

**Academic optimism and achievement:**  
The impact of student-teacher trust,  
identification with school  
and perception of academic press  
in Portuguese Basic Schools

Isabel Maria de Barros Inácio de Almeida e Brito

Tese para obtenção do Grau de Doutor em  
Educação



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**Orientadora:** Prof.<sup>a</sup> Doutora Ema Patrícia de Lima Oliveira  
**Co-orientadora:** Prof.<sup>a</sup> Doutora Ludovina Maria de Almeida Ramos

**Janeiro 2025**



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**VERSÃO FINAL APÓS DEFESA**

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**Covilhã, 16 de Dezembro 2024**



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Eu, Isabel Maria de Barros Inácio de Almeida e Brito, que abaixo assino, estudante com o número de inscrição D 2595 do Doutoramento da Faculdade de Psicologia e Educação da Universidade da Beira Interior, declaro ter desenvolvido o presente trabalho e elaborado o presente texto em total consonância com o **Código de Integridade da Universidade da Beira Interior**.

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Universidade da Beira Interior, Covilhã 08 / julho / 2024



# **Dedicatória**

A todos os alunos que confiam nos seus professores.



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## Preface

I am part of a group of friends who founded in 2001 a non-profit association, named APECEF – Associação para a Educação, Cultura e Formação (Estatutos da APECEF), in which I have since had a leadership role. APECEF started a small pre-K and Elementary school in Lisbon with 120 students, in 2004. In 2023, we are responsible for five schools from Pre-K to 12<sup>th</sup> Grade, with more than 2000 students. This adventure made us very aware of the centrality, potency, and sensitivity of the experiences of trusting, of identifying with a school and of feeling the urge and the hope that our schools be communities of learning. How come some parents trust us to the point of enrolling their children in our school? How is it possible that the students themselves trust us? How can that trust endure, through our imperfections? Is it good for our students to identify with the school? What does it mean? How can we enhance learning? And how can we be sure that it is happening? All these questions and much more have not only interested us from a theoretical point of view, but jump from our day-to-day life and make us eager to attain grounded practical answers.

Observing those phenomena, suffering those phenomena, encouraged me to study them thoroughly, comparing our reality with scientific research and trying to extract from our data some new discovery, or some contribution to what others have discovered. The core of the phenomenon that I try to analyze is that experiencing our fragility as adults and educators and observing that students have that experience too, we have at the same time experienced the positive relationships that emerge when that fragility is assumed and addressed in specific modalities. The structure of my work is impacted by the complexity and the interrelations of various factors that seem obvious and crucial when living school life, although they challenge the need for clarity and simplicity of analysis. The choice for following the constructs of student-teacher trust, student identification with school and academic press was based on their being both broad and clear enough and already proven interrelated, to the point of forming a composite construct named student academic optimism, that impacts academic outcomes (Tschannen-Moran et al., 2013). The challenge of quantitative analysis interested me because of its claim of facilitating a rigorous look at reality, making it possible to express feelings and perceptions in abstract figures that can be easily compared. Applying it in our schools attracted me for the possibility it rises of better understanding what students really perceive and speak. The empirical component of the present research was thus implemented within two of the schools belonging to APECEF, Colégio de S. Tomás, in Lisbon and Colégio de S. José do Ramalhão, in Sintra. APECEF's goal is to create schools capable of responding to contemporary challenges in education

(Projecto Educativo do Colégio de S. Tomás; Projecto Educativo do Colégio de S. José do Ramalhão). After 20 years of labor, both APECEF's teachers and administrators are keen to investigate its dynamics, comparing them with other experiences and analyzing them according to scientific empirical methods, adding to international research with data and respective analysis. A specific educational proposal was developed in these schools, with innovative didactic and pedagogical approaches that aim at enhancing the students' growth in freedom and in knowledge. Central to that proposal is a praxis that focuses on the student-teacher relationship. These features pose various questions to research and practice, that this thesis tries to advance.

The attempt to study our reality, integrating it in a scientific line of research, implied a substantial and methodological problem: how to design a coherent analysis both without ignoring relevant connections to the correct understanding of the object, but also without slipping into confusion (Carmo, 2021)? I tried to answer this question as follows. The object of my thesis is the impact of student-teacher trust, student identification with school and student perception of academic press on students' academic achievement, and the existence of a composite construct, student academic optimism (Tschannen-Moran et al., 2013). An empirical study sustains the analysis of these interconnections in Part II of this thesis, bringing novelty to research that is still scarce, namely in Portugal. These constructs and their mutual impacts provide an adequate conceptual framework, open to multiple liaisons, that I attempt at clarifying in Part I. In fact, while studying these constructs through scientific research and observing how they describe our own experience at our schools, I identified what seems to me a grid of issues that constitute the schools' tissue. These inter-related issues are merely enunciated in the first chapter of this dissertation, in a very synthetic way, because they are not the object of my present study. Nevertheless, I found it important to acknowledge the complexity of the reality of schools, before daring to isolate three elements of that life in order to study them. Furthermore, in the first chapter I tried to show how each of the issues is connected to the constructs of student-teacher trust, student identification with school and students' perception of academic press, hoping for a congruency that can bring light to our quest of better understanding the reality of our APECEF schools, in particular, and of schools in general. Furthermore, I tried to complete this study, not only with that attempt at a previous comprehensive conceptual grid, relating trust, identification and academic press with other issues, in chapter 1., but also inscribing the conceptual analysis of the constructs of student-teacher trust and of student identification with school in the general theory of organizations, in chapter 2., so as to bring forth the links between schools' reality and the challenges of social life. Such an integrating perspective is a contribution to research. In chapter 3., I present the constructs of academic press and of student academic optimism (Tschannen-Moran et al., 2013), as well as the

empirical evidence of the relevance of all these constructs to academic outcomes. The construct of student academic optimism (Tschannen-Moran et al., 2013), results from the conjugation of adolescent students' trust in their teachers, their identification with their school and their perception of the schools' academic press, impacting positively in academic performance. These factors seem essential to a positive school environment and to students' well-being. While each of them has been studied by the international scientific community, their effects and interconnections still challenge research in various angles of analysis and need further verification in different schools and geographies. The proposal of a new construct of student academic optimism, composed with the three mentioned factors, is analyzed recurring to quantitative analysis. Such a composite construct seems very realistic in describing the complexity of relationships that give way to well-being and success in a school environment. Students are people developing, with high sensibility and many fragilities and difficulties, that contrast with many capacities and a need for happiness and success, making them permeate to various inputs and capable of complex reactions, composed of subtle nuances, reacting to stimuli of which adults, namely teachers, are sometimes aware, but many times unaware (Wu et al., 2022). This study may, thus, other than contributing to educational research in general, bring an analysis of what the students in our APECEF schools experience, allowing for improvement. Student academic optimism links the three main factors that influence the student's perception of their experience at school: their personal relationship with their teachers, their institutional relation to their school as a community, and their perception of incentive to learning, the three of them comprising both frailty and hope. My experience attempting to foster students' learning and well-being augmented my interest in the factors that mostly can enhance those features, and to the effort of identifying and making them work. One of the features that seemed clear was the complexity of the various elements and the strong interconnections between them. Discovering the work of Tschannen-Moran and her collaborators brought light to my own intuitions and thus the desire to develop and apply a similar model of analysis within our reality.



## **Resumo**

Os três constructos de Confiança dos Alunos nos seus Professores, de Identificação dos Alunos com a Escola e de Incentivo Académico têm sido reportados pelos investigadores como fundamentais para o bem-estar dos alunos e o seu desempenho académico. A possibilidade de que os três constructos referidos tenham tais conexões entre si que formem também um constructo composto, Optimismo Académico dos Alunos, foi referida pela primeira vez por Tschannen-Moran et al. (2013). Estas mesmas conexões foram identificadas pelo estudo empírico subjacente a esta tese, desenvolvido no âmbito de duas escolas portuguesas, com alunos do 4<sup>o</sup> ao 12<sup>o</sup> ano de escolaridade. O estudo confirmou também o impacto positivo destas variáveis na aprendizagem dos alunos, verificada através das notas finais internas nas disciplinas de Língua Portuguesa e de Matemática. Para este estudo foram desenvolvidos e testados três instrumentos em Português, para avaliar a confiança dos alunos nos professores, a identificação dos alunos com a escola e a percepção dos alunos do incentivo académico. A análise dos constructos e suas facetas permitiu também enquadrar estes fatores na reflexão sobre a vida escolar, tendo em conta o impacto da vulnerabilidade dos alunos como desencadeador de relações positivas entre alunos e professores.

## **Palavras-chave**

Confiança dos Alunos nos Professores; Identificação dos Alunos com a Escola; Incentivo Académico; Optimismo Académico dos Alunos; Aprendizagem; Vulnerabilidade.



## Resumo Alargado

Esta tese comporta um estudo empírico que contribui para a investigação sobre o impacto da Confiança dos Alunos nos seus Professores, da Identificação dos Alunos com a sua Escola e da sua percepção de Incentivo Académico, ainda escassa, em especial na Europa e em Portugal. A análise de cada um destes constructos, por um lado, e das possíveis interconexões entre eles, por outro, permite descrever com mais rigor a complexidade e riqueza das relações entre os alunos e os seus professores em contexto escolar. Em particular, o estudo das perspectivas dos alunos traz elementos preciosos para o melhoramento das escolas e o desenvolvimento de alunos e professores e das suas relações. Acresce que é possível identificar um constructo composto, através das interconexões entre os três constructos analisados, que foi denominado aquando da sua descoberta pela equipa de Tschannen-Moran et al. (2013) como *Student Academic Optimism*. O Optimismo Académico dos Alunos reúne facetas positivas que impactam positivamente a aprendizagem e o desempenho académico dos alunos, conforme verificado também no presente estudo através das notas finais internas das disciplinas de Português e de Matemática. Este estudo foi realizado com alunos do 4º ao 12º ano de escolaridade em duas escolas portuguesas e apresenta algumas diferenças em relação ao estudo dos investigadores que primeiro se debruçaram sobre estas variáveis (Tschannen-Moran et al., 2013), o que é também interessante como caracterização da mentalidade dos nossos alunos. Subjacente a este estudo está o desenvolvimento e teste de três instrumentos em Português, destinados a avaliar a confiança dos alunos nos seus professores, a identificação dos alunos com a escola e a sua percepção de incentivo académico.

Por outro lado, esta tese começa por um enquadramento conceptual que contribui para a sistematização dos factores relevantes na vida escolar. A análise conceptual teórica das facetas que compõem os vários constructos em estudo identifica em cada um deles um factor de vulnerabilidade que actua como desencadeador da relação do aluno com o seu professor (no caso da confiança), do aluno com a sua escola (no caso da identificação) e do aluno com a aprendizagem (no caso da percepção por parte do aluno de incentivo académico). No caso do constructo de Optimismo Académico do Aluno, é o conjunto das várias facetas de vulnerabilidade que permite um impulso de empenho do aluno na sua aprendizagem que impacta o seu desempenho. Verificar a utilidade da vulnerabilidade como desencadeador de atitudes e relações positivas, intergeracionais, comunitárias e pessoais parece-nos um dos aspectos mais interessantes que resulta desta tese, sobretudo num contexto em que se discute e aprofunda o valor da presença humana na educação.



## **Abstract**

Student Teacher Trust, Student Identification with School and Academic Press come together in a composite construct that was named Student Academic Optimism (Tschannen-Moran et al., 2013) and that impacts adolescent students' academic achievement. This thesis verifies this phenomenon through an empirical study in two Portuguese basic schools, thus adding to and developing previous research. Furthermore, the various constructs object of this thesis are analyzed in a conceptual framework, showing the interest of vulnerability to the dynamics of schools, where positive behaviors develop because of mutual connections between students and their teachers.

## **Keywords**

Student-Teacher Trust; Student Identification with School; Academic Press; Student Academic Optimism; Academic Achievement; Vulnerability.



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## List of Acronyms

AP	Academic Press
APECEF	<i>Associação para a Educação, Cultura e Formação</i>
CFA	Confirmatory Factorial Analysis
CFI	Comparative Fit Index
EFA	Exploratory Factor Analysis
ICC	Intra-Class Correlations
KMO	Kaiser-Meyer-Olkin
MIMIC	Multiple Indicator Multiple Cause
PISA	Programme for International Student Assessment
RMSEA	Root Mean Square Error of Approximation
SAO	Student Academic Optimism
SIS	Student Identification with School
STS	Student Trust Survey
STT	Student Trust in Teachers
TLI	Tucker-Lewis Index
UBI	<i>Universidade da Beira Interior</i>



# Introduction

This thesis intends to answer the questions: what is the impact of adolescent students' trust in their teachers, their identification with school and their sense of academic press in their academic performance? Is it possible to consider the existence of a composite construct, student academic optimism, that expresses the interconnections between the three previous constructs and impacts academic performance?

The questions are answered in Part II, recurring to a quantitative analysis, following research done by Tschannen-Moran and her colleagues (2013), applied to students from grades 4<sup>th</sup> to 12<sup>th</sup> of two Portuguese schools.

Previous to that quantitative analysis we try to expose, in Part I, a conceptual framework in two movements: in the first chapter we identify and relate several issues that are observed to impact students' relationships with their teachers, their schools and their learning. These issues are brought in because of the richness of school life, such that escapes narrow analysis. In doing so the risk of confusion is taken, on the assumption that observing a complex reality is better done by surrendering to that complexity, even if only briefly. Thus, the focus of this thesis benefits from a conceptual linkage between the mobilized constructs and some issues chosen because of their relevance to the present analysis, and to the adequate general appreciation of the studied reality. In the second chapter we bring research about trust and identification, inscribing these constructs in the broad research about organizations and then focusing on basic schools' reality and specifically on students' perceptions. The constructs of academic press and of student academic optimism are presented in the third chapter, integrating research about the relevance of the mentioned constructs on students' academic achievement. Along the various chapters, we try to advance a conceptual framework, integrating the successive contributions of research that are presented along the exposition. Even with the disadvantage of some repetition, this method allows a gradual consideration of the multiple elements in an integrated conceptual model, that constitutes a new way of looking at all the factors present in research. The attempt at a conceptual framework integrating those various elements in the way this thesis does, is a novelty to research.

The construct of trust is the starting point of our theoretical perspective, due to its amplitude at a social and individual level, being specifically observable and relevant in schools and studied in the student-teacher relationship, already largely tested and verified both by quantitative and qualitative research. Trust remains as one of the most mysterious and yet most familiar of our day-to-day human experiences and holds the strength of an

everlasting construct (Faulkner & Simpson, 2017; Simon, 2022), resistant through the ancestral theoretical categories of knowledge and thought, throughout ages of reflection and research (Carter & Simion, 2020), in all cultures (Alex & Welter, 2016; Ng & Rockstuhl, 2008; Saunders et al., 2012), and is now empirically analyzed with quantitative scientific methods (Niedlich et al., 2021). Studying student-teacher relationships through the lens of trust provides an adequate conceptual insight, including the conjunction of interpersonal weaknesses and strengths as elements of the same construct. According to Tschannen-Moran et al. (2013) vulnerability, honesty, reliability, competence, openness and benevolence describe well the facets present when one person (the trustor) that desires something which is not able of attaining alone, thus assuming a vulnerability, relates to another person (the trustee). For trust to happen, the trustor must recognize in the trustee: benevolence — a caring attitude; honesty — a congruence between what is said and what is done; openness — a receptiveness and a clarity that allows the trustor to understand the trustee; reliability — a loyalty to the caring for the trustor and a testimony of experience of the desire at play; competence — the possibility of effectively helping the trustor in attaining the desired thing. Research is still necessary, namely, to apprehend all the impacts that fostering trust may have in contemporary schools, where the consequences of global phenomena of instability and uncertainty are felt.

Student identification with school is the second main thread of our conceptual web, due to the complementarity to student-teacher trust. Analyzed by recent organizational research as a riskier construct, for it may contain the elements of individuals' alienation to organizations, when observed in school context it has been shown as a positive factor of personal development and well-being, and as precisely an element able to prevent students' personal and social alienation. Its facets — belonging and valuing (Voelkl, 2012) — describe the deep needs of human beings to feel part of a community and to be recognized by that community as precious and unique, both simply as persons and also as members with a role in a group that in some way needs them (see Allen et al., 2022, on the need to belong). The communal dimension of students' life at school, especially during adolescence, is a field still lacking investigation, that the present study attempts at contributing.

The complementarity of both constructs contributes to the comprehensive analysis of such a rich phenomenon as are student-teacher relationships. In fact, while student-teacher trust focuses on the relationship of two subjects, identification with school explores the communal dimension in which that relationship occurs, without overseeing the personal impacts in all protagonists. This complementarity still lacks research, and this study may add to this need.

That complementarity, combined with a third factor — academic press (Bandura, 1986; Eccles et al., 1989; Hoy et al., 1991) — concurred to the proposal by Tschannen-Moran et al. (2013) of a new construct — student academic optimism — which seems a relevant theoretical tool to unify the tension towards knowledge present in healthy school environments. The process of learning, in all its implications, is a vast field of research that this thesis does not explore. Nevertheless, once it is considered as constituting the main distinctive reason for schools' existence, the tension towards learning is ever-present when we analyze any phenomena concerning students. Academic press, which dynamics impacting academic performance has been investigated by Tschannen-Moran et al. (2013) and Hoy et al. (2006) appears as an appropriate conceptual thread to bring that tension into play in the present research approach: it describes the environment where trust and identification with school thrive, towards learning results observable in academic performance. In fact, academic press, in its early description by Hoy et al. (1998), then revisited by Mitchell et al. (2015), constitutes an ambiance in the whole school community, that results in a perceived encouragement to students and a sensed focus in learning as the main reason to be together. It constitutes, thus, an objective that has the power to enhance relationships and personal development, like a common quest, a common pursuit that calls for everyone and enthusiasms everybody. It therefore justifies the student-teacher relationship and underlines the reason why students trust their teachers and identify with their schools. The perception of academic press is proximal with the positive psychology construct of academic optimism and self-efficacy that are presented as a self-regulatory mechanism enhancing the students' perception of self-competence, reinforcing their capacity to respond well to academic demands (Yue, 2022). The same conclusion is reached in another study that associates optimism and hope as factors positively impacting academic success (Hayat et al., 2022). Even if both these studies involve university students, they seem to establish research also relevant for younger students. The subtle distinctions present in research between academic achievement and academic performance, as well as the links and problems in linking teaching, learning and academic success, are referred to later in this thesis, even if briefly, as they do not constitute its direct object. Nevertheless, academic outcomes — expressed in whatever form considered more adequate and fairer — cannot be ignored as a fundamental thread of the school life's theoretical web.

Research about these phenomena is still to be advanced worldwide. In Portugal, as far as we know, research combining these constructs is inexistent, other than the present study, although there is thorough reflection and investigation about the present challenges to education in general and schools in particular (see, for example, Carmo, 2022; about academic outcomes and motivation, Calaça, 2013).



# **Part I. Conceptual Framework**



# Chapter 1.

## Schools: what's the point?

### 1.1. Multiple questions from multiple points of view: schools' issues in a landscape of trust and identification

Schools are one of the most interesting communities in the contemporary world. Scientific literature about them is vast and shows their many and multiple dimensions.

On the one hand, they are reported as fragile, superfluous, even decadent, not able to respond to contemporary challenges and demands. On the other hand, even during and after global confinement, they appear resilient, capable of innovation, valued by many, even more than before. For example, a study among Norwegian students (Gustavsen et al., 2021) reported that students valued regular school above homeschooling experience, and that especially low achieving students encountered big difficulties during confinement. But the classical questions remain acute: why are schools so important in our societies? Are schools the best way to educate, enhance personal development and pass knowledge on? Do children, families and societies need them? Why do States regulate education delegating it in schools, public and private?

There is an assumed global public conviction that schools contribute to the development of a country, a region, even a State, and that education is a right and a duty that the State must protect and enforce (Niedlich, 2021). What is the political dimension of the life of individuals at schools, of individuals who belong to a school community, who interact within a school?

Although it may appear a line of research very different from the object of this thesis, this **political dimension of schools** seems to be a necessary thread for a consistent and adequate conceptual framework involving the constructs of student-teacher trust, student identification with school and even academic press. The way students grow, in trust or distrust of adults, appears to influence their trust in knowledge, in themselves, and in the hypothesis of being able to contribute to a better environment. The possibility, consistency and consequences of students' identification with their school appears to impact their general participation in society. The impact of these experiences on students' learning and in their life-long attitude towards learning is also relevant at an individual as at a collective level. These aspects, thus, determine a political experience of all school agents and of society in general: weak schools are, possibly, a sign and even a cause of weak societies, as vital and happy schools are possibly a sign of hope for the societies they belong to and probably also

a consequence of healthy social environments. Along these lines, a recent study (Virat et al., 2022) shows the importance of teachers' attitudes towards students on the students' attitudes versus public authorities, emphasizing the effect of student-teacher relationships in the civic behavior of adolescents. Even without analyzing this path of research, this thesis has in mind that what happens to each student within a school is happening to a citizen, who is learning to interact with others and learning to make sense of the global environment. It is happening to a citizen that will be active in the *polis*. Moreover, it is already happening through other citizens that hold a political responsibility, for they are passing on the heritage of general knowledge of a society for which they are responsible (Hart et al., 2007; Sincer et al., 2022). We consider general knowledge not only the sum of knowledge specific to each discipline, but also the general overview of reality and of its meaning, essential to make each person grow and communicate with others (MacIntyre, 2012).

