables were related to test the existence of homogeneous profiles of students’ *styles of living-together in the classroom*, to our knowledge is not reflected in the literature, while many years earlier studies showed associations between different variables we considered in influencing several young’s outcomes. For example, many studies have been showed that student satisfaction and well-being is associated to peer and teachers social support (Baker, Dilly, Aupperlee, & Patil, 2003; DeSantis King, Huebner, Suldo, & Valois, 2006; Demary & Malecki, 2002), to respect and clarity of rules (Baker et al., 2002) and to internal locus of control (Huebner & McCullough, 2000).

The results of this study led to the identification and definition of a four cluster solution. The cluster appear to be mirrored in twos. In the first cluster, the students that we briefly described as “*supportive/proactive students*” seemed to have perhaps an overly idealized vision of living-together in the classroom. On the contrary, the opposite profile “*intolerant/passive students*” showed a group of students that seemed be apathetic and have a negative vision of classroom, who saw class as a bad place where there is no respect or tolerance for rules, let alone support and loyalty among students.

Respect the other two groups, we have defined “*self-centered students*” as the group of students who showed positive scores almost exclusively in the dimensions regarding relationships with peers and personal relationships, but not those addressed to working together and belonging to the class. On the contrary, students who were defined as “*respectful students*” showed greater orientation to perceived in class aspects of tolerance and responsibility. And had more positive perceptions of teachers, who they saw as supportive and fair.

In the Third Study (Chapter IV), given the multilevel structure of our data (i.e., students nested in the classes), we adopted a hierarchical perspective that provide a new vision of how constructs operate at the individual and group levels and that pays particular attention to the distinction between personal and contextual levels (Lau & Nie, 2008). Considerer the hierarchical nature of data is strongly recommended to improve the interpretation of the data and the quantity and quality of information. In fact, as amply demonstrated (e.g., Bickel, 2007) when data not randomly assigned to a group, hierarchical structure of data is ignored and single level analysis is adopted, results could be distorted and contradictory, because there is the risk that individual student characteristics and characteristics of classes they are attending could be confused.

In this contribute (Third Study), on the basis of literature that showed the importance of student school satisfaction in adolescent develop (e.g., Danielsen, Samdal, Hetland, & Wold, 2009; Ryan & Patrick, 2001) and the hierarchical perspective, the main purpose was to examine whether and how a supportive environment (i.e., level-2 variable) moderate the relations between predictors at level-1 (i.e., student cohesiveness, student social support and teacher support) with outcome variable at level-1 (i.e., student school satisfaction).

Our results showed that a supportive class moderate the relations between teacher support and satisfaction and student cohesiveness and satisfaction.

Specifically, our findings demonstrated that in classroom where students perceive high support their satisfaction is less affected by individual perceptions of support from teachers than in class with low supportive climate. Moreover, our results indicated that in classroom strongly supportive the relationship between student cohesiveness and student school satisfaction is higher than in classroom with low support. In addition, also variables at level-1 and level-2 (except student class participation) were found associated with student satisfaction, because all predictors at student-level and supportive class (level-2) influencing satisfaction of student with school.

Implications for Theory and Practice

Results of this dissertation contribute to knowledge of “living-together” at school. In fact, findings of First Study (Chapter II) that have demonstrated good psychometric properties and structural invariance of the PYC and thus a good generalizability of this instrument, are a loud reinforcement for the validity of the “living-together” construct in scholastic organizations and in measuring how young people perceive life-together particularly in the classroom environment. Our interest in this topic becomes by decade-long research in school and educational psychology that have showed strong correlation between school and classroom environments and students’ life and academic outcomes (e.g., Baker et al., 2003; Miller & Pedro, 2006).

One of the main objectives of this dissertation was to have evidence to suggest school practices in particular to teachers and educators. Despite the limitations, we believe that the results of these studies can contribute to this goal.