This political relevance of schools points out the fact that whatever we may find in them does not belong only to the private sphere of human lives but has also a public relevance, that seems to emphasize its communal dimension within the various circles of communal human life (Carmo, 2020). Choosing to study the construct of trust linked with that of school identification allows a combination of personal and interpersonal facets, that covers the political dimension present in schools. In this same direction, it is interesting to take into account different styles of mutual relationships' design, namely in what concerns the role of the teacher as a leader, and their consequences in the students' social behavior. About this specific topic, a recent study emphasizes how servant leadership lived in class, through trusting relationships between teachers and students, encourages social justice sensibility in students (Jeyaraj & Gandolfi, 2022). The political dimension of the life of individuals at schools results clear from our research: trusting, belonging and learning, as earning trust, building a community to which it is worthwhile belonging, and teaching others, are, in it-selves, actions with an impact in the life of the *polis*, of the whole community in which the school is inserted. Primarily, because being protagonists of life at school is to be agent of the society of which the school is part; secondly because those who are growing, learn through their life at school a personal and communal attitude that they will eventually practice and develop when they become adults, that is, political agents in full. Some research (for example, Hoy & Tarter, 2004) has emphasized how trust impacts directly on justice in the school environment.

Another dimension to attend to is **schools' importance for individuals**. In an accelerated changing society, the existence of schools is often put to trial. Do individuals need schools? Is school good for students? Is school good for teachers and principals? Is school good for parents? Is school good for the school's neighbors? When schools closed

due to the pandemic they were missed. But why? All these questions are difficult to answer according to empirical research criteria: even more difficult than to give tentative answers based upon personal observation, intuition and thought, is to collect data that can be universally scrutinized and interpreted following scientific accepted methods. Nevertheless, departing from various points of view, several studies confirm the value that schools have to personal development. Cooper and Upton (1990) propose an overall analysis of school life that gives an overview of the complex interactions and of their consequences in students' and other school protagonists' behaviors. A study presented by Poulou (2005) introduced suggestions that apply specifically to students with behavioral and disciplinary difficulties but that seem useful for all students. In the same direction, Cooper and Cefai (2013) found evidence of preventive action in schools that is effective in diminishing mental health problems in adults. A recent study in alternative schools in Israel (Hadar, 2022) points out how coping with confinement showed some of the most important factors for schools' positive environment. Another recent study (Szelei et al., 2021) indicates difficulties in integrating students with different cultural backgrounds in Portuguese schools. Taking character skills into school programs seems a fair attempt to diminish or even solve some of the most challenging school problems, and research exploring this path has developed in recent years (Khanna et al., 2021). Children's resilience, considered as the interrelational quality of growing in learning and personal self-esteem acquired facing difficult and adverse circumstances, is found significantly favored by positive school experiences all over the world, among which trusting teachers and generally the school environment is found preeminent (Ungar et al., 2019). Sensibility to multi-cultural stances and reinforcement of inter-cultural competences of youngsters is also promoted by certain school experiences, as reported by Barrett (2018). A qualitative study in six schools in Chile, after the pandemic, reveals that benevolence was the facet of trust that was most emphasized during confinement, contributing to the enhancing of student-teacher trust. The article provides an insight about how important for students and teachers the school context is, other than the interpersonal level of relationships, including a view of what did not happen concerning the advancing of student's learning during confinement (Weinstein et al., 2022). An interesting perspective on the phenomenon is given in a recent study about the nature of the relationship between teachers and students, proposing that a democratic education needs a reciprocal fiduciary duty on the part of both students and teachers (Matusov, 2022). Another useful line of research analyzes what may be considered the "students' voice", in order to enhance student-teacher relationships (Conner, 2022). Portuguese researchers built a scale to measure Portuguese students' motivation to learn (Duque et al., 2016). Other researchers try to describe teachers' non-cognitive competencies and measure their impact in the quality of teachers' and students' performance (Gutman, 2013).

Analyzing the facets of student-teacher trust at play with the facets of students' identification with school and academic press, it is possible to advance the hypothesis that schools are indeed significant places for personal growth. Healthy schools are communities where children and youngsters, beyond their own families, do learn to understand reality, and develop as people, interacting with adults that convey knowledge and care. Schools are communities valued by the students themselves, by their families and by the school collaborators, thus valued by society. As will be reported in the next chapters, research that analyzes the facets of trust, identification with school and learning, and the links between our three main constructs, and character strengths, personal fulfillment, social stability, positive attitudes, and a variety of other aspects of human well-being, shows that healthy school environments enhance the latter, proving that healthy schools are in fact good for individuals.

## **1.2. The relationship between students and teachers: the complex core of schools and the core of trust and identification**

One of the most intriguing things in our schools is the way students attach themselves to teachers, trusting these adults to make them learn and grow as human beings, in all dimensions: cognitive, affective, moral, physical.

Observing the way people relate within and with a school environment, it appears that the core of life at school is what happens between adults — teachers and other educators — and students. Relationships among peers are observable as very significant, for they are highly appreciated and have a big impact in the personal development of students, and even in the students' academic engagement (Bradley et al., 2021). But they appear pervaded by the presence — or absence — of teachers, which influences, decisively, the development and meaning of those peer interactions (Bierman, 2011; Mikami et al., 2011; Muñoz-Hurtado, 2018).

In the same way, teachers have an enormous impact in the academic performance of students (Furrer et al., 2014; Johnston et al., 2022; Wu et al., 2022). This impact has different modalities, both in cognitive and non-cognitive skills, and research points out how it can be measured to predict long-term positive effects (Jackson K., 2018; Jadoon et al., 2022). Research also shows the complexity of these interactions and their different outcomes, accounting for a variety of interdependent impacts (Blazar, 2016). Obilor (2019) analyzed data that documented how teachers' communication skills enhance learning and how teachers' low commitment can impoverish students' academic performance. Ma et al. (2022) studied the impact of trusting relationships between students and teachers

moderated by parental involvement on academic achievement. Students' well-being is considered a priority for schools and the impact of teachers in students' well-being is analyzed by recent research, namely in Norwegian schools (Samnøy et al., 2022). A thorough literature review (Verhoeven et al., 2019) shows multiple perspectives through which schools concur to the development of adolescents' identity. School belonging, a proximal construct of school identification, is object of a meta-analysis that underlines the importance of student-teacher relationships among other factors (Allen et al., 2018).

Other issues are woven into student-teacher relationships, issues that touch broader aspects of educational reflection, but that we consider pertinent to refer briefly in this dissertation, so as to better understand the context of our analysis. These issues are linked to **the nature of the student-teacher relationship**.

In the schools where we developed our research, Colégio de S. Tomás and Colégio de S. José do Ramalhão, it is frequent to hear from the students at grades 7 and up that one of the most distinguishable traces of their experience is that there is “a friendship between students and teachers”, that “teachers are our friends”. From younger students we do not hear this formula so often, but it is clear that there is a real attachment between students and teachers, perceived as natural by the children and desired by them, attachment that, in time, evolves to true friendship, when the former child becomes a youngster and then an adult, even if there is not much conviviality anymore.

The legitimacy of describing this relationship as **friendship** is discussed by educators, philosophers and researchers. Klonoski (2003) quotes Hannah Arendt to affirm that there is a public and political dimension to the relationship between students and teachers which has the perfection of the soul and the love for others and the world as aim, thus constituting the essence of friendship. The author describes teaching as a *doing-with*, not as a *doing-to*. A recent article (Saidnova, 2022) emphasizes the ethics of mutual trust in primary students and teacher relationships that leads to a healthy class environment, in terms that may apply to the description of friendship. McGrath and Van Bergen (2015) show negative outcomes of relationships between teachers and students, along with positive outcomes already reported by research.

Another factor in the relationship between students and teachers is the role of **authority**. Much has been said and studied about this phenomenon, and very important findings have been proposed to develop an adequate theory of authority in education, capable of enhancing freedom and capacity of critical judgement in youngsters. While an authoritarian approach is clearly ruled out of contemporary pedagogy, the authoritative function — that which derives from its Latin route, meaning “to make grow” — seems to continue to have a fundamental role in the student-teacher relationship and has long since merit educational

theory attention, from a large span of authors among which Hannah Arendt, whose reflection about this aspect was brought to recent research by Gordon (2018). In polemics with some educational theories, Benne (1970) proposes anthropological authority as a type of adult responsibility that enables a vital relationship with students, capable of helping them grow and develop, personally and in a community, and different from both expert authority and rule authority, that he argues are no longer relevant in contemporary schools. Important currents of thought in educational philosophy follow Habermas (1977) and his clear view of authority as impoverishing or even impeding the development of a free self, as it may provide knowledge, but it will never permit reflection. On the contrary, following a contemporary discussion between those authors, Gadamer (2008) proposes tradition and authority as the horizon that amplifies the limited view of the student over reality. Similarly, Giussani (2019) describes an existential authority that is present in an educator capable of enhancing the students' quest for self-understanding and understanding of reality, at the same time allowing for a critical stance that empowers free assent or negation (Suarez, 2019). Other authors analyze different aspects of the impact of authority in the student-teacher relationship that confirm the relevance of this topic. Pirrie and Rafanell (2020) focus on the importance of the dynamics of acceptance, challenge, negotiation, definition and constitution of authority that are present within the interactions of students and teachers in the classroom; Silk (1974, 1976) focuses on the attempt at clarifying different aspects of what authority may constitute in an educational setting. Proximal to these notions is the growing research about mentoring processes, that show the importance of adult guidance and support in adolescence. As an example, the research conducted by White et al. (2021) emphasizes the importance of positive input recognized as true by the youngster for adolescents' general well-being, including academic motivation. In this same direction goes research about teaching styles, namely in servant teacher leadership, that observes the links between the transformational effects on students of servant leadership practices by teachers: leadership is proved to be essential to students, providing guidance, focus, clarity and therefore learning, in school and in classroom, and has broader effects in motivation, learning and fulfillment if acted in the interest of the students, and stimulating their intellectual capacities (Bufalino, 2017; Comadena et al. 2007; Crippen & Willows, 2010; Noland & Richards, 2015; Stewart, 2012).

Superficially an apparently contrasting factor, especially when confronting the constructs of caring and of authority, but equally challenging to research and practice, is the construct of **self-determination**. Self-determination theory (Deci & Ryan, 2000) underlines the importance of students' autonomy in order to attain development, emphasizing the necessary limits to authority and to caring relationships with adults in general and educators in particular, as these interactions may mean an over-power that impedes

students' self-determination, diminishing the possibilities of self-motivation, essential to learning and self-development. Even so, recent research shows that autonomy does not mean solitude, and, on the contrary, occurs when everyone in the community is interdependent and collaborative (Connel & Wellbourne, 1991). Self-determination theory provides, therefore, an advance in research about the importance of the self of each student in the initiative and continual of student-teacher relationships, as a condition of strength and individuality, within a complex of links in which there is no parity between the protagonists' stands, at least in the superficial functional level (Guay, 2022).

The role of authority seems, thus, another interesting thread to include in our study, as an issue to mention related to the core of our question, even if not thoroughly addressed. When a student engages in a trust relationship with teachers it is reasonable to consider that it is so because the student recognizes in the teacher the ability to make grow, which is the *substantia* of authority. The facets of benevolence, competence, openness, honesty and reliability allow for the recognition of authority in that sense. A similar recognition, displayed as an attraction, happens when students feel valued and perceive an incentive to learn in the school climate to which they and their teachers belong. It seems plausible to consider that when that happens, the same students recognize substantial legitimacy, that is authority, in the teachers and in the school as a whole, recognition that makes the valuing and the belonging perceived as adequate.

Academic student optimism, on the other hand, seems to contain elements of self-determination, as it is only possible that students trust, identify and academically involve themselves with full motivation and will. The links between self-determination theories and the need for trusting and for identification with a significant community, as is a healthy school, are object of recent research (Ahn et al., 2021; Anderson et al., 2018; Demenoth et al. 2022; Guay, 2022; Johnston, 2022; Zhang et al. 2021), thus confirming the hypothesis of complementarity among all of these factors, if a full human experience is to be enhanced. That all these factors can be considered as components of a friendship relationship seems another fertile line of research.

Considering all these multiple issues and the multiple points of view used by researchers to study them, once more it appears to us that the interplay between vulnerability, benevolence, competence, honesty, reliability and openness, facets of trust; belonging and valuing, facets of school identification; and academic press, correspondent to the desire for learning, and of their composite interplay as student academic optimism, help verifying the presence of elements essential to friendship, to caring relationships, and to the responsibility of teaching others, both to learn to understand reality and to develop positive personal and social competences, such as critical judgement and collaboration.

Another set of issues pertaining to the content of the student-teacher relationship is the **transmission and acquisition of knowledge, competences and life experience**. What is most relevant in schools: knowledge and its acquisition by students, or developing students' character strengths, well-being, social interaction, caring? This old tantrum is addressed by recent research, trying to respond to contemporary challenges. Doyle and Doyle (2003) focus the need for care reported in north American schools and recall Nel Noddings' (1992) alert that students do not learn unless they feel cared for. The authors propose a model for enhancing caring relationships among all agents of the school community, including curricula contents and classroom strategies directed at developing empathetic and collaborative skills in students. Apparently in the opposite stand, authors like Chen and Hong (2016) propose Knowledge-Building (KB), as proposed by Scardamalia and Bereiter in 2003, to reframe education as a knowledge-creating enterprise, assuming that contemporary society needs continuous new knowledge, which implies a strategy for schools, centered in empowering students for that collective production of that new knowledge. Seemingly, authors like Petrides and Guiney (2002) propose strategies for knowledge management in schools, that provide the transformation of data into significant knowledge, which implicate a focus in the learning experience of students, transforming it according, namely, to technological apports. In another direction, confirming Positive Psychology research and methods, Khanna et al. (2021) report good impacts on students' well-being, life satisfaction, happiness, affect, and self-esteem of a classroom-based program that enhances character strengths in students, preventing competitive and performance-oriented stressors. Challenged by evidence of stress and aggressive tendencies in adolescence and by the general innovation and knowledge drive, research attempts at studying teachers as people who know things about reality, who understand it and understand its meaning and who dedicate themselves to transmit and testify that knowledge to youngsters. In doing so, teachers communicate an experience, both personal and common, and ignite the cognitive and affective energies of their students. That is why researchers such as Noddings (2012) emphasize not only the cognitive duties but also the care that teachers have to fulfill towards their students. Obvious as it may sound, this line of research has been amply followed with a sense of novelty, by scientists, school leaders and teachers, for whom caring for students is an ever challenge. What is also observable in most schools is an innate openness to adults on the part of children and even adolescents: in healthy circumstances, there is an aptitude for listening and relating to adults that ensures a significant relationship. Students are curious about their teachers and curious about what they have to say. In healthy environments, this curiosity is also a desire of attachment which creates an openness confirmed by a continuous caring action on part of teachers (Chang, 2019).

Caring action is also exercised by the method used in teaching, which brings us to yet another relevant issue. In teaching, and in general in the student-teacher relationship, the declarative function is as important as the procedural one, for students need both to theoretically apprehend reality and to make sense of it by personal experimentation. Personalization of knowledge, essential for learning, implies both those elements, especially in a communitarian environment such as a class or a school. Research has tried to clarify differences and complementariness of the two, that can be decisive for a better understanding of different teaching methods and priorities (Ashby et al., 2010). When analyzing the facets that compose students' trust in their teachers, this dilemma of the competence that the teacher testifies in reaching the student and actually teaching is present. Such a complex relationship as is the one that grows between a student and a teacher should need a complexity of methods so as to ensure the complementarity and adequateness necessary to a satisfactory teaching and learning interaction.

Finally, a last perspective should be added to this introductory chapter, so as to include the contributions of the **Positive Psychology** approach to human behavior. Positive Psychology provides a set of theoretical constructs that have been recently tested and developed by practice and about which discussion and further analysis seem promising. Moreover, this conceptual framework seems to provide a common platform across diverse cultures and traditions, without ruling out the basic and common need for meaning (Shin & Steger, 2014; Lee Duckworth et al., 2005; Meyers et al., 2013; Parks & Titova, 2016). There is an interesting epistemological discussion about the connection of Positive Psychology with humanistic psychology, explained by authors like Taylor (2001) and Froh (2004) that may add to the understanding of our research. As it is, the contribution of a benevolent perspective on human behavior, be it positive or/and humanistic, has definitely a stand in the present study.

Although still lacking further development, studies about Positive Psychology strategies in schools, namely various strength-based approaches, seem promising in identifying benefits for students, teachers and schools (Kumar & Mohideen, 2021). The pertinence of Positive Psychology's conceptual framework and methods in education has been already tested, even in Portugal (Marujo et al., 2000; Waters, 2011), and it seems capable of enlightening research about student-teacher relationships, namely in its communal dimension. Engagement, relatedness, meaning and achievement, fundamentals of the positive approach to human life in general, function as a stimulus to describe and foster student-teacher relationships in schools. As Positive Psychology emphasizes the need and utility of understanding the healthy behaviors in order to enhance them, it provides an interesting and growing web of concepts that may show useful in schools, to describe and enrich student-teacher relationships.

The facet of vulnerability, present in the construct of trust, seems, on the other hand, to be a valuable conceptual factor that can add credibility and accuracy to the Positive Psychology theoretical framework. Constituting the factor that ignites trust, it seems present in every human experience and seems better looked at as an opportunity for relationships than as a flaw, although always balanced by a critical stand that impedes its sub-valuation as a potential malignant factor (Gilson, 2016). Vulnerability is a multi-significant construct, and the fact that there is extensive research on it, both in individual and in social scientific fields, facilitates — in some measure, although also introducing more complexity — making a clear step further towards understanding how to deal with it within this thesis' attempt at an accurate conceptual framework. An interesting view of the possibility of a positive perspective is advanced in the higher education context, with the proposal of the concept of epistemic vulnerability as a positive element of relationships, namely enhancing the learning process (Gilson, 2016; Jackson, L., 2018). This thesis intends to further research in basic education, exploring the connections between needs and remedies experienced by students in action and reciprocal relationships with their teachers, and trying to advance an accurate conceptual frame that integrates the diverse and multi-level contributions of the scientific community. As said above, integrating the different conceptual elements may seem ambiguous and prove to be difficult or even impossible, but the attempting process is already a contribution for further research, trying to knit everything together, as in life, other than dropping threads so as to benefit an analysis that would draw abstract clarity from a perspective that, at least in some ways, would possibly suffer from forced reductionism.

## **Chapter 2.**

# **Trust and Identification: from organizational theory to clear-cut school life**

The constructs of trust and of identification are widely used in research in various contexts where they both prove descriptive of human interactions. Before looking at our specific object of analysis — student-teacher trust and student identification with school — I went through two literature reviews, within my doctoral program, exploring the larger horizons where trust and identification appear visible, namely in the vast field of organizational theory. This chapter was developed complementing, with recent studies and further reflection, the comprehensive literature review published for the EduLearn 21 Conference (Brito et al., 2021a) and the systematic literature review published in the proceedings of the *9<sup>th</sup> European Conference on Education 2021* (Brito et al., 2021b). The broadening of research horizons occasioned by this methodology allowed a more complete perception of what it is to trust and to identify with an organization, eliciting a more acute analysis of the constructs of student-teacher trust and of student identification with school, and of the phenomena they describe. The studies found through the systematic literature review method are naturally reported in a more detailed way, as they illustrate the very elements more directly related with this thesis' question.

Scientific investigation about these constructs has existed since the late decades of last century, but recent research continues to acknowledge challenges.

Research findings identify trust as a major factor of human relationships, that is also essential in schools, affecting the quality of every stakeholder's experience, in organizations in general as in schools, and influencing the level of school identification. Scientific literature on organizations has pointed out how trust enhances the possibilities of an organization attaining its goals. Studies about schools underline the importance of trust in the context of the various relationships among their members, adults and students alike, and its correlation with learning and personal satisfaction. School identification is verified as an important characteristic of a positive school experience, correlated with trust. Trust is reported to affect interactions at personal and institutional levels and to influence the identification of individuals with the communities they are part of. This chapter presents a synthesis of scientific literature about trust and school identification, so as to allow a panorama view of what trust and identification are, how they happen and what they make

happen. As an interpretive literature review, it attempts to make sense of the various conclusions of different studies and analysis, following scientific research since the late 90s, and presenting them so as to reach a contribution for a wide-ranging theory of trust and of identification, in educational communities in which students, teachers and other stakeholders feel integrated, even and specially when undergoing difficult conditions as those that the pandemic has brought.

Social change acceleration, technological power, gigantic cultural distances that divide and polarize generations, ethnic and political affiliations, traumas of recent confinements, raise ancient questions that the circumstances make even more acute. Why do we hold together, why do students still follow their teachers, why do teachers keep on trying to teach, how come dialogue does not stop completely? Is trust still at play? If so, what does it mean? Is it possible to live beyond the boundaries of the self? Is it possible to relate to others, to belong to a community, enhancing the discovering of the self?

Looking at what happens in reality, in several schools, there is something that unites different agents, across generations, economic, cultural and social diversities, something that allows relationships to develop and resist. In this thesis, based upon research, we claim that trust among all actors — students, teachers, principals and parents — plays a very important role in keeping schools active and healthy. Scientific research has verified trust factors, components and outcomes, and investigators' conclusions seem useful to understand its endurance and positive dynamics.

In this thesis we consider another construct as a key factor of school life: students and teachers' identification with school seems to be another element of the resilience of school communities, and of their power to keep people together and supporting each other. Students' identification with their schools appears in research across continents as a factor of persistence in keeping on learning and staying connected (Ahmadi et al., 2020; Allen et al., 2018; Allen et al., 2021; Cai et al., 2022; Carvalho et al., 2020; Finn, 1989; Juvonen, 2012; Kopershoek et al., 2020; Simonsen, 2020; Uslu et al., 2017; Voekl, 2012).

Considering the vaster social environment, transcending school communities' borders, the assumption that positive relationships imply trust is agreed upon by both researchers and educational professionals and confirmed by scientific studies all over the world, even if there is exceptionally the possibility of prejudicial effects of over trust. Identification, on the contrary, does not always appear as a positive construct: individuals' identification with organizations is reported as a variable of satisfaction, motivation and efficacy, but research demonstrates some drawbacks, and data confirm that it can easily evolve to overidentification. Student identification with school, on the contrary, is always reported as a positive construct, although research is still lacking. The literature review in this chapter

goes from the 90s — when a boom in trust scientific investigation happened — to the most recent studies, so as to broaden the temporal perspective on research conclusions. Considering trust as a factor of organizational behavior, addressed by scientists not specifically interested in schools, teachers or students, allows us to better understand relationships between students and their teachers, both in what they share with general human common traces and in what they have of a specific idiosyncrasy. An equivalent approach applied to the compilation of research on the general construct of identification of individuals with organizations, before going into specific student identification with their school, may also bring important insights. Following this methodology, the corpus of data that helps understanding trust and identification in all their factors widens, with the advantage of suggesting new lines of research and of revisiting old insights with new perspectives. On the other hand, such a comprehensive view will contribute to recognizing that the students' trust in their teacher, and their identification with their school, temporary phenomenon as they are, not only are embedded on the wider context of human relationships, but also further general trust and social identification. Trust and school identification incise in general social cohesion, for the experience of students in schools seems to be decisive to the experience of general trust and social identification, both while it happens — affecting the whole community and not only students and teachers — and through the passing of time, as students become adults and leave schools but carry their knowledge, habits and motivations concerning trust. Consequently, research about these constructs benefits from a multi-level analysis, through which research can become both more thorough and more acute.

## **2.1. Trust in organizations and its clues to student-teacher trust**

Researchers and organizational leaders have always been interested in the phenomena of trust, but contemporary scientific studies about it were stimulated in the 90s mostly because of the awareness of evidence about trust bringing benefits to organizations and their members and playing a fundamental role in the attainment of organizational and individual goals (Kramer, 1999). Its definition, however, has never been easy to reach. Before plunging in the most recent research, it seemed useful to the study pursued in this thesis to become aware of the evolution of the scientific research about this construct, so as to somehow grasp its complexity and richness, and understand the difficulty of defining it, detecting it and, above all, measuring it. Kramer (1999) shows in his notable literature review that contributions for the clearing of the construct of trust came from antagonist points of view: some emphasize as components of trust the expectation of morally and ethically correct actions (Hosmer, 1995); while others point at pragmatic factors defining trust as mere

“anticipated cooperation” (Burt & Knez, 1995). In schools, where clear ethical behavior is expected to be followed by all agents, and where, at the same time, both students and teachers are pragmatically searching for the most efficient ways to attain learning goals, this paradox is very real; both perspectives seem important to school contexts.

Kramer (1999) points out that authors have inscribed trust as a psychological state, even if different authors focus on different aspects of the construct and depicts various elements that seem significant to our question about a general concept of trust pertaining to interactions in different settings and in multi levels. Firstly, Kramer indicates that trust involves a perceived vulnerability or risk (Lewis & Weigert, 1985), justified by an expectation of others’ actions to be competent, dutiful and even favorable (Robinson, 1996), features that seem particularly relevant when analyzing the relationship between students and teachers. Kramer shows how authors view trust as a complex construct linked to embedded social expectancies and behaviors and involving cognitive, affective and motivational components. Arrow (1974), Kreps (1990) and Miller (1992) insert trust within choice behaviors. Following this contextualization, some authors underline the rational aspects of trust (Coleman, 1990), whilst others point out how irrational trust-based behaviors can be (March, 1994), aspects that seem present in school settings as well. Mayer et al. (1995), McAllister (1995) and Kramer and Tyler (1996) propose an integrated conceptualization of trust that includes a calculative orientation towards risk and a social orientation towards other people and towards society as a whole, developing a relational concept of trust, that reinforces a perspective of the depth of student-teacher relationships.

As to the fundamentals of trust, Sorrentino et al. (1995) underline how differently people are disposed to trust. Pew (1996) and Wrightsman, (1991) reveal the correlation between the predisposition to trust and other personal predispositions including the person’s convictions about human nature. Rotter (1980) concludes that the adult’s predisposition to trust comes from trust experiences in childhood. Time is also detected as an important variable of trust, as people tend to trust depending on the patrimony of knowledge they have about the other and that develops in time: Boyle and Bonacich (1970) underline that trust is based upon *a priori* expectancies and evolves in a direct proportion to the fulfilment of the initial expectancies. Lewicki and Bunker (1995) and Shapiro et al. (1992) propose models that show that trust is reinforced in positive relation with personalization in relationships. All these insights seem relevant to explain variances in levels of trust in schools. Another interesting line of analysis is the one that highlights the importance of third parties in trust relationships, which seems to point at the influence of the school community and all its agents on the level of trust between students and their teachers. Uzzi (1997) notes specially the input of third parties in the beginning of relationships and in a

slightly different line, but maybe not a less important one, Burt and Knez (1995) show that informal communication channels of gossip can modify trust in unpredictable ways.

Research also identifies impersonal factors that impact levels of trust among members of organizations, such as categories, enhancing trust assumptions in individuals who perceive themselves as belonging to the same category as others, generating mutual predisposition to trust (Brewer, 1981, 1996); and roles, that create an expectancy of an adequate behavior and thus favor tendencies to trust and be trusted (Barber, 1983; Orbell, Dawes & Schwartz, 1994; Meyerson et al., 1996). The importance of leadership roles and styles is shown by research in organizational settings to influence and impact trust among all stakeholders. Legood et al. (2021) use a meta-analysis to look at the role of trust in stimulating the positive effect of leadership. Emphasizing servant and ethical leadership styles as the ones that own higher levels of trust in the leader, the authors point to the importance of affective over cognitive factors of trust in the leader, impacting performance and organizational citizen behaviors. Although the results of this meta-analysis underline the complex interactions of factors, the slight preeminence of the affective basis linked to performance and behavior may sign the importance of caring in student-teacher relationships.

All of these factors show fragilities in times of crisis, in which trust appears more reluctantly (Spreitzer & Mishra, 1999; Webb, 1996; Weick, 1993). This seems a relevant conclusion if applied to school settings. Very recently, Gustafsson et al. (2021) looked through a qualitative study at the preservation of trust in disruptive circumstances, proposing a theoretical model that extends and clarifies active trust, distinguishing three essential practices — cognitive bridging, emotional embodying and inclusive enacting — that enable trustors to actively preserve trust in trustees. These practices seem interesting to implement in schools and classrooms and proximal with active learning and healthy student-teacher relationships that empower students and require their participations in the learning process and in school life in general.

Kramer (1999) presents yet another hint to the understanding of the basis of trust in organizations, which he calls rule-based trust, collecting studies that point out how members of an organization tend to reinforce their reciprocal trust through the continued and shared adherence to a common normative system (March, 1994). One classical study that may shed light on the trust phenomenon in schools and, particularly, on what is really student-teacher trust, is the one conducted by Fine and Holyfield (1996) at the Minnesota Mycological Society. In this setting, trust levels must absolutely always be very high, because of the risk involved in eating a bad mushroom, wrongly classified as good. The authors identified three bases of trust: awarding trust, managing risk, and transforming trust. The first occurs at the beginning of the relationship, when levels of effective confidence are still

low, but new members perform high levels of trust, being encouraged to eat mushrooms cooked by older members, and thus proving that they may effectively trust and adding to the collective assumption of trustworthiness. The second results from an institutional process through which novices are instructed by older members that have in turn been instructed when they were novices, resulting in effective knowledge about mushrooms and competence to manage risk. Transforming trust occurs when trust levels are so high among members that their interaction *serves as a reward*. This process seems very similar to what happens between a student and a teacher throughout their interaction: at first an assumption of the teacher's trustworthiness, verified in time by the student through various interactions that are confirmed by time and result in a pleasure to be together.

An important distinction to complete an overview of general trust at the turn of the century is the contribution of Yamagashi, Cook and Watabe (1998) and Yamagashi and Yamagashi (1994) about levels of trust among Japanese citizens, reported as much lower than the ones detected by scientific literature in the United States, measuring American citizens levels of general trust. These authors clarify that what exists in Japan are low levels of general trust but high levels of mutual assurance, based upon personalized relationships in a context of a very high perception of social stability; this distinction may apply to the perception of the importance attributed to the personal relationships between a student and his or her teacher, different from the level of general trust of that same student in the general educational system. Dirks & Ferrin (2001) bring challenging data to the construct of trust in organizations, that point at perverted effects of high levels of trust, and thus propose trust as a mere moderator of interactions.

Various authors (Lewis & Weigert, 2012, Mistzal, 2012; Schoorman et al., 2007) affirm that the term "trust" generally includes the willingness to make oneself vulnerable when relying on others. This element of vulnerability, present in many models, seems important to clarify within a student-teacher relationship: can vulnerability be identified only on the part of the student? And what does it consist of? Is it also present in the teacher?

Dietz and Hartog (2006) introduce a classification within the concept of trust that contributes to clarify and distinguish its components and in some way, even its chronological development: trust as a set of beliefs, that are synthesized in the conviction about the trustworthiness of the trustee, based on ability, benevolence, integrity and predictability; a decision to trust, that is, a stage where the expectation of trustworthiness and the intention to act upon it are present — although the authors note that also external factors, not linked with the trustee, may influence the trustor in his decision to trust; thirdly, once the decision to trust is taken, the actual trust-informed risk-taking behaviors, always with the certainty that it is necessary to trust and the founded hope that it will be worthy to

risk (Costa et al., 2001).

Dietz and Hartog (2006) also propose a scheme to clarify the continuum of degrees of intra-organizational trust, that starts with pre-real trust stages (distrust, deterrence-based, and low trust, calculus-based) and evolves to real trust levels (confident trust, knowledge-based trust; strong trust, relational-based trust; and complete trust, identification-based). This synthesis seems particularly useful when applied to school settings: authors agree that the pre-trust degrees correspond to macro-level evidence, and that the three others are linked with relationship-specific evidence; within schools, and specifically between students and their teachers, the content of the three positive levels proposed by Dietz and Hartog (2006) seems relevant to further studies: confident trust consists of positive confidence based on prior predictability; strong trust corresponds to a stronger positive confidence based on shared affection; complete trust is extremely positive confidence based on converged interests, thus establishing a link with identification. In our perspective, this third stage would describe a high level of school identification, connecting interpersonal trust with institutional trust.

Tortoriello et al. (2012) underline in their literature review the stability of the two key elements of trust as a psychological state: the willingness to be vulnerable and the expectation of favorable treatment by another party, – along with the verification that willingness is based on expectation. Whether benevolence or the expectancy of a favorable treatment are legitim expectancies for students to have about their teachers, is another question to link with school research, which emphasizes the importance of teachers' fairness as a condition of student trust and identification. These authors stress that, due to fragmented research using very different and tailored-made measurement instruments, research on real factors of trust and their incidence lacks clarity and progress. Being so, the authors select five instruments, devised by different scientists, to measure the individual trust in another individual or collectivity, that they consider more accurate and comprehensive, although still incomplete: Currall and Judge (1995) and Gillespie (2016), that, according to Tortoriello et al., only capture willingness; McAllister (1995) and Cummings and Bromiley (1996), that those authors consider only covering expectation; and Mayer and Davis (1999), that although including a set of factors – trustworthiness, trust and risk-taking – seem to those authors to underline willingness more than expectation. An important insight of this study is Tortoriello et al.'s recommendation to use previously validated measures, thus advancing research in a comparable way. Recent research on trust between coach and coachee (Terblanche & Heyns, 2020) shows that the coachee's perception of the coach's trustworthiness – demonstration of competence, integrity and ability – is the only factor that influences trust. As coaches gain importance both in organizations and in personal relationships, this study may shed light on the general

research on trust, and on the specific student-teacher trust.

## **2.2. Trust in educational settings**

Cosner's (2009) study displays school capacity as a set of organizational resources that enhance academic success, change and innovation in a school. School capacity depends on collegial trust.

Tschannen-Moran and Gareis (2015) affirm trust as a multi-faceted construct and define it as the decision to be vulnerable, based on confidence that the trustee is benevolent, honest, open, reliable and competent. Romero and Mitchell (2018) confirm trust as a multifactorial construct and prompt three elements of trust in school settings: benevolence, competency and integrity, opposing Adams and Miskell's (2016) view of trust as unidimensional.

Research documents the importance of trust for: the professional development of teachers (Bacote & Humphrey, 2009); teachers' effort for self-improvement (Cranston, 2011); teachers' commitment to students (Lee et al., 2011); shared leadership in schools (Beycioglu et al., 2012); organizational commitment and teachers' perception of organizational support (Celep & Yilmazturk, 2012).

A high level of trust has been identified as an important factor for teacher's empowerment and efficacy (Yin et al., 2013); the main element to enhance teachers' involvement in professional learning communities and team working, promoting school quality (Hallam et al., 2014); preventing teachers' burnout (Demaneet & Van Houtte, 2014); a condition to reciprocal learning among teachers (Brücknerová & Novotný, 2017). Trust levels among teachers have also been presented as a factor to be used by school administrators as a predictor and indirect influencer of teachers' professionalization indices (Jafari & Dastjerdi, 2019).

A large amount of research addresses the impact of trust on the creation of positive relationships within the school community, among all stakeholders. There are many studies about the relationship between teachers and principals, showing trust as a decisive factor for a cooperative environment, fostering the development of all actors and thus also enhancing students' success and well-being. Cranston's basilar work presents relational trust as the glue that binds a professional learning community (Cranston, 2011); scientific research tries to identify causes and obstacles to trust development among teachers and principals (Schoorman, 2015); studies point to principals' responsibility in promoting trust to ensure vibrant schools (Tschannen-Moran & Gareis, 2015); teachers' trust in the principal appears as the decisive factor for a collaborative school culture (Terzi, 2016); some studies report the consequences of low levels of teachers' trust in their principals (Balyer,

2017); comparative studies show how an open, relevant, articulated and credible principal leadership builds an environment of trust that enhances quality (Cropper, 2018); trust is shown as the result of a school culture where there is an agile decision-making process, teachers autonomy, a fair distribution of teamworking and the expression of gratitude and admiration (Arar & Masry-Harzallah, 2019); trust is presented as function of the well-being and civic and professional commitment of teachers (Berkovich, 2018); levels of trust are correlated with teachers' perception of academic optimism about their schools (Bostanci & Bülbül, 2018). Some studies propose methods to assure trust as an instrument of teachers' and principals' leadership (Zugelder & Hayes, 2019). Others correlate relational trust with collaborative structures within the school (Miesner et al., 2022). Talebizadeh et al. (2021) mobilize trust analyzing school leadership's styles and its relationship with teachers' professional learning and knowledge sharing. With a quantitative study of data from Iranian primary schools they conclude that learning-centered leadership enhances teachers' trust, knowledge sharing and professional learning, organizational trust is a mediator factor of the impact of distributed leadership in teachers' well-being, according to a study in Chinese schools (Liu et al., 2022). Trust in the principal and trust in the working team have significant levels; on the contrary, trust in the work setting appeared irrelevant. Chinese specific cultural experiences and political organization are given as explanation for these results, although the importance of close and personal relationships for trust may apply universally. A similar study made in Turkish primary schools shows teacher trust in the principal as a mediator of distributed leadership's impacts on teacher professional learning, in conjunction with teacher work motivation (Bektas et al., 2022). In China, Zhang et al. (2021) encountered interpersonal trust as a strong moderator of authentic leadership and teachers' voice, positively interfering in the psychological empowerment of teachers and enhancing the whole positive interactions between leaders and teachers.

Some research dedicates itself to trust involving teachers, principals and parents. In 1998 a study points out parents' levels of trust in teachers significantly higher than the opposite, taking into account social-demographic characteristics (Adams & Christenson, 1998). In a later study (2000) the same authors suggest measures to augment trust and verify that time and quality in relationships are essential elements to enhance trust as a positive factor of students' performance. After an empirical study revealing low levels of teachers' trust in parents, authors propose parents' involvement in school decisions and frequent communication to foster trust. In Turkey, researchers conduct a quantitative study to measure parents' trust in public high schools (Beycioglu et al., 2012). Comparative studies show higher levels of parental trust and involvement in Dutch schools with special needs educational programs (Leenders et al., 2018). Educational and academic experience is enhanced by trust among stakeholders: this can be fostered by a culture of dialogue among

teachers, parents and principals (Diambo & Branco, 2018). Parental trust in teachers in early school years is shown to correlate with parental involvement throughout the whole school experience (Lerkkanen et al., 2013).

Ransom (2020) connects love, trust and camaraderie to describe the factors of the relationship teachers who care for their students enact. In her study, the author extends findings to clarify the intrinsic relations between trust and care, bringing the notions that Noddings' ethic of care has identified: the teacher will assume the needs of the students and create a meaningful relationship that relates to students' outcomes, including general well-being and academic performance (Noddings, 2012). Thus, the teacher develops authentic care for students, in a reciprocal relationship, that Valenzuela and Rubio (1999) distinguish from aesthetic care, which is only an abstract commitment to the educational project of the school. Although not necessarily empirically proven to be linked with trust, scientific literature has been attentive to the quality of the relationship between students and their teachers: academic outcomes are positively influenced by relationships with high expectations and emotional support (Wentzel et al., 2016); effects of positive student-teacher relationships range from academic success to school connectedness, contrasting with negative behaviors when the relationships are themselves negative (Barile et al., 2013; Bernstein-Yamashiro & Noam, 2013). Brake (2020) and other authors insist on the importance of student-teacher trust to foster school connectedness and personal development (Libbey, 2004; Pianta, 1999; Roorda et al., 2011). Specifically, the process of building trust has been identified as decisive to school climate (Allensworth & Easton, 2007), and positive school results (Baker et al., 2008; Murray, 2009). Trust between students and their teachers develops over time, as students verify and confirm teachers' initial attitudes (Phillippo, 2012). Factors of trust are perceived by students when teachers are non-directive, warm, encouraging of high order thinking and empathic (Cornelius-White, 2007); effectiveness in keeping promises, helping students to feel safe, overtone to listen to students' ideas and respectful treatment are other factors of trust identified by Chicago Consortium in School Research (2016); Brake (2020) synthesizes research about what builds students' trust in their teachers: consistent empathy in communication, clear and high expectations, listening and feedback, welcoming different backgrounds, responsiveness to students' needs, avoidance of negative interactions.

Niedlich et al. (2021) contribute with a comprehensive model of trust, after a systematic literature review, including the multiple reciprocal relations of trust in a multi-level educational system, where individuals' trust is influenced by a big variety of personal and social factors. These authors conclude by pointing to the need for an even more widely comprehensive view of trust, to get a realistic approach to its reality, that is no doubt essential to social cohesion and to educational attainment.

In the context of a high performing U.S. urban high school, Demerath et al. (2022) look at how educators earn students' trust, pointing at the importance of a mutual discernment process overtime as educators and students get to understand and value each other so as to enter into learning partnerships, that enhance school valuing, belonging and academic performance. The authors identify teacher motivation, empathy, respect, self-awareness, professional ability, and commitment as constituents of trust, recognized both by teachers and students. This seems a very interesting study, related to our attempt at a wide conceptual framework, for it expands the elements of trust and links them to those of identification with the school and to the academic engagement endeavor. This mutual discernment process seems to link with the questions about the consistency of the educators' true authority and to the importance of students' self-determination, for in the process of discovering each other's value, teachers offer a servants' leadership, but students reciprocally access the convenience and legitimacy of that leadership. At the same time, the study also contributes to clarifying the communal aspects of student-teacher trust, emphasizing the importance of a school community to both teachers and students.

Adams and Adigun (2021) advanced research about trust studying the impact of the principal's support of students' psychological needs on faculty trust in students. The study continues the insights of conversational theory, underlining the cognitive dimension of trust formation processes, that depend on mental representations of trust discernments, which suppose an interaction of educators with students directed to the understanding of reality and of people.

Van Houtte and Van Maele (2012) explored the impact of teachers' trust in students both in academic and vocational tracks. They used data of the Flemish Educational Assessment, ending up with a sample of 3376 students attending 9<sup>th</sup> and 11<sup>th</sup> grades (U.S.A. equivalence), and 461 teachers in 22 academic secondary schools in Flanders, and 3475 students and 754 teachers of 28 vocational schools, during the school year of 2004-2005. Belonging at school was assessed using a translation of the Psychological Sense of School Membership Scale (Goodenow, 1993). With an exploratory factor analysis, the authors identified perceived teacher support as a factor within sense of belonging and decided to treat the other factors as one scale, including peer acceptance, rejection items, and general belonging items. School type was the main independent variable, distinguishing academic from technical-vocational schools. The results indicated that, while in general school belonging was lower in vocational schools, when the variable faculty trust was introduced the difference between school types ceased to be relevant as to school belonging. Teachers' trust in students at school level and parental support at student level were the main determinants of students' sense of belonging. The researchers underline a new result: that faculty's trust in students assessed by the teachers themselves and students' perception of teachers' support are

different constructs, related but not interchangeable. The impact of teachers' trust in students' sense of belonging to the school seems to underline the interconnection of the constructs and may take to schools an encouragement to bring forward teachers' vulnerability and its implied risk-taking energy, and the correspondent appeal to students' benevolence, honesty, reliability, openness and competence, at the same time as it shows the communal effects of personal relationships.

Ahmadi et al. (2020) explored student-level and school-level variables linked to sense of belonging to school. Emphasizing the importance of belonging to school during the risky years of adolescence, the authors verified the factors that increase that essential link to school which enhances personal and academic development. The target population was all high school students in the West Azerbaijan province of Urmia, in 2018/19; 11<sup>th</sup> graders were chosen as a cluster and a total of 1200 students were chosen randomly, resulting in 1003 usable student questionnaires. The study used the Student Sense of Belonging Scale, present in the Programme for International Student Assessment, PISA (2000) student survey. Among other factors such as socio-economic status, parental involvement, sense of fairness, academic self-efficacy and peer support, a trust relationship between the students and their teachers was verified as positively relevant for the students' sense of school belonging. This study underlines the interrelation of factors, which seems important not to overestimate either of them. Some research shows that it is possible to surpass social-economic status as a relevant and predominant factor of academic success, mediated by school belonging (e.g. Battistich, 1995).