In general, our findings confirmed that students’ perception of positive and meaningful relationships with peers and teachers and in particular of a supportive environment may be factors promoting their wellness. The promotion of wellness and satisfaction in children and young at school is one of the most important factors that must be taken into account in school psychology practice (Baker et al., 2003), because the key role of they play in protecting and promoting of health and students’ academic outcomes and in reducing problem and risk behaviors (DeSantis King et al., 2006).

In particular, findings of Second Study (Chapter III), could help teacher better know “who are” and “how are” student that attending in classroom in which they teach. In addition these results provides to confirm that some dimensions of “living-together” in classroom, and then of classroom emotional and relationship environment, are strongly connected. In fact, the profiles of students’ *styles of living-together in the classroom* that emerged from the cluster analysis, indicates that some behaviors, characteristics and perceptions of young people in class, are closely

related to each other so as to form a homogeneous configurations. For example, in groups in which were high satisfaction with teachers there were high perception of teacher support, respect of rules and satisfaction with subject of own studies.

These results were stressed and emphasized by those of third contribute (Chapter IV) that, in a hierarchical prospective, showed the pervasive influence that supportive behaviors of teachers have in determining the student school satisfaction. In fact, by results of this study emerged personal and contextual characteristics and dimensions interact (i.e., supportive environments created by teachers) with individual dimensions (i.e., teacher and classmates support and cohesion among students) to influencing the personal student satisfaction.

Thus, if schools and teachers are interested in promoting students' wellness and satisfaction and, in turn to reducing problem behavior, then they must pay great attention on students' perception of their live-together in class, particularly on the support provided their student, because young evaluations of the positivity of their experience in classroom ply and important role in their life (DeSantis King et al., 2006).

The influence that teachers have in creating a positive classroom environment suggest that they need to become more skilled in their ability to understand and evaluate the effects that classroom context have in student behaviors and well being and in develop responses that can build an environment in which student are encouraged to get to know each other, share ideas, feel safety, appreciation and acceptance of own and classmates ideas and in which they perceive respect and tolerance, as well as compliance with the rules and discipline. In this way teachers create environments of success and wellness.

Strengths, Limitations and Future Directions

In this dissertation there are several strengths. First, regarding the study presented in Chapter II, to our knowledge, no study in the assessment of classroom climate have yet

analyzed all the dimensions as we have done with the PYC. Moreover, although the ten PYC dimensions (see Chapter II) are common in the literature of classroom climate, their combination into a single instrument is unique.

Then, regarding the Second Study (Chapter III), in the literature to our knowledge, there are no references that have analyzed students' profiles which include dimensions that can refer to some of those used in our study. However, there are several longitudinal and cross-sectional studies that can support the groups' composition of students' *styles of living-together in the classroom*.

Finally, regarding Third Study (Chapter IV), to our knowledge it is the first that used cross-level analysis to examine the influence of supportive classroom environments on student satisfaction by simultaneously considering the effects of specific predictors measure at student-level (e.i., teacher support, student support and student cohesiveness) and contextual dimensions (e.i., supportive class and student class participation). In addition, this study includes a large sample of Italian students and around 224 classrooms which allows us to use multilevel analysis to gauge the simultaneous and separate influences of individual and class factors on student school satisfaction.

This studies had limitations. Although the sample was large it was not nationally representative, nevertheless, the advantage of a large data set provides valuable information on high school students' perceptions of occurrences in classrooms that influences their well-being.

Secondly, the studies was limited to self-report measures. To surmount some of the disadvantages of self-report procedures the measures were reserved private in order to reduce responding in a socially desirable way.

Third, the cross-sectional of this dissertation did not allow us to determine the stability of the construct over time (see Study 1 - Chapter II), of the cluster over time (see Study 2 - Chapter

III) and effects of classroom supportive on students' school satisfaction over time (see Study 3 - Chapter IV). In future longitudinal studies are needed to determine the goals mentioned above.

Finally, only adolescents were used as informants for the key variables utilized in the studies. Future research might use different informants, such as parents and teachers, to compare with adolescents' self-reports and minimize bias due to self-report (Howard & Dailey, 1979).

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