### **2.3. Students' trust in their teachers**

Scientific literature about trust as a factor of the relationship between students and their teachers is less abundant than that which dedicates attention to interactions among other school stakeholders, maybe because it is difficult to capture it with scientific research methods, as students are observed to give voluble answers when asked about their teachers, depending on the circumstantial and emotional reactions to the teachers' attitudes (Van Maele et al., 2014). Nevertheless, much has already been concluded. Although a relationship between trust and academic performance remains difficult to clearly establish, the impact of student-teacher relational trust has been identified enhancing a positive school climate and the general quality of all school life (Van Maele & Van Houtte, 2011). Relational trust applies to the trust relationship between students and teachers as a phenomenon that is reciprocally reinforcing because each party then has a built-in incentive to be trustworthy (Van Maele & Van Houtte 2011). Relational trust between teachers and students increases the interchange of experiences and attitudes, allowing teachers to develop a closer approach

to their students' mentality and favoring the adoption of mature and cooperative attitudes on the part of students (Mitchell et al. 2008). Identification with school, high expectations and commitment, wellbeing and student engagement all augment with high levels of teacher trust in students (Van Maele & Van Houtte, 2011).

An ethnographic study (Russell, 2005) narrates the authors experience as a researcher of English and Australian high school students' resistance to school, that underlines the importance of mutual trust for the stability of relationships. Another study (Lee & Schallert, 2008) describes the process of building the reciprocal trust between student and teacher, through the correction of compositions written in English by Korean students, underlying the value of competency perception and teacher's dedication, on the students' part, and of students' commitment, on the teachers' part. A study involving students in North American high schools differentiated by disciplinary offenses (Gregory & Ripski, 2008), describes how trust influences positively in-class behaviors. A democratic and participative climate in primary schools in Sweden is documented to be enhanced by trust, in another ethnographic study (Thornberg & Elvstrand, 2012). A qualitative study with Indonesian high school students (Kumianingsih, 2012) underlines that only through the perception that teachers trust them, will students experience the freedom that motivates the search for knowledge; the exercise of freedom requires risk taking on part of teachers and students and if students trust their teachers, they will focus and learn more easily. A positive correlation between trust between teachers and students and school well-being is presented in another study (Hongwidjojo et al., 2018). Teachers' trustworthiness in the perceptions of pre-school children is advanced in another study (Lawson, 2018). Though with inconclusive results, a quantitative study (Basch, 2012) tried to identify a positive relation between trust relationships of students and teachers, as perceived by the students, and students' academic performance. Moses (2018) shows interesting elements of building trust in a school reform process. Mathews Jr. (2019) elaborates a study trying to establish students' perception of teachers' credibility as a predictor of academic success. The construct of teachers' credibility is based on the works of Hughes and Cao (2009), that propose as elements of teachers' credibility the trust relationship established with students, teachers' competency as perceived by students and the passing of time, that confirms both.

With data from 57 Flemish high schools, Van Houtte (2022) verified that teachers' trust in students enhances students' autonomous motivation through students' trust in teachers. When other factors, such as high socio-economic status, lower students' autonomous motivation, high teachers' trust in students fosters reciprocal students' trust in teachers, thus increasing the students' autonomous motivation. This seems a very innovative study, that tends to respond to several questions put by researchers and educators, namely underlining the importance of reciprocal trust positively impacting students' self-

determination and constituting a factor of change when in presence of socio-economic difficulties.

In synthesis, trust between a student and a teacher is studied by research as either considering the student the trustor and the teacher the trustee, or the other way around. Perhaps mainly because of the difficulty of measurement, the reciprocal assessment, although seemingly important, is scarce. Also, it results from some studies that the same constructs applied reciprocally are not interchangeable, even if a link between them becomes clear. On the other hand, the recognition of a collective dimension of trust, involving reciprocal links among all members of an organization, namely a school community, has constituted the proved result of several studies, that acknowledge thus the social dimension of trust.

#### **2.4. Individual identification with organizations and its links to students' identification with school**

Ashforth et al. (2008) present a thorough description of the construct. Identification with organizations is depicted as a multi-level reality, embedded in the deep human needs of being part of something greater, of establishing relationships with others and of feeling a sense of belonging. Rooted in the early works on organizations by Chester Barnard and Frederick Taylor, the construct was first theorized by Simon (1947) and March and Simon (1958) and became object of systematic research with Albert and Whetten (1985), Ashforth and Mael (1989), and Dutton et al. (1994). Ashforth et al. (2008) predict the growing importance of organizational identification in times of instability, because the process of identification confers a sense of belonging that corresponds to an individual essential need. Being so, they point out the importance of understanding the identification process and its outcomes, so as to acknowledge its perils and advantages.

Self-enhancement, as the possibility of thinking positively about oneself, appears as the main reason for an individual to develop identification with an organization, experiencing a positive social identity, both because of belonging to a prestigious collective and because of striving to correspond to a collective ideal (Albert & Whetten, 1985; Ashforth & Mael, 1989; Dutton et al., 1994; Swann, 1990). This factor becomes one of the most relevant for the scientific literature about student identification with school, as it points to the essential need of youngsters to feel valued and to belong to a community where they learn and grow. As a drawback, self-enhancement can have a detrimental effect on the consideration of out-groups (Haslam & Ellemers, 2005), an aspect that may show in a school, either towards students at other schools, or among different groups within the same school. Ashforth (2001) enumerates other motives for an individual wanting to identify with an organization,

such as: self-knowledge, self-expression, self-coherence, self-continuity, and self-distinctiveness (cf. Vignoles et al. 2006), motives that seem to apply to students towards a school with which they tend to identify. Research also shows that the role self-verification plays in individuals' identification with organizations can be even stronger than that of self-enhancement, because of the need to see oneself coherent over time, especially if there is a negative self-perception (Stets & Harrod, 2004; Swann, 1990). This seems to be a very interesting line of research in schools, although needing consistent longitudinal studies, not always easy to implement: in the school life of a student is there this need for self-verification? Psychological safety and trust are the core of self-consistency and self-efficacy motives for identification (Erez & Earley, 1993) and identification happens or changes according to decisive moments of the individual's process of socialization (Bullis & Bach, 1989). Can these psychological motivations be detected in students in relation to their schools? Research cited later in this thesis seems to confirm it does, even if the psychological maturity of students also develops and does not always reach plenitude during basic school time.

Research is rich pointing out the organizational outcomes of identification. Among the most preeminent are: cooperation, effort, participation and organizationally beneficial decision making (Bartel, 2001; Kramer, 2006; Simon, 1976; Tompkins & Cheney, 1985), intrinsic motivation (e.g., Kogut & Zander, 1996; van Knippenberg & van Schie, 2000), task performance (e.g., van Knippenberg, 2000; Yurchisin, 2007), information sharing and coordinated action (e.g., Cheney, 1983; Grice et al., 2006; Tyler, 1999). Individuals assume the organizational goals and process them as their own, becoming one with the organization (DiSanza & Bullis, 1999). Are these aspects applicable in school settings, and especially to students? Research on collaborative learning seems to answer positively to this question. Asforth et al. (2008) give an even longer list of positive organizational outcomes that emerge from research, but call attention to their ambiguity when considering the specific traits of organizational identification, that should not be confounded with proximal constructs, on one hand; and to the emerging literature on negative outcomes of identification for organizations, such as: lower effectiveness and creativity (Rotondi, 1975); on-going commitment to failed organizations (Haslam, 2006), resistance to organizational change (Bouchikhi & Kimberly, 2003); aggressive behaviors towards outsiders (Aquino & Douglas, 2003; Schwartz, 1987). Overidentification is shown to bring many drawbacks both to individuals and organizations, as individuals' creativity and critical thinking merge with the perceived organizational culture and lose their force (Dukerich et al., 1998), provoking automatic trust and other mechanisms that impede positive change, correction and amelioration. Some research on school stagnation and reform may identify common elements with this line of research. In conclusion, the authors affirm that the fact that

identification “(...) roots the individual in the organization” (Asforth et al., 2008, p. 360) shows its compelling interest, its potential for individuals and for organizations and also its challenges. Linking this research to our field, organizational identification seems to bring very challenging insights into what identification with school may signify to a student. In a phase when individuals are discovering their identities, what is positive school identification and what are its outcomes?

Even acknowledging the risks, recent research has shed some light on positive outcomes of identification with the organizations and on the conditions for this positive effect to happen. Identification with the organization is found linked to the organizations’ emotional culture, that is enhanced by motivational language used by leaders to communicate their vision and strategies. The study made by Yue et al. (2021) shows how a positive emotional culture fosters joy, gratitude, pride and comradery between employees, which in turn positively impacts interpersonal relationships and identification with the organization, as people feel positively about it.

## **2.5. Student Identification with School**

The research developed by Kristin Voelkl over the years and synthetized in her chapter of the *Handbook of Research on Student Engagement* (Voelkl, 2012) presents an overview of studies about school identification. The construct is defined by two factors (Voelkl, 1996, 1997, 2012): sense of belonging and valuing of school culture.

The author proposes the following definition: school identification is “an intrinsic form of achievement motivation that encourages students to engage in appropriate learning behaviors (...), that is, an internal desire to achieve, develop competencies, and take pleasure in academic success” (Voelkl, 2012, p. 194). Its components are first identified by Finn (1989) as belonging and valuing. Both rooted in the psychological theories of human needs (Maslow, 1968), belonging comprehends the need to experience a sense of community — “a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members’ needs will be met through their commitment to be together” (McMillan & Chavis, 1986). Valuing, in turn, expresses the individuals’ “need to feel their actions are worthwhile and to have a sense of competence and positive self-regard” (Voelkl, 2012, p. 195). The arena where the person experiments this competency is valued, either because it causes a sense of fulfillment, or as a factor of another goal attainment, such as professional future competency, prestige, social acceptance and participation, family and/or peer appraisal.

School belonging is the “extent to which students feel personally accepted, respected, included, and supported by others in the school social environment” (Goodenow, 1993, p. 80). Teacher-student relationships are the crucial factor to this sense of belonging (Uslu & Gizir, 2017), that in turn impacts students’ well-being and self-esteem (Prain et al., 2013) and respect of school rules (Dehuff, 2013). The author assumes that: identification involves emotion more than cognition, thus being affective and consisting of a set of attitudes towards school; this set of attitudes influences and is influenced by behavior; and identification develops over time. Finn (1989) proposed one of the first models to capture student engagement and its influence in academic success, emphasizing students’ participation in school and students’ identification with school, comprising belongingness to school environment and valuing of what is considered by the school as relevant outcomes. Other researchers have investigated connected constructs of affective engagement but the link with academic achievement is not clear. Voelkl (2012) distinguishes achievement motivation — “general desire or disposition to succeed in academic work and in the more specific tasks of school” (Newmann, et al., 1992, p. 13) causing commitment, persistence, optimism and enjoyment in academic work — from identification, considered an “intrinsic motivation to achieve, develop competencies, and take pleasure in academic success” (Voelkl, 2012, p. 195).

Psychological theories of human needs (Maslow, 1968) and theories that describe individuals’ need to experience a sense of community (McMillan, 1996; McMillan & Chavis, 1986) are the theoretical framework in which Voelkl (2012) embeds her synthesis of school identification. Sense of community is a “feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members’ needs will be met through their commitment to be together” (McMillan & Chavis, 1986, p. 9). The other relevant assumption is that individuals also have a need for feeling competent and recognized as such by others (Bandura, 1977; Connell & Wellborn, 1991; Deci & Ryan, 2000; Maslow, 1968), which causes individuals to value the place or collective where their competence is demanded, encouraged, and revealed.

In a previous work, Voelkl had defined belongingness as “feelings that one is a significant member of the school community, is accepted and respected in school, has a sense of inclusion in school, and includes school as part of one’s self-definition” (Voelkl, 1996, p. 762); the author presents belongingness as bidirectional, because the individual experiences receiving care from the collective to which he belongs, but also cares for that collective (Whitlock, 2006). Research shows that the school community can respond to the need for belongingness and that this response impacts motivation and behavior, enhancing academic commitment and success, serving a normative function that reinforces common behavior (Elliott & Voss, 1974; Hirschi, 2005; Polk & Halferty, 1972), and preventing the

negative effects of social and emotional handicaps (Connell et al., 1994; Finn & Rock, 1997; Maddox & Prinz, 2003; Marcus & Sanders-Reio, 2001; Resnick et al., 1997). Not experiencing belonging can trigger alienation, low motivation and compromise development (Connell & Wellborn, 1991; Furrer & Skinner, 2003; Juvonen, 2006).

Valuing comes from the sense that school outcomes are personally important (Anderman & Wolters, 2006; Eccles et al., 1983; Schiefele, 1999; Eccles & Wigfield, 1993, either because of an intrinsic sense of fulfillment or due to external factors such as grades and praise; valuing also happens because of a perception of practical importance, for school work is seen as the way to attain future advantages (Eccles et al., 1983).

According to Voelkl (2012), school identification develops in time: in the early years it is prepared by external motivators causing affect for school, and this initial affect slowly evolves, through various achievements and interactions with teachers and peers, to an intrinsic motivation and to identification. Secondly, the development of identification is impacted by contextual factors: similarity to others, perception of safety, fair discipline and praise, and caring teachers who provide academic and personal support. Finally, being a set of affective attitudes, identification with school influences attitudes and behaviors more than academic performance directly. Nevertheless, academic achievement is more likely to be indirectly facilitated by identification with school and inversely impeded by disidentification.

Teachers are identified as a preeminent factor of school identification, as they show concern for students' welfare and support their efforts, enact clear norms and general high expectations, and encourage student's autonomy (Battistich et al., 1995; Brewster & Bowen, 2004; Hughes & Kwok, 2007).

In middle grades, teachers' support can be decisive to adolescent striving (Eccles et al., 1993). In high school, teachers' encouragement may serve as a protective function against failure in difficult tasks (Furrer & Skinner, 2003; Hudley & Daoud, 2007; Newmann et al., 1992; Ryan & Patrick, 2001). Supportive teachers benefit all students socially and academically, nurturing pro-social behaviors (Wentzel, 1997).

Roeser et al. (1996) verified the interplay of teacher-student connectedness, belonging, affective outcomes and academic achievement in a context of school identification influenced by caring teachers. Teachers' commitment to holding students to high academic and social behavior standards is perceived as support (Yowell, 1999). A study assessed the positive impact of teacher's relationships with students, providing structure and support for autonomy, on student engagement across the school year (Skinner & Belmont, 1993). The constructs of trust and identification interact as students' trust in teachers is shown to rely on consistent expectations for all students, whatever race, gender or achievement levels,

while perceived differentiated expectations lead to poor interactions, low academic performance and disidentification (Chavous et al., 2008; Davidson & Phelan, 1999; Felice, 1981; Rubie-Davies, 2006). Encouraging autonomy by appreciating students' uniqueness and promoting individual interests encourages school identification (Davidson & Phelan, 1999; McNeely et al., 2002; Ryan & Patrick, 2001; Skinner & Belmont, 1993; Wang & Holcombe, 2010).

The classroom community is identified by research as relevant to promote school identification, impacting belonging and valuing, and to foster social skills. Teachers have a big impact in creating a positive environment and enhancing interpersonal relationships through promoting working groups, cooperative learning and dialogue (Johnson et al. 1985; Osterman, 2000, Ryan & Patrick, 2001).

Beekhoven and Dekkers (2005) contest Finn's and Voelkl's models of participation-identification, based on research that identifies family resources and no other variables as the main cause for school drop-out of boys from low-income families in low vocational track. This challenge is addressed in recent scientific literature, and further noted in this thesis, as authors thrive to document the conditions that can enhance students' development, especially in adverse circumstances such as low social-economic status.

A systematic literature review is made by Allen et al. (2022) which lists the studies that propose practical interventions to enhance school belonging, thus documenting the expected effects and benefits of a high student feel of belonging to the school, proximal of students' identification with the school. Proximal constructs are widely covered by research and this thesis tries to give a fair account of them.

Our own systematic literature review (Brito et al., 2021b) reported on several studies that we hereafter recall. These studies look at student school identification and proximal constructs.

Carvalho et al. (2020) studied the relation between teachers' feedback and school identification and the role of school identification as mediator between teachers' feedback and students' behavioral engagement. The authors also aimed at verifying the changes in these constructs as students become older and progress at school and the differences in the constructs when applied to academic courses and professional ones. 2534 students of public and private Portuguese schools, in 6<sup>th</sup>, 7<sup>th</sup>, 9<sup>th</sup>, 10<sup>th</sup> and 12<sup>th</sup> grades, participated in the study, 69.3% attending academic courses and 30.7%, professional courses. The Questionnaire Feedback, Identification and School Trajectories (Carvalho et al., 2005) was used, combined with the Teachers Feedback Scale (Martins & Carvalho, 2014); the School Identification Scale (Carvalho et al., 2015) and a nine-item scale (Veiga et al., 2016) to assess students' behavioral engagement. The authors conclude that there was a significant positive

relation between students' perception of effective teachers' feedback and school identification; that school identification mediated students' engagement with school activities, enhanced by effective teachers' feedback; that there was not less dependence of older students on teachers' feedback, though students in 6<sup>th</sup> and 7<sup>th</sup> grades reported more effective teachers' feedback than in the 9<sup>th</sup>, 10<sup>th</sup> and 12<sup>th</sup> years. School identification was found to be less in the highest years. Students in the professional track show higher levels of identification with school. Effective teachers' feedback seems to be proximal to some elements of student-teacher trust, at least linked with competence, honesty and openness on part of the teacher, features highly appreciated by students.

Simonsen and Rundmo (2020) developed a study that tried to compare the impacts of school identification and self-efficacy on school satisfaction of Norwegian high-school students. Framing their study on the importance of social identification as a response to the fundamental need of belonging, they point at social identity leadership (Subašić et al., 2011) as an essential feature of teachers' mission. The authors applied a survey to 794 first year high-school students, from both general studies and vocational education, two months after the beginning of the school year. Questionnaires were used including items to account for School Satisfaction, Cognitive and Affective Identification, Social Identification, Social Identification with the Teachers and with the Classmates – Group Identification Questionnaire, the Identity Leadership Inventory Survey, Multiple Group Membership, General Self-Efficacy and Academic Self-efficacy Scale. The authors found that students' affective identification with school was the most relevant factor of school satisfaction and showed a strong association with self-efficacy, indicating the social feature of self-efficacy. The study also pointed at a relevant link between teachers' social identity and students' identification with the teachers. Finally, the authors account for a strong relation between identification with classmates and school identification, stressing the importance of educators' management of the students' identification process, to avoid alienation dynamics. In conclusion, the authors point out that the role of self-efficacy in enhancing school satisfaction seems minor to that of school identification, and that self-efficacy itself benefits from school identification. The authors proposed to contribute to a “new psychology of classroom management”, as a social identity leadership process, uniting teachers and students in a common quest. This seems a particularly important study, relevant to answering such questions as which is the right stance between the importance of self-determination in education and the need for belonging and valuing. The adequate stance should also bring the social aspect of education into play, answering the question about the political dimension of class and school interactions.

The following studies analyze school belonging. This construct seems to correspond to one of the elements of school identification, according to Voelkl (2012) and tends to absorb the

other element of school identification, valuing, for these constructs are both latent in scientific literature on one hand, and, on other hand, tend to be proximal. We bring here the studies where “school belonging” or “sense of school belonging” seem to mean the same as “school identification”, or almost the same.

Vaz et al. (2015) studied the personal and contextual contributors to school belongingness among primary school students in Australia, through survey questionnaires applied to 395 6<sup>th</sup> and 7<sup>th</sup> grades students, and data treated by linear regression models. Demographic variables account for 2.5% of SB; student personal factors account for 49.5 %; school factors, among which, teacher-student relationships, account for 13.9%; family factors for 3%. Authors propose that a democratic school environment will influence higher levels of school belongingness through enhancing the personal and school relevant variables. The emphasis that this study discovers in student-teacher relationships compared to other variables of school belongingness seems to indicate both the possibility of its enhancing during adolescence, and the importance of caring for it. Within these relationships' dynamics, student-teacher trust emerges for its comprehensiveness.

Hogberg et al. (2021) accounted for a decline of school belonging over the last two decades and try to understand its causes. The authors focus on 15-16 years old students and use individual-level survey data from the Swedish version of the PISA, in which Swedish students reported the highest scores of school belonging in the years between 2000 and 2003, declining after that, being thus exemplificative of a general trend observed in the other countries participating in the program. The first objective of the study was to research the characteristics of the Swedish trend: the authors found a polarized tendency, where there is a general decline, but accentuated in students from low-income and migration backgrounds; there is also a declining trend of school belonging for students with low achievement, especially after 2012, which seems disproportionate with the average.

The second objective of the study was to find the causes of this decline. But, except for mathematics anxiety between 2003 and 2012, the other variables, namely, school disciplinary climate and student-teacher relationships did not explain it. Although only as a theoretical hypothesis, the authors suggest that, since the declining in Sweden coincided with a performance-oriented shift in educational policies, that shift can explain the data, alienating from school the most fragile students. The authors appeal to the necessity of more research on the field.

The perplexity revealed by this study is yet to be answered as research brings different and sometimes apparently contrasting results into play: is academic press a positive factor of student identification with school? Is academic performance-oriented climate a negative factor of students' sense of belonging to school? Is this true only or mainly about students

with cognitive, social, economic, or affective difficulties? Are these questions differently answered depending on schools, areas, countries, continents, cultures? This thesis' conclusions attempt to shed some light over possible leads, leaving it to further research to clarify the answers.

Wong et al. (2019) explored the relevance of Student-Teacher Relationships (STRs) and Sense of School Belonging (SSB) for future orientation of adolescents, which includes expectation, aspirations, planning, anticipation of future consequences and time perspective. Underlining the social variables of future orientation, the authors attempt at answering two questions: do STRs and SSB predict educational and career expectations? And do SSB and educational expectations interfere in the impact that school climate variables have on career expectations? The study included 3,238 students aged 15 years, who participated in the Hong-Kong 2003 PISA) and answered the optional questionnaire Educational Career and Information Communication Technology.

Results seemed to point to students having higher expectations when they experience positive relationships with their teachers and sense that they belong to school. Interestingly, while STRs seem to influence mostly the individual sense of school belonging and educational expectations, it is school belonging that in turn seems to impact directly on career expectations. Our interpretation of these results, based upon research on the different questions as developed in the Introduction of this thesis, is that healthy STRs, which include student-teacher trust, affect mainly the individual development of the student, and impact the student's assessment, experience and convictions at an individual level, whereas school belonging impacts mainly the social students' self-image, making it possible for the student to acquire confidence in social skills, such as implied in success in a professional career. That is why this thesis looks for the connections between constructs and finds it interesting that student academic optimism may describe an experience with impact in the future aspirations of students.

Allen et al. (2018) presented a meta-analysis of results found in 51 quantitative studies, published between 1993 and 2013 involving 67.378 students aged 12 to 18, in schools in Australia, New Zealand and the U.S.A. The authors tried to identify in a set of ten themes which of them were linked to school belonging. Individual and meso level factors were analyzed as relevant; to our present review, the most significant results were the ones obtained looking at the micro-level factors, especially at student-teacher relationships. At this level, teacher support was found to be the most relevant to school belonging, to the point of permitting the attenuation of negative family and peer interactions. Teachers' support, combined with the help of parents in a whole-school approach to students was found to be the most relevant factor of school belonging. This seems also a very significant

result to our study because of the proximity with student-teacher trust — teacher support seems linked to the facets of the construct on part of the teacher: benevolence, honesty, openness, competence, and reliability.

Furthermore, Allen et al. (2018) highlight the relationship between teacher support — proximal of student-teacher trust — and school belonging — proximal of student identification with the school, bringing new shades to research about the interconnections of all these constructs and confirming our thesis that a rich conceptual framework is adequate to face school life.

Uslu and Gizir (2017) studied the role of student-teacher relationships, peer relationships and family involvement in adolescent school belonging. They applied a survey to 815 seventh and eighth grade students at state schools in four central districts of the Mersin province in Turkey. The authors used the Sense of Belonging sub-scale of the Perceived Cohesion Scale (Bollen & Hoyle, 1990); the Student-Teacher Relationships and Student Interpersonal Relationships, sub-scales of The School Climate Survey (Haynes et al., 1993); and the Parent Involvement, sub-scale of the Show Me Character Student Survey (Marshall & Caldwell, 2006), divided into Parent Involvement at Home and Parent Involvement at School. All the variables were shown to impact positively on school belonging, and teacher-student relationship was by far the most significant and associated with the other personal, peer and parent related factors. This is another study verifying the relevance of student-teacher relationships in adolescents' school belonging, above other variables, that research proves as very significant impacting other adolescents' attitudes, such as parents' and peers' relationships. The fact that teachers can influence their students above those in what concerns their students' attitude towards school emphasizes teachers' responsibilities and opportunities.

Wallace et al. (2012) proposed an interesting construct, namely, being known, as describing the adolescents' perceptions of development tasks, psychological perceptions and effective teaching through which teachers influence students school belonging. The researchers used a sample of 77 high school students, in Los Angeles (California), Pittsburgh (Pennsylvania) and Saint Paul (Minnesota) aged 14 to 20, recruited in development programs and different schools, and conducted focus groups with an average of 5, 6 participants, and a subsequent analysis of the raw data through a conceptualization process. Findings underlined the accuracy of students perceptions and the importance that students give to three items: teachers' devotion to teaching and their competence and effectiveness in doing so, meeting the real student and adapting methods and developing a caring relationship with each student; the instrumental support that teachers are capable of mobilizing to actually facilitate and foster students' academic goals, viewed as a professional responsibility that

should always be present; the “benefit of the doubt” attitude, that allows for respect, tolerance and acceptance of the turmoil naturally present in a process of gradual independent decision making on part of the students, essential to their growth, opposite to negative prejudices and generalizations about students. The authors conclude that the student-teacher relationship is the most relevant relationship for students, for it is within this relationship that the essential questions of adolescence — who am I? Who can I be? — are looked at and cared for. This is another study that seems to confirm this thesis stressing the importance of the student-teacher relationship to the healthy development of each student. The three items appreciated by students are again proximal to the five facets that students perceive in the teachers they trust: it seems, therefore, fair to consider “to be known” as a proximal construct of student-teacher trust. On the other hand, the denomination “to be known” chosen by the authors suggests proximity with the valuing, facet of student identification with the school, complementing that of belonging, in giving the student the perception of being recognized, respected and valued by the school community in general and by teachers in particular.

Renick and Reich (2021) analyzed the elements of school environment perceived by the middle school students as relevant for their sense of belonging to the school. The factors identified corresponded to the main areas that research usually connects to school climate: safety, teaching and learning, relationships and institutional environment. This is another confirmation of what has been affirmed and one of the most important contributions of this study seems to be its actuality, meaning that recent technological, social and cultural convulsions did not alter what research has been finding for two or three decades.

Prati and Cicognani (2021), authors of a longitudinal study with students from an Italian high-school verify that the existence of school sense of community increases students’ well-being, measured in an Italian school in the beginning of the academic year and then by the end of the same school year. Proximal to school belonging and school connectedness, the construct of sense of community applied to the school adds some elements as to the nature of the school as a place where everyone needs everyone and includes the existence of trust among all members, proximal to collective trust as described by authors such as Forsyth et al. (2011). The authors link their research to the positive individual, social and emotional outcomes of sense of community that enhance well-being, as well as the liaisons that sense of community appears to have with the theory of need, present in the sense of belonging and of membership experienced within the community.

In synthesis, school identification is an affective construct correlated to personal development, academic performance, school improvement and trust among stakeholders, including sense of belonging and valuing (Mitchell et al., 2018; Voelkl, 2012). The inclusion

of valuing (Finn, 1989) seems to be an important contribution to this construct, as it brings an active cognitive and affective valuation of the importance of what the school implies for the students, especially in terms of the students attributing significance to school activities and classroom work. This factor of valuing also seems to have connections with the aspects of self-regulation and participation present in a fulfilled personality, even in adolescence, for the ascription of value tends to enhance self-motivation to enroll in school chores (Voelkl, 2012). That is why this thesis considers this construct more complete than that of sense of belongingness, even if the latter does play an important role in research.

Authors describe a double value in the commitment assumed by students that identify with school: a commitment to learning and a commitment to the school as institution and “place” (Firestone & Rosenblum, 1988; Seeman, 1975; Smerdon, 2002; Wehlage et al., 1989). Identification involves student engagement with school, operationalized, according to research, in three dimensions: behavioral, for students participate in classroom and school activities; emotional, as students nurture feelings of appraisal for schoolwork and for teachers, and of belonging to school as a community; and cognitive, as students develop efforts and feel motivated to learn, becoming resilient and self-regulated (Fredricks et al., 2004; Ladd & Dinella, 2009; Mitchell, 2012).

The essential factor of this construct, in the context of this thesis, seems to be the connection that it describes between the self of the student and the whole of the community that a school is. In fact, whereas the phenomenon of student-teacher trust happens on a one-to-one relationship, the phenomenon of student identification with school describes the possibility of a person, an individual, freely taking part of a whole. This dynamic seems particularly interesting considering students and schools, for schools are mandatory for adolescents. Being so, there seems to be an identifiable difference between students who attend school because they *have to* and students who identify with the school, they (have to) attend. What are the factors that may cause, enhance, facilitate, attract an adolescent to be part of a school, where the student finds other students and adults, with some degree of unfamiliarity? The fact that the adolescent is not yet a mature human being, but no longer a child, adds yet other factors: being more vulnerable, at the same time less engaged and more radical than adults, the process of identification may acquire relevant nuances.

The needs to belong and to be valued, thoroughly described in research (e.g., Voelkl 2012), expose a characteristic widely observed in adolescents. Students seem to feel incapable of (and maybe also unwilling to) attributing meaning and value to their deeds exclusively on their own, experiencing the desire for the recognition of value by others. This phenomenon seems even more complex and interesting because adolescents appear very critical as to

whom they confer legitimacy to value and to whom they want to belong, especially when it comes to a community guided by adults.

There seems to exist a peak of “extrangeness” during adolescence (empirical research confirms a diminution of identification levels during middle school, especially around 8<sup>th</sup> grade). This gap between each student and the school as a whole, and in particular as an institution guided by adults, seems to, on one hand make it more difficult to attain identification with school, but on the other hand favor a critical stand that enhances a healthy identification when it happens, for the factors that are its condition have to be continually verified. Students (and parents) seem very sensitive to those factors and identification with school, although seemingly ensuring some durability in time even through adverse signals, is easily ended and results in drop-out when its conditions do not happen. This is particularly observable when students and parents can choose which school to attend.

## **2.6. Are Student-Teacher Trust and Student Identification with School linked?**

Still little research verifies the specific possibility of a relation between levels of student trust in teachers and student identification with school. An interesting study (Mitchell & Forsyth, 2004) shows that student’s trust in the principal has an impact on student identification with school. The same study concludes that parent trust in the principal or socioeconomic status are not significant to student identification with the school, and that the latter tends to be present at the elementary level but fade away through adolescence. Student trust, perceptions of safety and school identification are found as covariables (Mitchell et al., 2018) and factors that influence different levels of student school identification in different schools. This is the one study found in English recent scientific literature that seeks to establish the relations between student-teacher trust, perception of safety and school identification.

Mitchell et al. (2018) investigated the effects of students’ trust in teachers and of students’ perception of safety on school identification. The authors concluded that student trust, safety and identification with school covary positively, and that the levels of student trust in teachers and students’ perception of safety are school properties that explain different levels of students’ identification in different schools. The authors applied a student climate survey composed of three scales — Student Identification with School, Student Trust in Teacher and Student Perception of Safety - in an east coast district in the U.S.A. 59.8% of elementary students, 22.6% of middle school students and 17.6% of high school students. School level,

minority status and percent free and reduced lunch (as a proxy to socioeconomic status) were included as covariates. The authors emphasize the importance of including the students' voice in further studies and conclude that student-teacher relationships are the essential factor of cognitive and affective identification of students with school, confirming earlier findings about the link between student-teacher trust and school identification (Adams, 2014; Mitchell et al., 2008). In the quantitative analysis in this thesis, we study the students' perspective, which seems an essential feature of school quality assessment, elusive as it may be. As to the students' perception of safety, we assumed it as a prior condition in the schools that participate in our study, although it is an important element to be considered.

Mitchell et al. (2018) challenge the conceptualization of school identification as including participation (Finn, 1989), because it may mislead focus on previous academic achievement and thus exclude from identification students who do not have high levels of performance. In fact, in a previous study, Mitchell et al. (2008) argue that, as an affective construct, identification should be positioned linked to student-teacher relationships. The authors add that identification implicates the existence of a collective sense of identity, to which each student relates and partakes (Ashmore et al. 2004).

The works of Forsyth & Adams (2004), Adams et al. (2009) and Mitchell et al. (2008) are referred to as confirmation that positive trusting relationships between students and teachers are essential to school identification, showing that collective students trust (Adams, 2014) is the main predictor of school identification, beyond the effects of social-economics status, school level and prior academic performance.

## **Conclusion**

The complex construct of trust, even involving risk — and maybe precisely because that risk is evident from the beginning and proportionate to the effect of the correspondent positive facets — is a positive and essential feature of relationships, both in general adult settings and between developing human beings as are students, and their teachers in school settings. At the origin of the relationship of trust, thus constitutive to it, a vulnerability is assumed by the trustor. This fact exposes fragility but puts the trustor “on guard” as well. In the actual circumstances where role-based trust is very low, non-existent, or even negative, the student does not trust unless benevolence, reliability, honesty, openness and competence on part of the teacher are verified. In this process, the student mobilizes both cognitive and affective capabilities, and exercises freedom and decision-making capacity, deciding to trust. That is why trusting implies personal development and self-determination, from the beginning. To endure, student-teacher trust depends on the teacher's consistent

benevolence, reliability, honesty, openness, and competence, perceived by the student. This is a big personal challenge which may be helped by all the other trust relationships that may happen in a school, making it possible for the teacher to expose vulnerability and experience benevolence, reliability, honesty, openness and competence on part of the principal, other teachers, other collaborators, parents and even students. When this experience of mutual trust becomes a climate, beyond the individual relationships, research recognizes collective trust.

This dynamic of trust appears related to another dynamic based upon the deep needs to value and be valued, and to belong to a community and be recognized as its member, described by the construct of identification, that is considered valid for students in school settings and called student identification with the school. Research highlights its positive outcomes, that benefit the students' personal development, social skills, engagement, self-efficacy, and well-being. But the students' needs to be valued and to belong put a hard responsibility on the adults who are expected to value and to concede membership, for the students' cognitive and affective capacities required to judge whether it is good to identify, or not, are radical, intense and immature. Most hard questions, such as the risk of alienation, come from organizational research and emphasize how delicate it is to captivate students' identification. This point should impact parents, school leaders, teachers, legislators, and administrators, so as to merit the claim to the students' identification with school.

Considering the above framework, this thesis looks for a robust link between student-trust in their teachers and school identification, so that it becomes clearer what a school must be to earn its students' trust and to be worth and safe to identify with. That link will probably show also in students' academic performance, for research has already verified that student-teacher trust and school identification positively impact learning.

Trust between a student and a teacher has been identified in scientific literature as a crucial factor of personal development and of quality of schools as learning communities, improving the general social environment, and boosting the possibility of the students' providing for a healthy community, both while growing and when the student has become an adult. As seen, research underlines the fact that trust involves risk of evolving to over-trust, more acutely in contexts of crisis, exposing the vulnerability of the trustor to someone that does not fulfill the requested benevolence, openness, honesty, reliability, and competence. The insertion of personal trust relationships in a larger net of bonds, implied in students' identification with school, seems a necessary antidote to this risk.

Students' trust in their teachers is one of the multiple and complex trust relationships that occur in a positive school community. We adopt the definition by Tschannen-Moran et al.

(2013), already the result of a research depuration and based on the five-facet model proposed by Hoy & Tschannen-Moran (1999): the student's trust in the teacher implies a willingness to be vulnerable based on the conviction that the teacher will relate and act with benevolence, honesty, openness, reliability, and competence. The positive elements of trust (e.g., benevolence) seem well established in scientific literature, although their concrete expression may vary from culture to culture, or even from school to school what is considered the content of one facet may interchange with another or be different, according to the students' perceptions and experiences. Nevertheless, it seems as though across the various empirical studies some homogeneity has been reached that allows funded conclusions. The acceptance of a negative facet is also very challenging. The fact that students and teachers are willing to assume and expose vulnerability seems to us one of the most important points to investigate: that a student is objectively vulnerable to the teacher seems obvious (Tschannen-Moran et al., 2013); that the teacher is also objectively vulnerable to the students, even though because of different factors, mainly affective, but also professional and institutional, may also be evident (research on teachers' burnout confirms this, for example, Lee, 2011; Liu, L. et al. 2022).

But the willingness to recognize and act positively upon this vulnerability, and upon its reciprocal aspects, seems a point lacking investigation. May it be that this accepted vulnerability constitutes the point of intersection of the two constructs of student-teacher trust and student identification with school? This hypothesis would eventually make sense if we could consider that personal vulnerabilities express a desire for something that can only be fulfilled in the company of others, therefore be adequately addressed only in a community. That community, in turn, does not exist without personal dynamics and interactions. On the other hand, student identification with the school occurs also because of a need to belong and to value and be valued by a community of people, expressing the essentiality of human relatedness, present from the womb, as confirmed by research (Ashforth et al., 2008). These factors would bring us back to the intertwining of the two constructs of student-teacher trust and of student identification with school. If so, the two constructs could eventually be studied with a common basis of facets, or at least be tested in their inter-connections, and that could add robustness to a latent complex new construct or to the purposed "model" that this thesis pursues. Even without a common intersection, the fact that it would be possible to identify a need as an element present in both constructs would already constitute a novelty.

Our conceptual hypothesis is that these two constructs are able to describe two different affective moves, being the need to belong a more passive one, for it means that each individual recognizes a want to be cared for, while the need to value and be valued expresses a desire of approval of actions and attitudes which legitimacy and significance depend upon

someone else's judgement and imply some degree of proactivity on the part of the needed person. This is why this thesis proposes that both constructs of student-teacher trust and of student identification with school may have the same route in a human need: the personal liability, expressed in a desire that becomes fulfilled in a communal and institutional reality as is a school, in the case of student identification with school; the expression of a need that is assumed as a flaw that another will be able to help fulfill, when it comes to student-teacher trust. In both cases, though, one of the interesting aspects may be that the "minus" in the facets urges a force capable of making the student assume taking a risk, which is a very positive aspect of a personality (Maslow, 1968; Finn, 1989; Jackson, L., 2018; Kumar & Mohideen, 2021).

When describing students' identification with school, Voelkl (2012) does not mobilize the construct of student-teacher trust, nor does the author establish an explicit relationship between school identification and student-teacher trust. However, Voelkl's section on teachers' relationships with students (Voelkl, 2012) reports teachers' encouragement as impacting school identification and gives a description of this construct that seems proximal of the student-teacher trust constitution (Battistich et al., 1995; Brewster & Bowen, 2004; Hughes & Kwok, 2007).

In effect, the elements of teachers' encouragement, although less acute and seemingly less rigorous than the facets distinguished by Tschannen-Moran and her colleagues (2013), seem fairly correspondent to the facets of student-teacher trust. Considering the elements of teacher encouragement according to Voelkl, those are: showing care, which may correspond to benevolence and reliability, elements of trust; providing clear norms and expectations which we find very proximal to honesty and openness; and encouraging students' autonomy, facet that connects with competence, while a competent teacher promotes real learning, therefore autonomy, whilst autonomy means personal apprehension of reality and capacity to act upon that knowledge. Cooperative learning (Johnson et al., 1985; Osterman, 2000), which largely depends on the student-teacher interaction, is presented as an important means to foster identification. This constitutes another hint pointing to the possibility of the inter-relations of the two constructs.

A correspondence and complementarity between the elements of trust and the elements of school identification may show a useful link to foster both dynamics, enhancing the quality of the relationships between members of the school community, and clarifying the characteristics of a positive school environment. The two constructs together appear vital to a healthy school environment.

These conclusions taken from both paths of research — on student-teacher trust and on school identification — rise a future research question: is the fact of experiencing

vulnerability both by the student and by the teacher a positive trigger to risking a relationship of reciprocal student-teacher trust which, in turn, finds its institutional dimension in school identification? In our view, experiencing vulnerability corresponds to a relational need of objective attitudes and behaviors (reciprocal benevolence, honesty, openness, reliability, and competency) enacted by individuals – the student and the teacher – but also by a community, the school, to which both individuals feel they belong and which they value as a place where they are accepted and are helped to develop, and where their vulnerabilities are welcome and worked upon.



## **Chapter 3.**

### **Academic Press and Student Academic**

#### **Optimism: more factors of academic outcomes**

##### **3.1. Academic Press: incentive to learning as a school feature**

Curiosity and desire to learn are both features present in adolescents and seem to benefit from cognitively challenging school environments, characterized by academic press (Tschannen-Moran et al., 2013). In such environments, personal satisfaction, motivation to develop and excel and mutual support are enhanced, as each student feels challenged and supported to go further in knowledge and competence. An important facet of this construct of academic press is the mutual positive interplays among peers, who cooperate in learning and develop mutual appraisal. A similar dynamic as within the precedent constructs seems present: a need of the students constitutes the opportunity to positively relate, for academic press implies a specific motion of the teachers and of the school as a whole, who show positive attitudes towards expectations of learning and support academic engagement. Recent studies about curiosity and desire to learn show how important these attitudes are for self-regulated learning (Permatasari et al., 2022) and try to describe its factors and impact on learning in classroom (Singh et al. 2022). An apparently interesting study (Carruthers, 2023) about curiosity has been recently developed, analyzing the various elements of curiosity. These recent studies impact the discussion about what is learning and whether there is in the adolescent the need and the desire to learn, and what is the object of that desire, also because of research about curricula, knowledge versus competences-based learning, self-learning, technology-based learning and other items of reflection and matter of research. In spite of the obvious interest and importance of this problematic, in this thesis we adopt the premise that the adolescent is keen on learning, and we do not advance in the other hints of investigation, leaving them to future research.

This construct is well described by Tschannen-Moran et al., 2013, who synthesize research findings still state-of-the-art. The construct was first theorized by Bandura (1986), Eccles et al. (1989) and Hoy et al. (1991) describing the incentive to learning as a shared social norm of a school environment where teachers assume that students are keen to excel, engaging in offering challenging, supporting and interesting academic opportunities for students, who in turn correspond to this offer, committing themselves to learning, individually and as a group. Goddard et al. (2000) present the reciprocal dynamics developed by students and teachers that interact within a school with high academic press, such as timely feedback on

part of teachers that meets completion of schoolwork on the part of students, interesting and challenging classes, met with students' participation, supportive relationships met with students' academic effort. Bandura (1989) emphasizes the complexity of influences that contribute for student learning, proposing what he calls a triadic reciprocal causation, where personal — cognitive, volitive, and affective factors — interact with multi-level environmental factors and consubstantiate student motivation for learning and achievement. Lee and Smith (1999) link academic press and social support as conditions for learning. Murphy et al. (1982) underline the importance of school policy, combined with classroom practice, and student behavior for effectiveness in schools. Academic school climate is the construct most used in more recent scientific literature, but the findings are similar: academic incentive perceived by students impacts learning (Chong et al., 2010). Some authors (Phillips, 1999) contend the emphasis on communitarian factors as incentives for learning, showing that academic press is the main factor for academic effectiveness. In a more recent study, Daily et al. (2019) confirm the impact of academic support in learning achievement. Cornell et al. (2016) show how school discipline and student support by teachers who believe in students' achievement are linked. In a recent study in Indonesian schools, Jehadus et al. (2022) have identified tutoring and learning motivation — proximal components of academic press — as the key factors to mathematics' achievement.

### **3.2. Student Academic Optimism: a composite construct**

Tschannen-Moran et al. (2013) investigate the relationships between student-trust in teachers, student perception of academic press and student identification with school, finding such high correlations that they propose a latent construct of Student Academic Optimism, independent from social-economic status. The authors applied a single survey form based on the Student Trust in Teachers Scale (Adams & Forsyth, 2009), and on an adaptation of the original Identification with School Questionnaire (ISQ) developed by Voelkl (1996), measuring student achievement with data from the Virginia Standards of Learning (SOL) assessments in English and Mathematics. The survey included students of third to 12<sup>th</sup> grade classrooms, randomly chosen in the 49 schools of a mid-Atlantic district in the United States and a confirmatory factor analysis was used as measurement model. They confirmed the three hypothesis they had started with: i) that student trust in teachers, student academic press and student identification with school are positively correlated with each other; ii) that the three variables would come together to form a latent variable the authors call student academic optimism; and iii) that all three variables are also strongly correlated with student achievement, over and above the effects of the social and economic status and student demographic characteristics. Based on these results, the authors

encourage educators to cultivate student-teacher trust, celebrate academics and enhance student identification with school. The fact that these authors have precisely mobilized the three constructs that were from the start the most interesting themes of this thesis makes this study in particular the most relevant line of research for our attempt. Curiously, this is the only article found with this design and incorporating these three constructs, leading to the proposal of a new construct that the authors denominated student academic optimism.

In presence of a complex reality as schools are, studying the various components of that complexity may also result in the discovery of the inter-connections between them, that justify a certain unity of experience, consubstantiated in a new construct that describes what results from those inter-connections. Tschannen-Moran and her colleagues (2013), identifying the co-variation of the three constructs of student-teacher trust, student identification with school and academic press and proposing a latent composed construct, student academic optimism, showed the synergies of what may be verified as the three main features of students' satisfaction and motivation at school. While academic optimism — which takes into account the adults' perspectives — is well established in research as a desirable feature of schools (Hoy et al., 2006), student academic optimism still lacks further study, as a construct that derives from the students' perceptions and mobilizes the main features of life at school. Reaching this construct of student academic optimism with an empirical method of analysis allows the attempt at a conceptual framework, that helps understand what happens at the core of schools. From the expressed perspectives of the students, research extracts the elements and the outline of a figure that helps understanding what happens in fact, with a degree of objectiveness, on one side, brought by those concrete students at a specific moment in time, but also with a degree of abstraction that may help understand other students and other circumstances, therefore advancing scientific research.

From the theoretical point of view, the initial three constructs involved have clear connections. Firstly, the three describe the same reality: students' relationships with teachers within a school, happening at the same time with the same student and the same teachers. Secondly, although maybe less clearly in the case of student trust in teachers, the three constructs comprise a personal level and an institutional level: the protagonists are students, who trust teachers, identify with school and benefit from academic press; but these persons — students and teachers alike — always interact because and within an institution to which they choose (in some way) to belong, and that impacts them and their relationships. The three constructs count on proximal “negative” facets: the vulnerability that opens students to trust their teachers is the perception that they learn better with the help of teachers; the students' needs that origin their identification with school are the needs to value, be valued and belong to a community that encourages their capacity to

mature and learn; academic press focuses these needs, responding to the specific need of incentive to persevere in learning; even so, at the same time that it narrows those needs, it seems also true, and verified in research, that learning, if in a healthy academic environment, brings a contribution to the development of the whole personality of the student. A fourth factor adds to this theoretical cohesion: the “positive” facets of the three constructs are also proximal. Benevolence, openness, honesty, reliability and competence, present in the teacher that merits student’s trust, connect with the characteristics present in the people and the institution that attributes value to the student and that the student perceives as an encouragement to mature and learn, if it is delivered in an open and honest way, from reliable and competent people, with a certain benevolence; that encouragement with those facets connects, in turn, to the incentive that the student receives to his learning process through academic press. Finally, the distinctive aspects of the three constructs relate positively, contributing to healthy relationships: only if the student trusts his teachers will the adolescent identify with the school, but identifying with school enables trust in teachers to be more robust and less risky of error or excess; on the same token, trusting the teachers and having incentive for learning will enhance identification with school, while preventing it from becoming alienation; lastly, academic press is effective in a supporting environment, where relationships are based in mutual trust and where the value of belonging to a community prevents academic emphasis from becoming absolute and excessive. The interplays that the different constructs proportionate are thus forms of mutual clarity, strengthening and balance, contributing for a positive maturation of the student and a healthy and optimistic school environment.

These theoretical connections are present when we analyze the instruments that researchers attuned to measure student-teacher trust, student identification with school and academic press: while proximity between items of the different scales is evident, they do not coincide and, on the contrary, they complement each other, contributing to a thorough view of a healthy school environment.

Other than the 2013 research conducted by Tschannen-Moran et al., there seems to be scarce research about this construct: a study in the Sultanate of Oman emphasizes students’ trust in teachers as an important factor of student academic optimism (Al Saidi et al., 2021); another study links self-compassion behaviors to female students academic optimism (Shirmohammadi et al., 2021); a study about English as a Foreign Language teachers’ optimism stresses its impact on positive development of students (Lu, 2021); academic optimism appears related to other aspects and impacting student achievement, namely in a study that includes the effect of enabling structures (Anderson et al. 2018); but none of these studies analysis students’ perceptions of trust in teachers, identification with school and academic press, as designed by Tschannen-Moran and her colleagues (2013), and hence the

present study can add to research. Even if student academic optimism were not evident as a result of this study, the three constructs of student trust in teachers, student identification with school and students' feel of academic press are important enough by themselves to understand how students perceive that they are cared for and valued by their teachers and school and encouraged to learn. The educative projects of the two schools where this study collected data value these components and the conclusions attained will hopefully help understand what is happening with the students and what can be made to enhance learning, personal development, and general well-being at these schools in particular and contribute to research in general.

Furthermore, research indicates that the conjunction of high levels of student trust in teachers, identification with school and academic press will have impact on academic achievement (Ahn et al., 2021; Anderman, 1999, 2003; García et al., 2021; Korpershoek et al. 2020; Lee et al., 2019).

### **3.3. Research showing impacts on academic outcomes**

Most of the following studies result again of our research both in our comprehensive literature review (Brito et al., 2021a) and in our systematic literature review (Brito et al., 2021b), to which we added recent research. The studies bring insights to the understanding of the dynamics that influence academic outcomes, considering constructs somehow proximal or linked to academic press, student-teacher trust, and school identification with school.

Korpershoek et al. (2020) after using a meta-analysis of more than 80 studies on the effects of school belonging in academic outcomes, reframe and clarify the slight distinctions between various constructs related to school belonging, that is considered by these authors as the broader construct, including aspects present in others. In doing so, the authors include the construct of student identification with school, proposed by Finn (1989), followed by Voelkl (1996) and assumed in our study, as a more precise and narrower construct, consisting in the participation and identification of the students, who only feel belongingness if they identify with the school, valuing it as important to their lives, which, as detailed previously in this thesis, seems to us an important feature of the link between the student and the school. Nevertheless, Korpershoek et al. (2020) include student identification with the school as a construct in the proximal range of others such as school relatedness, school membership and school connectedness, relating them to what they call the meta construct of school engagement, which implies not only a perception on part of the student, but also an action on his part, consubstantiated in academic work. Their meta-analysis seems a very relevant one to show the positive effect that the students' bond to their

school has on academic outcomes. These authors also show the extent debate in research as to what these outcomes may be, and how they should be taken into account, namely as to the consideration of *performance* goals achievements, classically expressed in grades — internal or external to the school —, as opposed to *mastery* goals achievements, closer to self-determination theory's design of self-evaluation and learning. Even with these disparities in the conceptual framework as well as in the instruments used by the primary studies considered in this meta-analysis, the conclusion seems relevant that school belonging has a positive impact in academic achievement, throughout grade levels, for the authors did not find any relevant gradience in the weight of school belonging impact on students in middle and high school. A limitation found by the authors is the scarcity of studies in Europe, that may explain what seems a less significant impact of school belonging in academic achievement in European students than that present in studies conducted in both U.S.A., Canada, and Asia about their peers. The present study is a small contribution to more European research.

Proximal to this line of research are studies that try to attain academic achievement levels: Ahn et al. (2021) used a multi-level structural equation to test the model of Self-Determination Theory and confirmed that student autonomous motivation and academic achievement is impacted positively by teacher autonomous motivation and indirectly by teacher practices that respond to student needs of both competence and autonomy.

Strong sense of school belonging is found by García-Crespo et al. (2021) as the second big factor (after confidence in reading) for student related variables responsible for academic resilience in a study involving more than 100.000 fourth grade European students. Academic resilience is the students' capacity for high academic performance in spite of difficult socio-economic circumstances, obviously a very relevant construct. Strong sense of school belonging is found by García-Crespo et al. (2021) as the second big factor (after confidence in reading) for student related variables responsible for academic resilience in a study involving more than 100.000 fourth grade European students. Academic resilience is the students' capacity for high academic performance in spite of difficult socio-economic circumstances, obviously a very relevant construct.

In an even broader track of investigation, trying to identify the factors of a strong school culture that endures in time, bringing good outcomes for students and teachers alike, is the study conducted by Lee et al. (2019) that underlines the importance of academic press, student support, trust and respect, optimism, shared responsibility, dialogue and organizational learning as features that ensure a healthy school environment, thus, good academic outcomes.

Anderman (2003) had already established the reciprocal importance of sense of school belonging and academic performance when studying the evolution of students' perception of belongingness through middle school, among other factors.

Lim and Lee (2007) investigated the effects of students' trust in teachers on school adjustment, academic motivation, and academic performance. The study included 318 7<sup>th</sup> graders in Seoul Middle Schools. The authors used the short version of the Students' Trust in Teachers Scale (Lee & Han, 2004) that includes two subscales: cognitive trust and affective trust, combined to reach a total trust relationship score; the School Adjustment Scale (Yoo, 1982), to assess students' perception of school climate and personal adjustment; the Academic Motivation Scale (Yoon, 2003), to verify students' perceived academic motivation; and the end-of-year cumulative grade point average, in Korean, English and mathematics, as the index of academic performance. The authors concluded that students' sense of trust positively influences their school adjustment, academic motivation and, thus, performance.

Hughes (2011) conducted the first longitudinal study about elementary students' perceptions of teachers' support, and their effect on academic outcomes. The author distinguished students' perceptions from teachers' perceptions and used a sample of 784 academically at-risk third graders, that she tested with a Teacher-Student Relationships Questionnaire, looking at school outcomes in the following year. The study suggested that research should take into account both the child's and the teacher's perspectives and that a positive and warm relationship on part of the adult is capable of mitigating conflict and significantly influence the child's sense of belonging and academic engagement, fostering outcomes. Even at such early ages the possibility of assessing the children's perception of teachers' support seems very significant for research and practice. The measurement of the impact that those perceptions have in school outcomes seems also a rather important finding, that confirms the possibility of enhancing learning through teachers' attitudes of care, encouragement and aid. The proximity between teachers' support and the teachers' side of student-teacher trust seems apparent, especially with the facets of benevolence, reliability and competence.

Adams (2014) conducted a study to verify if collective student trust is a positive factor for urban elementary students and confirmed that a culture of collective student trust enhanced identification with school, internal control over learning tasks, and math and reading achievement. The author traced the empirical and conceptual frame of the construct of collective trust embedded in the individual psychologic needs that emerge as a social factor, which constitutes not the sum of the individual beliefs, but an intangible common resource that is offered to newcomers as a group norm and common asset. The study was conducted

in an urban school district in a southwestern state of U.S.A. 1646 surveys were analyzed. The instruments included an adaptation of Voelkl's (1997) Identification with School Questionnaire; the Self-Efficacy for Self-Regulated Learning Scale (Bandura, 2006; Zimmerman, 2008); the Student Trust in Teachers Scale (Adams et al., 2009); and scale scores from the state-mandated math and reading achievement tests. The author concludes that the relational environment built by collective student trust enhances students' academic excellence. This study seems to contribute to answer some of the questions in this thesis, as it links what happens at a personal level of interactions with the collective level and stresses the qualitative difference of the relationships attained, where the personal and the communal have a diverse impact when it comes to transmission. In a school where trust has become a collective asset, newcomers are involved in it, independently of personal interactions; yet these personal relationships are the basis of the collective trust culture.

Reynolds et al. (2017) conducted a study with 340 grade 7<sup>th</sup> and 9<sup>th</sup> Australian students, in which: i) school climate and school identification were identified as positively correlated with numeracy and writing, and ii) school identification was revealed as mediator between school climate and achievement. The authors recommended attention to the importance of the group and of social identification for learning. Although not considering a variable such as academic press, these authors contribute to the affirmation of the impact and relevancy of identification on academic achievement. Also interesting is the discovery of a mediating effect of school identification between a collective sense of satisfaction, such as assessed by school climate, and a cognitive result, such as academic achievement.

Johnson (2009) identified, through mixed methods study, several factors that foster student belonging to school and enhance learning and personal development. The author compared students' perceptions in two north-western High Schools in U.S.A., one that presents a traditional structure and one that is described as non-traditional. Belongingness is measured both through a Psychological Sense of School Membership Scale (PSSM) and through a one-time questionnaire about teacher support perception during a week of Experience Sampling Method (ESM) (Csikszentmihalyi & Schiefele, 1994), to a self-selected group of students in both schools. In conclusion, the author points to teacher support and adolescents' sense of school membership as important factors of learning and motivation. This study gives a step further in describing the impact of teachers' support and sense of school membership — proximal to student identification with school — on learning and academic motivation. Being the latter rather elusive and difficult to clearly measure, they are, however, essential features of a school. An attempt at clarifying their causes and enhancing factors seems an important step for research and informed practice.

The following studies are very recent and of some of them we could only read the abstracts. Still their objects are proximal to the constructs mobilized in this thesis and seem significant to the questions put by this work, contributing to a better understanding of the varied shades of students' relationships with teachers and their schools. Being so recent, these analyses also confirm that the constructs at play endure through the most recent circumstances and events, or, perhaps better said, that the phenomena relating students to teachers and schools, though clearly impacted by cultural and social factors, last as relevant to research.

Arslan (2022) developed a study with mediation analysis and visual modelling among students aged 10-15 in Turkey urban schools. Conclusions pointed out how school belonging favors academic achievement and well-being, diminishing exposure to bullying and negative issues in adolescents. This is a study that adds to research underlying both the enhancing impacts of students' belonging to school on their learning, and the preventive effects that school belonging has considering aggressive and unhealthy tendencies present in adolescents' development and dynamics. Interesting is also the possibility of analyzing the different paths that the attempt to fulfil a need can take, depending on the factors that intersect it: when intersected with the benevolence, honesty, openness, reliability, and competence of teachers, and with the embrace and valuing of a school community, those needs may result in happiness and academic achievement.

Kalkan and Dagli (2021) conducted a study with secondary students of the Turkish province of Hatay, that shows how a positive school climate, namely where students feel they belong to school, can prevent students' burnout. This study seems to add yet another shade to our analysis, for students' burnout seems to include a personal inability to handle academic and social pressure that can be prevented and diminished by an adequate insertion in a healthy community. Research, as thoroughly shown in the present thesis, has identified as factors of positive school climate the perception of belonging, emphasized in this particular study, as well as positive relationships between students and teachers, namely student-teacher trust.

Petrucci et al. (2022) developed a very detailed multi-level analysis using data from c. 1700 Swiss students in six and seventh grades. The authors explored several factors and, namely, tested the size of the school as a factor of school belonging, in a study that brings insights as to the really relevant elements of the construct and, thus, of its beneficial effects in students' life. The classroom climate, mainly determined by the teachers' capacity to be supportive, seems the most relevant element, while the size of the school appears to be an illusory factor. These conclusions seem to go in the direction of other studies cited in this thesis that focus on classroom management, servant leadership of the teacher, teacher support and

encouragement, student-teacher trust, as the most impacting factors in the students' perception of well-being and in students' academic achievement.

Lee and Huang (2021) with a study with high school students in Hong-Kong establish through a multi-level analysis the links between students' perception of school belonging and their perception of school kindness, namely at the students' level, and the relationships between school kindness and the fostering of kindness as a character strength. This seems another clue to a broad comprehension of all factors at play, leading a fruitful path of research, linked to servant leadership, student-teacher trust, and character strengths.

Dixson and Scalcucci (2021) looked at the importance of hope associated with school belonging as a factor of executive functioning in high school students. The study constitutes a relevant contribution for the insights about the importance of school belonging to individual decision-making capacity. In another study, Dixson (2020) goes further and discovers hope as the strongest factor for academic achievement, even over school belonging. This study shows yet another clue to our attempt at a comprehensive analysis, a hint that we will not be able to follow in this study, but that seems nevertheless crucial to have note of.

Arslan et al. (2022) studied strength-based parenting during confinement, linked to academic motivation and school belonging. The positive correlations found seem to confirm both the importance of strength-based parenting but also of sense of school belonging even during confinement, which gives an important insight on the mechanisms that enhance students' academic motivation and involve both parents and school. This constitutes another shade of the possibilities of analysis of our phenomena for research widely confirms the relationship between parents' impact on their children and those children's perceptions of their relationships with both teachers and school.

St-Amand et al. (2022), in a Moroccan high school, investigated classroom management practices' effect in school belonging and school engagement, emphasizing the importance of further research to enlighten which rules can enhance positive attitudes and foster school belonging and engagement of students.

Högberg and Lindgren (2022), analyzing the Programme for International Students Assessment (PISA) results in Sweden, come to the conclusion that academic performance oriented and inclusive policies may be negatively related to enhancing school belonging in adolescents, thus causing a serious well-being crisis in students. This study shows the complex relevance of academic goals: while not having them, not perceiving them and not cultivating them may shrink the purpose of a school, over-estimating them, or over-orienting for their performance can also have, according to research, very negative consequences. This is why the introduction of academic press as another relevant construct

into play, as developed in this thesis, seems a good path to grasp, adequately describe and put at disposal of educators to enhance a balanced relationship with learning achievement, thus adding to the elements of a happy school environment.

Cai et al. (2022) conduct a multi-level structural equation modeling, using data of PISA 2018, with more than 500 000 15-year-old students from 75 countries. The authors affirm that students' sense of belonging was found to strongly mediate the total effect of teacher empathy on students' reading performance, conclusion which seems to concur for our hypothesis that student-teacher relationships, namely trust, are related to school identification, as to its proximal construct of school belonging.

## **Conclusion**

Research on academic press and on student academic optimism is still scarce, taking into account the importance of both constructs for students, teachers and schools all over the world.

The risk of vulnerability, explicitly taken when it comes to trust, and the perception of a need, present within belonging and valuing, are, in the perspective of this thesis, maybe the two most important spurs to students' overture and motivation to relate, to their teachers in a personal level, and to the whole school community, that includes teachers as part of the school community, even the ones that are not classroom teachers of that student in particular. Vulnerability in learning, as the recognition by the student that collaboration with and guidance from a teacher is needed, and desire to learn, included in the valuing component of student identification with the school, seem to come together as gaps that provide the opportunity to go beyond the self, expanding it and enhancing it with positive relationships, giving way to growth. That congruence and flow seem the heart of an opportunity for research to discover and for practice to develop. Academic press, the construct that Tschannen-Moran et al. (2013), put in relation with student-teacher trust and student identification with school, forms, in the perspective of this thesis and following those authors, a complete model with the advantage of suggesting a fourth construct that unites the other three — Student Academic Optimism — that, in turn can be assessed by its impact on academic outcomes. Considering the school context, assessing these dynamics' impact on learning, through measurement of academic outcomes, appears as a clear necessity, even if with difficulties associated both with methodological research constraints and with the complexity of the existential reality that is to be evaluated.



## **Part II. Empirical Study**



## **Chapter 4.**

### **Trusting, identifying and learning: let's play?**

#### **An empirical approach to student academic optimism throughout adolescence and its impact on academic achievement**

Students' perceptions about their relationships with their teachers and their school, namely the mechanisms and consequences of Student Trust in Teachers (STT), Student Identification with School (SIS) and students' sense of Academic Press (AP), have been object of research because of their influence on learning, personal development and a positive school environment. Tschannen-Moran et al. (2013) have verified the existence of a correlation between the referred three variables, such that allows the conceptualization of a latent composite construct, that the authors named Student Academic Optimism, which in turn impacts academic achievement. Students' perspectives about their trust in teachers, their identification with school and the academic press they feel need further empirical investigation, for research about them is scarce, probably also because they are as difficult to grab, as fundamental to understand the whole phenomenon of schools' purpose. The confirmation of those correlations allows the proposition of a theoretical model that may help understanding and describing such essential relationships and hence contribute to research.

Within a set of two private Portuguese basic schools following the same project — Colégio de S. Tomás, in Lisbon, and Colégio do Ramalhão, in Sintra — this chapter reports 4<sup>th</sup> through 12<sup>th</sup> graders' convictions about trusting their teachers, identifying with school, and sensing academic press. Then it verifies the levels of correlations among these variables, so as to confirm the existence of a composite construct of Student Academic Optimism (SAO), according to research (Tschannen-Moran et al., 2013). Furthermore, this study analyses the impact of the levels of students' trust in their teachers, of their identification with school and of their perception of academic press, forming a composite new latent variable, SAO, on the students' academic achievement, quantified by the students' scores in Portuguese and Mathematics.

Students' sex and age and parents' educational qualifications are also elements that complete a descriptive analysis that could enable future research to better understand what happens in these schools.

In order to grasp the perceptions of the Portuguese students in this sample, our study adapts and translates into Portuguese the Student Trust Scale (Forsyth & Adams, 2004), the Identification with School Questionnaire (Voelkl, 1996) and the Academic Press Questionnaire (Tschannen-Moran et al., 2013), thus adding to research.

Although the study's findings are restricted to the relation between the constructs and the students' grades in Portuguese and Mathematics on the year before the data were obtained, we consider that the academic achievement and performance, on one hand, and the facets of the three constructs, on the other, imply a relation with students' well-being as well. We consequently assume, with support on research (e.g., Clement, 2010; Simonsen & Rundmo, 2020), that high levels of Trust, School Identification, and Academic Press impact positively on school outcomes, namely academic achievement and performance, and that, as the denomination Student Academic Optimism (Tschannen-Moran et al., 2013) already indicates, those factors also enhance students' satisfaction and well-being.

Research generally uses *achievement* and *performance* equally. Nevertheless, in the effort of being as clear as possible, as to which variable to consider seizing the impacts of all those constructs, we came to this formulation: academic *performance* supposes only grades' scores; academic *achievement*, includes a broader variety of evaluation instruments, such as prizes, rankings, projects, but also grades; academic outcomes, means anything that results from school learning. Researchers use all three, and maybe more, upon convenience.

To the effects of this thesis, we chose to use academic achievement based on final grades in Portuguese and Mathematics, because, other than allowing working with numeric values, they are two core disciplines and thus core opportunities of learning, and thorough expression of the student's engagement in academic work, demanding disparity of competences and knowledge enough to evaluate a fairly broad span of students' learning. This stance does not mean taking part in academic-performance-oriented practice or politics, which would involve a different discussion and line of research. Nor does it mean considering Portuguese and Mathematics more important than other courses. It is only simplification to facilitate measurements.

Throughout the various research approaches to schools, relationships seem to capture a large portion of the plot. Being a universe where intergenerational interplay constitutes the core, studying how youngsters and adults relate seems vital. When research looks at that core, its complexity and dynamics show with exuberance. The richness of aspects has been tentatively analyzed in many latent constructs, trying to describe the various modalities in which relationships evolve within a school and their multiple causes, connections, and outcomes. Although many of these constructs are proximal and sometimes difficult to distinguish, they all tend to procure aspects that add to scientific knowledge. An important

step towards a comprehensive view of the multiple traits of this reality seems to be a double effort to distinguish with precision the subtle differences between constructs and to discover with equal rigor the connections between them. This double effort would refine the consciousness of reality and thus amplify research and eventually help schools and educators evolve positively. This chapter attempts to contribute to this double effort.

For the present study we mobilized, firstly, Trust and Identification, two of the constructs that describe student-teacher relationships and have routes in the theory of organizations, assuming that life in schools is and gives continuity to society in general. Consistent research has established their components, verified in adult interaction in many contexts, as in the specific interactions within a basic school, namely between students and teachers (Brito et al., 2021b). Both constructs comprehend facets that express a “fragility” in the protagonists, which, precisely while constituting a weakness, contributes to the congruency of the constructs, because the possibility of fulfillment of that “crack” becomes the criterion of the relationship they theorize and the “point of attraction” of the other facets. The congruency of these constructs (that we test empirically in this chapter) may be the central strength of schools. Another fundamental vector of research tends to explain school existence and endurance: Learning. There is abundant scientific literature about the process, the agents, the contexts, and modalities that favor it and that endanger it. For the purpose of this study, we chose to look at the phenomenon of learning using the construct of Academic Press. Therefore, we advance this triadic nucleus structure as the core of school life, following the research of Tschannen-Moran et al. (2013): from a personal point of view, we propose Trust in Teachers as the most satisfying relationship for the student at school; from a social and institutional perspective, we advance Identification with the School as the relationship of students with the school community that brings more fulfillment to students; from a learning angle, we suggest Academic Press as the right environmental attitude to encourage learning. Confirming in this study, as Tschannen-Moran and her colleagues did (2013) the interconnections between these constructs, we are in position to restate Student Academic Optimism as a new construct that describes a fundamental feature of a healthy school community, enhancing learning, as shown in its impact on academic performance in Portuguese and Mathematics.

## **4.1. Objectives**

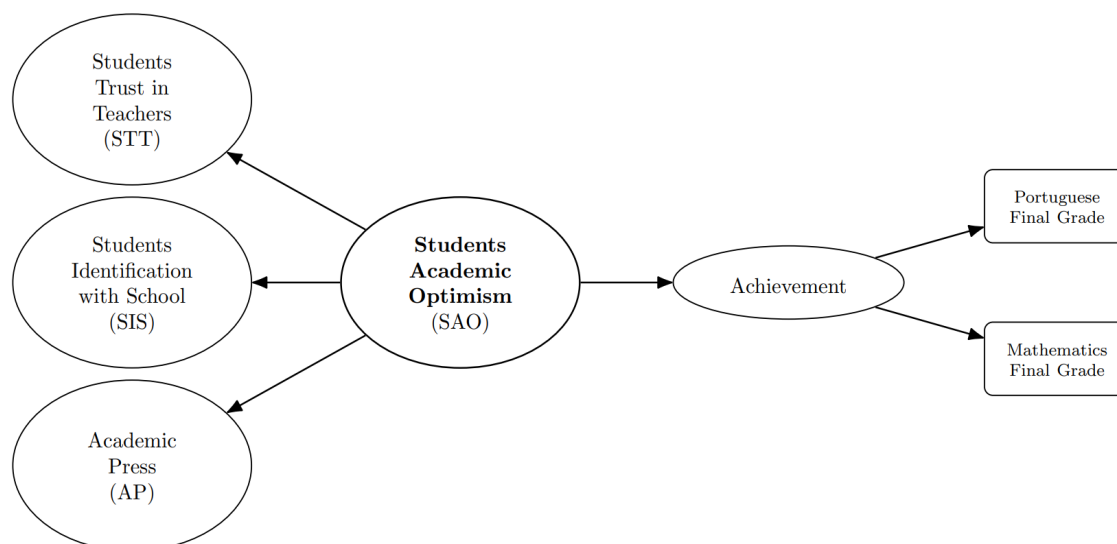
The general objective of this empirical study is to understand the predictive power of students' trust in teachers, students' identification with school and students' perception of academic press on students' academic achievement, measured by the grades in Portuguese and Mathematics. But other than considering the eventual effects of each of those three

variables *per se*, this study has the goal of verifying the possibility of aggregating those three variables in a composite construct and measuring its impact on academic achievement. This seems a more complete description of what happens to the individual students in a school, for each student experiences trust in teachers, identification with school and academic press simultaneously and interconnectedly. Following research (Tschannen-Moran et al., 2013), we name this composite construct Student Academic Optimism (SAO).

Conceptually, and considering research as well as direct observation, our expectation is that all variables are interconnected and impact each other, for students are very sensitive to teachers, to school climate and culture and to academic press. Their feelings, levels of motivation and effort to learn are very dependent on their Trust in Teachers, their Identification with School and their adherence to Academic Press. We assume that while these variables connect significantly in single students, they also form a latent construct — Student Academic Optimism —, composed of positive perceptions, including vulnerabilities. This Student Academic Optimism leads to effective learning that can be measured by grades, as shown in Figure 1.

**Figure 1**

Conceptual Model of Student Academic Optimism (SAO) and its Impact on Achievement.



Thus, specifically, this study has the following goals: i) to characterize the sample in relation to the variables under study; ii) to analyze the psychometric properties of the instruments in the sample (preliminary study); iii) to analyze the impact of the variables under study (in their composite construct - Academic Optimism) on Achievement (measured by grades in Portuguese and Mathematics).

Additionally, this study tests instruments to measure STT, SIS and AP in Portuguese, translating already tested surveys: Student Trust Scale (Forsyth & Adams, 2004), the Identification with School Questionnaire (Voelkl, 1996) and the Academic Press Questionnaire (Tschannen-Moran et al., 2013).

## **4.2. Method**

We started by submitting the three scales we translated to exploratory factor analyses to assess the construct validity of each of those scales.

We first calculated the intra-class correlations (ICC), to justify aggregation of the variables, both the ICC-1 (variance attributed to group membership) and the ICC-2 (within group agreement among students who were part of the sample). A random effects ANOVA was used in the two cases to measure the reliability of the group means (Bliese, 2000).

We then proceeded to test the existence of a relationship between the three constructs of STT, SIS and AP, through a descriptive and bivariate correlational analysis, that showed the existence of Student Academic Optimism as a latent construct resulting from those correlations.

After that, we performed a structural equation multiple indicator multiple cause (MIMIC) model, using IBM SPSS AMOS version 28, to assess the effects of SAO on achievement, constituted by the students' grades in Portuguese and Mathematics.

Finally, we applied the  $\chi^2$  test of model fit, the root-mean-square-error of approximation (RMSEA), the Tucker-Lewis index (TLI), and the goodness-of-fit index (GFI) to verify the fitness of the model we propose, and fundament our hypothesis that SAO would impact positively on Achievement.

### **4.2.1. Participants**

Participants were 995 students, from 4<sup>th</sup> to 12<sup>th</sup> grade of two independent K-12 schools. One of these schools is located in Lisbon and another in Sintra, near Lisbon. They follow the same educative project, especially in what concerns basic principles, that emphasizes critical thinking, friendly student-teacher relationships and academic engagement. The population of students coincides largely with the average urban population of Lisbon and the sub-urban population of Sintra, respectively, and includes diverse social economic status, with circa 15% of students attending the schools with financial help. Participants were randomly selected, considering the students present at school on the occasion chosen for collecting the answers.

Participants were 520 boys and 475 girls, distributed among grades 4<sup>th</sup> through 12<sup>th</sup> (Table 1). Percentages of the participants in each grade compared to the total of participants range from 6.7% in 12<sup>th</sup> grade to 15.7% in 6<sup>th</sup> grade, but 5 of the 9 grades considered represent 10.1% to 13.1% of the sample. These values allow us to assume that we had a representative sample of the different ages and grades of a basic school. The rounded average age of the participants was 13, with a minimum of 9 and a maximum of 19 (Table 2).

**Table 1**

*Grades Frequencies and Percentages*

Grade	N	%	% <sub>CUM</sub>
4	130	13.1 %	13.1 %
5	140	14.1 %	27.1 %
6	156	15.7 %	42.8 %
7	102	10.3 %	53.1 %
8	72	7.2 %	60.3 %
9	119	12.0 %	72.3 %
10	109	11.0 %	83.2 %
11	100	10.1 %	93.3 %
12	67	6.7 %	100.0 %

As to the educational qualifications of the parents, 44% of the students declared not to know those of their mothers, and 45.1 % of their fathers. The remaining said that 4.0% of the mothers and 4.3 % of the fathers have basic education; 25.4% of the mothers and 19.5 % of the fathers have a degree (*licenciatura*), 18.6% of the mothers and 18.8 % of the fathers a Master, and 7.9 % of the mothers and 12.3% of the fathers a PhD. Even considering the limitation of the sample, these values seem to correspond to a group with higher educational qualifications than the average of Portuguese families. Data of educational qualifications of Portuguese population in 2023 (PorData, 2023) show 74.4% of the population with basic education and 19.8 % with higher education. Further research needs to analyze data so as to inquire about possible comparisons that can lead to conclusions about the representativeness of our sample, and about the effect of the different variables in the students' academic achievement.

In a scale of 1/20, the students' answers showed an average grade of 14.95 in Mathematics and of 14.7 in Portuguese (Table 2), which also seems higher compared to Portuguese national standards. According to our limited view of the statistics of the Portuguese government (Direcção-Geral da Educação, 2023), it appears that the more proximal

national mean was, in 2023, 8.6 in Mathematics and 12.4 in Portuguese. Further studies must be done to confirm this data and look at reasonable comparisons.

**Table 2**

*Age and Scores in Portuguese and Mathematics*

Characteristics	M	SD	Min	Max
Age	12.95	2.624	9.00	19.0
ScoreP	14.87	2.517	7.00	20.0
ScoreM	14.95	3.171	5.00	20.0

### **4.2.2. Instruments**

We organized the survey we used in this study in various sections. The introductory section firstly questioned the students as to their age, grade and sex, so as to acquire some demographic characteristics of the sample; then asked the students about their grades in Portuguese and Mathematics in the end of the previous year, to allow our study to discuss the impact of the STT, SIS and AP on the students' academic achievement; finally, the students were asked about their parents' educational qualifications, so as to enable us in future research to consider its possible impact in the students' outcomes. This sociodemographic information adds descriptive elements to further analysis, that has not been made in the present study, and provides context to the present study. The survey proceeded with three sections, one for each questionnaire, the first constituted of 22 items inquiring about STT, the second of 16 items about SIS and the third of 8 items about AP.

We applied the survey first in a paper version to a focus group with a sample of students of all the different grades, to look for needed adjustments (Portuguese translation pretest/Pilot study). Having noted that the students answered all the items and had easily understood all of them, we proceeded to the definite form. We composed it in a Google form survey, that the students could easily answer to, and that would easily be transferred to a data basis to be analyzed.

### *The Student Trust in Teachers Scale (Forsyth & Adams, 2004)*

The original Student Trust Scale (Forsyth & Adams, 2004) allows for a detailed sense of the five positive facets of trust adopted by the authors and followed by research. This scale includes 20 items, such as “My teachers help me”, “My teachers tell me the truth”, “My teachers do an excellent job”. Students mark their answers as “Never”, “Sometimes”, “Almost Always” or “Always”. The applied questionnaire is available on Table 12 (in Appendixes).

The various items invite students to answer expressing their perceptions of teachers’ attitudes and behaviors related to the facets of trust: teachers’ benevolence, competence, reliability, openness and honesty are thus evaluated by the students through items about concrete attitudes apparent to students’ perceptions in the gradual frequency of a Lickert-type Scale. This scale is then quantified in numbers (inverted in the negative items) that facilitate quantitative analysis: Never = 1; Sometimes = 2; Almost Always = 3; Always = 4. This approach to students is presented by research as being adequate to obtain fairly reliable data, even if with obvious limitations caused by an inevitable simplification of complex relationships, perceptions, sentiments and judgements, and possibly biased by the students’ natural volubility when answering the survey. The percentage of items evaluating the different facets of the construct is shown in Table 14 (in Appendixes): Benevolence and Competence are preponderant, but all five facets are present with sufficient evidence.

### *The Student Identification with School Questionnaire (Voelkl, 1996)*

The Student Identification with School Questionnaire has been developed to capture both the students’ perceptions of belonging in their school, and of valuing their school and the goals it pursues (Voelkl, 1996). We chose to use the original form (Voelkl, 1996), and not the one used by Tschannen-Moran et al. (2013), because we are testing the instrument itself, translated to Portuguese and applied to Portuguese students. Therefore, we thought it would be more interesting to apply the larger version, with more items, and then test their congruency in this sample. According to the original version (Voelkl, 1996), we applied a 16-item questionnaire in a Lickert-type scale (never, sometimes, almost always, always). Nine of those items were designed to grasp the students’ feeling of belongingness in the school, and seven others to capture the students’ perceptions of valuing school and school-related goals.

Items include “In my school there are teachers and other adults with whom I may talk if I need.”; “I feel proud of being part of my school.”; “Most of what I learn in school is going to be useful in my work.” The Portuguese version is accessible in Table 12.

### *The Academic Press Questionnaire (Tschannen-Moran et al., 2012)*

The final section of our survey included a translated version of the Academic Press Questionnaire (Tschannen-Moran et al., 2013), presented in Table 17 in Appendixes. This section had 8 items designed to allow students to express their perceptions of the academic incentive they receive at school. The items are for example, “This school wants students to excel”, “My teachers believe I can learn”. Students answered in a Likert-type scale as in the previous sections. Once again, even with the same limitations as the other instruments, this questionnaire gives access to what the students think about the academic climate of their school, how academically oriented it is and whether they feel encouraged to learning, as described in the construct of Academic Press.

#### **4.2.3. Procedure**

The authors of the three original instruments were contacted by email and permission was asked to use their instruments in this study. These three instruments have been thoroughly used in research and have proven to be reliable. After receiving permission from the authors, and in order to fulfill the cross-cultural adaptation guidelines, we translated the original questionnaires into Portuguese (Forward translation). Drafts made by three translators that master both languages and with experience in educational field were compared and synthesized.

An email was sent to all parents with a copy to representatives of the Board of Administration of APECEF, informing them of our intention to do this study and explaining its content and context. It was made clear that the completion of the survey had research goals and would be completely anonymous and voluntary. Permission to apply it to students was asked and given. Students were asked to answer but were not obliged to do it, their anonymity was preserved, and they were informed that there was no consequence whatsoever from the fact of either answering or not answering the questionnaire.

The Google Forms survey was sent to the WhatsApp groups of students from 7<sup>th</sup> grade on, and to the schools' mail, in order to be available for completion on the school computers for the 4<sup>th</sup> to 6<sup>th</sup> graders and for all students who did not use WhatsApp. 4<sup>th</sup>, 5<sup>th</sup>, and 6<sup>th</sup> graders answered the survey in their programming classes, in presence of their programming teacher and using school computers. 7<sup>th</sup>, 8<sup>th</sup>, and 9<sup>th</sup> graders answered the survey using their mobile phones during assembly, in the presence of teachers; students with no mobile phones went to computer rooms to do it. 10<sup>th</sup>, 11<sup>th</sup>, and 12<sup>th</sup> graders answered the survey using their mobile phones in between classes. Students were told to answer freely according

to their perceptions and assured that the answers were voluntary and anonymous. Students were eager to answer and expressed feelings of appraisal for “being asked these questions”.

### 4.3. Results

#### 4.3.1. Descriptive Statistics

In order to fulfill the first objective of the empirical study, we proceeded to a descriptive statistic of the results in the main variables under study, verifying their total values as a whole, and in the case of STT and of SIS, discriminating their total sub-values, according to the different facets (Table 3).

**Table 3**

*Descriptive Statistics in STT, SIS and AP (n = 995)*

	M	SD	Min	Max	Skewness	Kurtosis
AP_Total	3.34	0.427	1.00	4.00	-1.183*	2.6450**
STT_Total Mean	3.15	0.510	1.00	4.00	-0.723*	0.2648**
STT_SubTotalHonest_Mean	2.99	0.637	1.00	4.00	-0.373*	-0.4591**
STT_SubTotalOpen_Mean	3.25	0.676	1.00	4.00	-0.664*	-0.2892**
STT_SubTotalReliab_Mean	2.93	0.915	1.00	4.00	-0.364*	-0.8506**
STT_SubTotalCompet_Mean	3.34	0.550	1.00	4.00	-0.944*	0.6289**
STT_SubTotalBenev_Mean	2.88	0.560	1.00	4.00	-0.130*	-0.3245**
SIS_SubTotalBelong_Mean	3.03	0.553	1.11	4.00	-0.640*	0.1320**
SIS_SubTotalValuing_Mean	3.15	0.504	1.14	4.00	-0.594*	0.1991**
SIS_Total_Mean	3.09	0.476	1.56	4.00	-0.664*	0.0332**

Note. \* Skewness SE = 0.0775; \*\* Kurtosis SE = 0.155

The Mean and the Standard Deviation (SD) of each items' answers are presented in Table 4, Table 5 and Table 6.

**Table 4**

*Results of Student Trust in Teachers (STT) Questionnaire*

	STT item	Mean (1-4)	SD
STT_01	Os meus professores ajudam-me.	3.20	.757
STT_02	É fácil falar com os meus professores.	2.92	.845
STT_03	Os meus professores cuidam bem de mim.	3.35	.801
STT_04	Os meus professores elogiam o meu trabalho.	2.51	.781
STT_05	Os meus professores ligam ao que eu digo.	2.90	.822
STT_06	Os meus professores dizem-me a verdade.	3.54	.718
STT_07	Os meus professores fazem um trabalho excelente.	3.24	.754
STT_08	Os meus professores ensinam muito bem.	3.22	.710
STT_09	Acho que os professores NÃO gostam de alunos como eu.	3.29	.880
STT_10	Eu acredito no que os professores me dizem.	3.40	.738
STT_11	Eu aprendo muito com os meus professores.	3.38	.716
STT_12	Eu posso contar com a ajuda dos meus professores.	3.41	.747
STT_13	Os meus professores têm um bom sentido de humor.	2.66	.805
STT_14	Os meus professores deixam-me fazer perguntas.	3.17	.779
STT_15	Sinto que os meus professores NÃO querem que eu participe.	3.51	.790
STT_16	Os meus professores fazem-me sentir bem.	2.88	.860
STT_17	Os meus professores ajudam-me a dar o meu melhor.	3.38	.790
STT_18	Os meus professores são simpáticos comigo.	3.22	.732
STT_19	Eu gosto dos meus professores.	3.18	.790
STT_20	Os meus professores encorajam-me a ser simpático.	3.18	.968

**Table 5**

*Results of Student Identification with School (SIS) Questionnaire*

	SIS item	Mean (1-4)	SD
SIS_01	Tenho orgulho em pertencer à minha escola.	3.39	.858
SIS_02	Sou tratado com igual respeito em relação aos meus colegas.	3.16	.917
SIS_03	Acho que vou conseguir um bom emprego mesmo com notas más.	2.80	1.109
SIS_04	Só me ligam na escola quando me porto mal.	3.39	.928
SIS_05	Gosto de participar em atividades extra na escola.	2.67	1.107
SIS_06	A escola é uma das coisas mais importantes na minha vida.	3.05	.946
SIS_07	Muitas das coisas que aprendemos nas aulas são inúteis.	3.10	.914
SIS_08	A maior parte dos meus professores não se interessa por mim.	3.43	.841
SIS_09	A maior parte do tempo eu preferia estar noutra sítio e não na escola.	2.73	.918
SIS_10	Há professores e outros adultos na escola com quem eu posso falar se precisar.	3.32	.895
SIS_11	A maior parte do que aprendo na escola vai ser útil no meu trabalho.	2.93	.980
SIS_12	A escola é um dos sítios em que mais gosto de estar.	2.54	.927
SIS_13	As pessoas na escola estão interessadas no que eu tenho a dizer.	2.67	.847
SIS_14	A escola é muitas vezes uma perda de tempo.	3.36	.827
SIS_15	Desistir da escola seria um grande erro para mim	3.68	.747
SIS_16	A escola é mais importante do que a maioria das pessoas acha.	3.14	.949

**Table 6**

*Results of Academic Press (AP) Questionnaire*

	AP item	Mean (1-4)	SD
AP_01	Os alunos respeitam os que têm boas notas.	2.98	.920
AP_02	Os alunos esforçam-se bastante por melhorar.	2.99	.807
AP_03	Esta escola quer que se aprenda.	3.75	.572
AP_04	Os alunos trabalham muito para ter boas notas.	3.05	.788
AP_05	Os conteúdos das disciplinas são exigentes.	3.19	.834
AP_06	Os meus professores acreditam que eu posso aprender.	3.67	.652
AP_07	As boas notas são apreciadas.	3.63	.676
AP_08	Posso ter ajuda extra na escola se precisar.	3.43	.834

Levels of congruency vary in an inverse proportion to levels of Standard Deviation, being, as shown, the Standard Deviation less than 1, for all items but two, we concluded that there is congruency between the students as to the perceptions expressed in their answers. In the SIS questionnaires, items 3 and 5 are the two that show less congruency, for their standard deviation values are above 1.

We also concluded that these students felt a significant level of trust in their teachers, as well as a significant level of identification with their school, and a significant perception of academic press.

#### ***4.3.2. Psychometric properties: validity and reliability (preliminary study)***

##### *Student Trust in Teachers (STT) Questionnaire*

An exploratory factor analysis (EFA) was used to explore the underlying structure of the items of the STT scale. The Kaiser-Meyer-Olkin (KMO) test is equal to .96 and the Barlett's Test has a p-value under .05 ( $\chi^2 = 8256$ , 190;  $p < .001$ ), suggesting the adequacy of the factor analysis. The EFA (varimax rotation) suggested a five-factor model with the five positive facets of trust that the students perceive in their teachers (Competence, Honesty, Benevolence, Openness and Reliability) explaining 58% of variance contained in the 22 items of the scale use (Table 7).

The internal consistency of the overall scale was measured using Cronbach's alpha and McDonald's omega reliability coefficients ( $\alpha = .92$ ;  $\omega = .92$ ).

Item 21 and 22 being the positive versions of the two negative items that were previously converted were eliminated from the model for the sake of simplification.

The assessment of the quality of the model's fit was based on the factor loadings, which showed values approximately equal to or greater than .40 and with statistical significance (Stevens, 2009). The reliability of each item and the chi-square test ( $\chi^2$ ) were other indicators used. Due to the high sensitivity of the chi-square test to sample size, the absolute fit indices ( $\chi^2/df$ ), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA) were also used.

A Confirmatory Factorial Analysis (CFA) was then performed to confirm the factorial structure fits of the Portuguese version of the questionnaire about student teacher trust. We used the Maximum Likelihood method, after verifying the existence of outliers through the Mahalanobis square distance, the asymmetry (Sk) and kurtosis (Ku) coefficients. We also

checked the assumptions regarding multicollinearity, singularity and homoscedasticity, and the existence of linear relationships between the items (Stevens, 2009).

**Table 7**

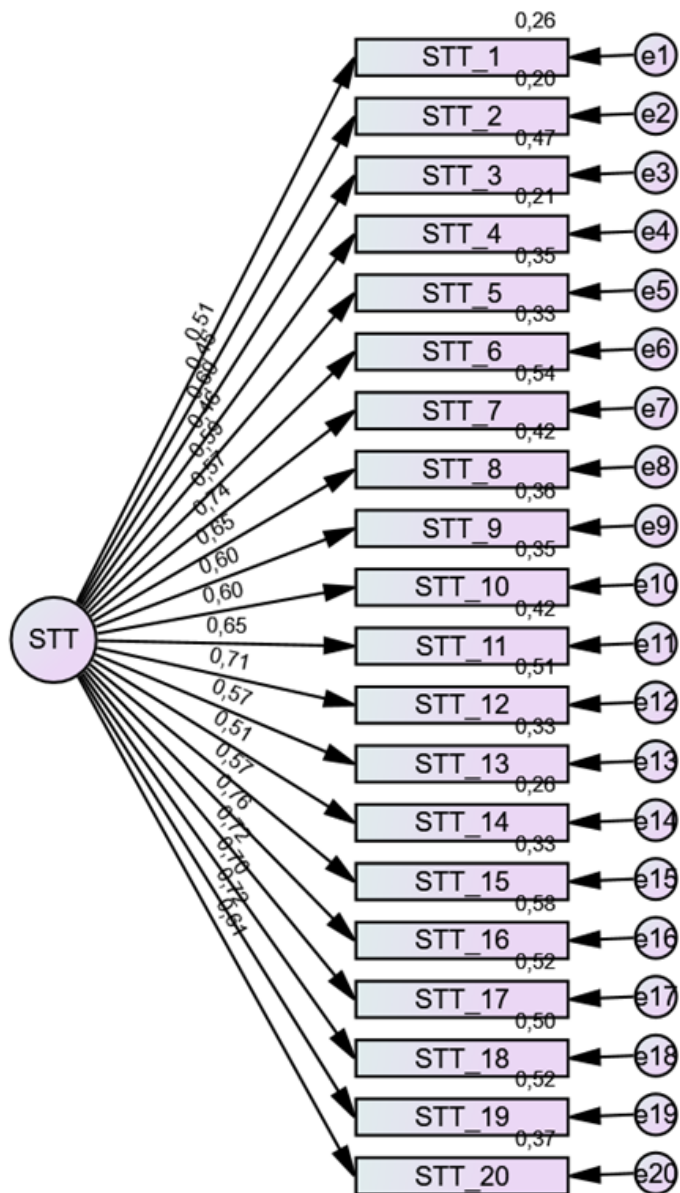
*Exploratory Factor Analysis of the Items of STT – Rotated Component Matrix*

STT item	Factor loading					Expected Facets
	Competence 1	Honesty 2	Benevolence 3	Openness 4	Reliability 5	
STT_01	.381	-.044	<b>.642</b>	.106	.152	(B)
STT_02	.035	.324	<b>.665</b>	.132	-.057	(O)
STT_03	<b>.506</b>	.323	.366	.092	.128	(B)
STT_04	.146	.176	<b>.544</b>	-.173	.479	(B), (C), (R)
STT_05	.258	.291	<b>.439</b>	.186	.305	(O)
STT_06	<b>.716</b>	.081	.090	.031	.182	(H)
STT_07	<b>.636</b>	.505	.066	.007	.098	(C)
STT_08	<b>.524</b>	.498	.024	.031	.136	(C)
STT_09	.082	.067	-.017	.357	<b>.785</b>	(B)
STT_10	<b>.704</b>	.159	.084	.107	.064	(H)
STT_11	<b>.481</b>	.411	.226	.108	.072	(C)
STT_12	<b>.508</b>	.287	.442	.229	.058	(R)
STT_13	.132	<b>.739</b>	.184	.075	.082	(B)
STT_14	.118	.369	.386	<b>.528</b>	-.049	(O)
STT_15	.048	-.004	.006	<b>.822</b>	.208	(C)
STT_16	.470	<b>.536</b>	.254	.078	.200	(B)
STT_17	<b>.678</b>	.218	.278	.136	.134	(C)
STT_18	.290	<b>.644</b>	.229	.206	.181	(B)
STT_19	.442	<b>.640</b>	.120	.073	.114	(R)
STT_20	<b>.534</b>	.273	.203	.212	.021	(R)
Cronbach alfa	.89	.88	.65	.62	.57	

**Figure 2**

Analysis of Trust Items

$\chi^2(170) = 808,469; p = ,000; \chi^2/df = 4,756$   
 $CFI = ,921; GFI = ,918, RMSEA = ,061; P (rmsea < 0,05) = ,000; MECVI = ,896$



Once the Confirmatory Factorial Analysis (CFA) had been carried out, observation of the results showed that the model has an adequate fit, with no need for any re-specification. Although the chi-squared value was statistically significant [ $\chi^2(170) = 808.469, p < .001$ ], this result is to be expected and admissible, if we take into account the large size of the sample, together with the reliability of the fit indices (Byrne, 2010).

The indices of the model showed an adequate fit ( $\chi^2(170) = 808.469, p < .001; \chi^2/df = 4,76; CFI = .921; TLI = .918; RMSEA = .06, 90\% CI [.057, .066]$ ) (Figure 2)

According to Marôco (2010) the CFI and TLI values are considered adequate when greater than .90 and RMSEA is considered and the  $\chi^2/df$  is acceptable between 2 and 5.

We concluded from this analysis that this instrument is valid to assess students' perceptions of the level of their trust in their teachers and that students in this study did express a significant level of trust in their teachers.

### *Student Identification with School (SIS) Questionnaire*

An exploratory factor analysis was performed to explore the underlying structure of the SIS scale (Table 8). KMO and Bartlett's test support that the factor analysis is appropriate (.75 KMO and Bartlett's  $p$ -value under .05 ( $X^2 = 1358, 21; p < .001$ ), A two-factor model – considering the two facets of Belonging and Valuing – was created, explaining 42% of the total variance contained in the 14 items (from the initial 16). Cronbach's alpha and McDonald's omega values ( $\alpha = .80; \omega = .83$ ) suggest good consistency levels.

The items 3 and 15 were removed because they were not related to the two extracted facets. The congruency of the scale was verified, as shown in Figure 2.

We used a varimax rotation in order to better interpret the factor loadings. It was very interesting to note that some of the items that in the original survey (Voelkl, 2012) were explaining the facets of Belonging changed to Valuing and the other way around, as shown by the varimax rotation on Table 8, and later discussed.

**Table 8**

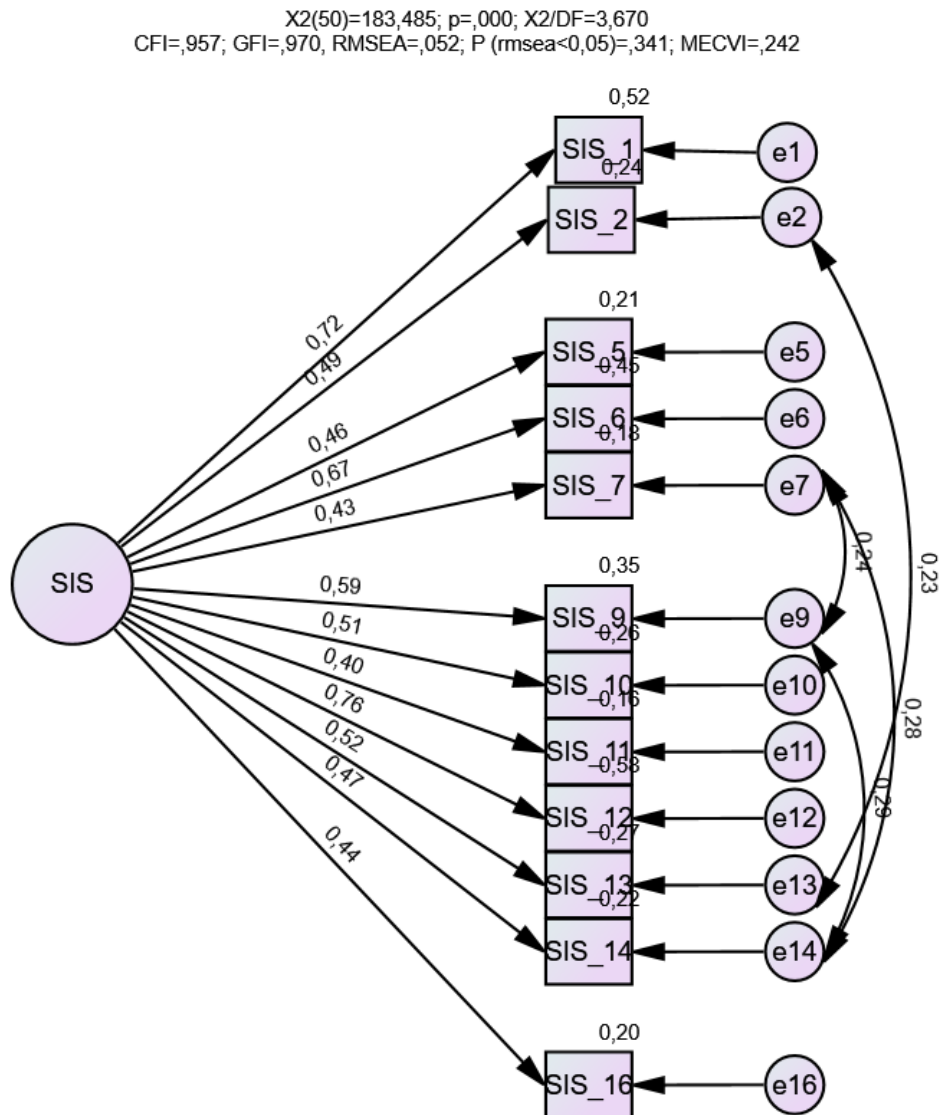
*Exploratory Factor Analysis of the Items of SIS – Rotated Component Matrix*

SIS item	Factor loading		Expected Facets
	Belonging 1	Valuing 2	
SIS_01	<b>.715</b>	.253	B
SIS_02	<b>.485</b>	.307	B
SIS_03	.031	<b>.649</b>	V changed
SIS_04	<b>.565</b>	.009	B
SIS_05	<b>.680</b>	.198	B changed
SIS_06	.279	<b>.585</b>	V
SIS_07	.046	<b>.703</b>	V changed
SIS_08	.424	<b>.599</b>	V changed
SIS_09	<b>.577</b>	.156	B
SIS_10	<b>.496</b>	.060	B
SIS_11	<b>.747</b>	.222	B
SIS_12	<b>.610</b>	.137	B
SIS_13	.264	<b>.687</b>	V
SIS_14	<b>.460</b>	.211	B changed
SIS_15	<b>.715</b>	.253	B
SIS_16	<b>.485</b>	.307	B
Cronbach alfa	.80	.71	

To verify the factorial structure fits of our Portuguese version of the SIS questionnaire, we applied the same Confirmatory Factor Analysis (CFA) as in the case of STT, recurring to the Maximum Likelihood method. Outliers were checked with the Mahalanobis square distance, the asymmetry (Sk) and kurtosis (Ku) coefficients and the assumptions of multicollinearity, singularity and homoscedasticity, as well as the existence of linear relationships between the items (Stevens, 2009).

**Figure 3**

Analysis of Identification Items



Interpreting the results of the Confirmatory Factor Analysis (CFA), we considered the cut-off points for loadings suggested by Stevens (2009), thus, additionally, we eliminated the items (4 and 8) with values below .40, as shown in Figure 3.

Once again, we obtained a statistically significant chi squared value [ $\chi^2 (50) = 183.495, p < .001$ ], probably due to the large size of the sample, so we took into account also the other recommended indices, which showed an adequate fit ( $\chi^2(50) = 183.495 p < .001; \chi^2/df = 3,670; CFI = .957; TLI = .970; RMSEA = .052, 90\% CI [.044, .060]$ ) (Figure 3).

### *Academic Press (AP) Questionnaire*

In section 3. we asked the students about their perceptions of Academic Press (Tschannen-Moran et al., 2013), aggregating the items that intended to describe those perceptions, and we then proceeded to their respective analysis, as one factor only, considering Academic Press a one facet construct (cf. Table 17 in Appendixes).

An exploratory factor analysis (varimax rotation) was used to explore the underlying structure of the items of the AP scale. The Kaiser-Meyer-Olkin (KMO) test is equal to KMO) .96 and the Barlett's Test has a p-value under .05 ( $\chi^2 = .105$ ;  $p < .001$ ), suggesting the adequacy of the factor analysis. Considering the factor loading, as shown in Table 9, we excluded item 5 (Figure 4). The scale showed acceptable internal consistency ( $\alpha = .72$ ;  $\omega = .71$ ) (Campo-Arias & Oviedo, 2008).

**Table 9**

*Exploratory Factor Analysis of the Items of Academic Press - Rotated Component Matrix*

AP item	Factor loading
AP_01	.88
AP_02	.94
AP_03	.94
AP_04	.97
AP_05	.73
AP_06	.96
AP_07	.92
AP_08	.87

**Table 10**

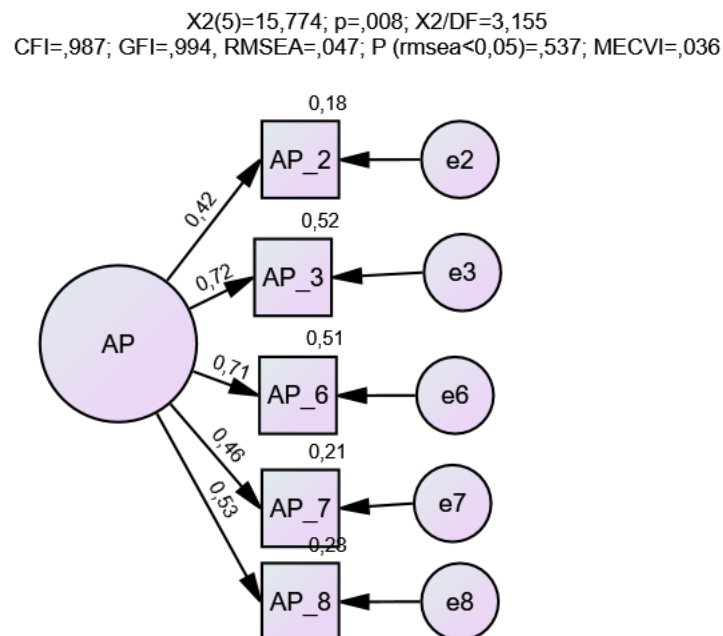
*Academic Press Congruency*

Item	Component
AP_01	.457
AP_02	.659
AP_03	.714
AP_04	.628
AP_05	.700
AP_06	.572
AP_07	.589
AP_08	.457
Cronbach alfa	.72

As in previous analysis, and in order to test the factorial structure fits of the Portuguese version, a Confirmatory Factor Analysis (CFA) was carried out using the Maximum Likelihood method. Previously, the existence of outliers was checked using the Mahalanobis square distance, and the asymmetry (Sk) and kurtosis (Ku) coefficients, as well as the assumptions regarding multicollinearity, singularity and homoscedasticity, and the existence of linear relationships between the items (Stevens, 2009). After performing a CFA, and based on Steven's cut-off point, we deleted items 1, 4 and 5.

**Figure 4**

Analysis of Academic Press Items



The indices of the model showed an adequate fit ( $\chi^2(5) = 15.774 p > .001; \chi^2/df = 3,155; CFI = .9871; GFII = .994; RMSEA = .047, 90\% CI [.022, .073]$ ) (Figure 2).

We concluded for the validity of the instrument and for the significance of the construct of Academic Press, as shown by the results.

### *Student Academic Optimism*

To advance the existence of the composite construct of Student Academic Optimism, we proceeded to the analysis of the eventual bivariate correlations between all facets at play, as shown in Table 11.

**Table 11**

*Bivariate Pearson Correlation Analysis of Facets*

Variable	<i>n</i>	1	2	3	4	5	6	7
1. Competence	995	—						
2. Honesty	995	.774**	—					
3. Benevolence	995	.636**	.605**	—				
4. Openness	995	.516**	.492**	.464**	—			
5. Reliability	995	.493**	.464**	.471**	.452**	—		
6. Belonging	995	.716**	.675**	.578**	.446**	.460**	—	
7. Valuing	995	.498**	.464**	.403**	.411**	.470**	.538**	—
8. Academic Press	995	.629**	.559**	.476**	.465**	.365**	.643**	.422**

\*\* . The correlation is significant at level .01.

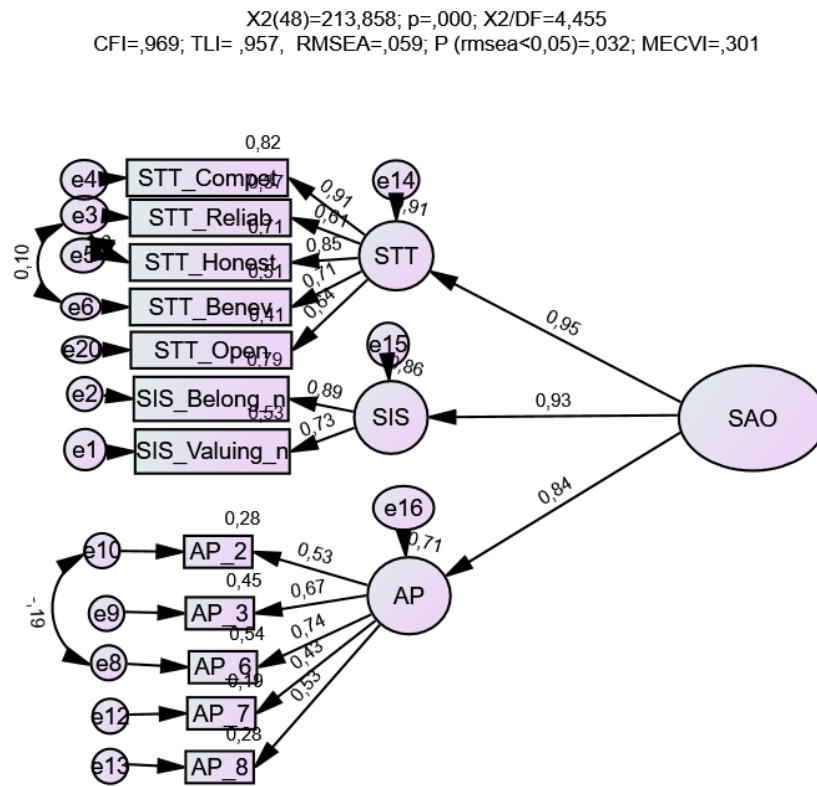
The bivariate correlation analysis indicates that the facets are moderated to strongly correlated and therefore we can propose that they are measuring a new composite construct that we recognize, after research (Tschannen-Moran et al., 2013), as Student Academic Optimism (SAO).

A Confirmatory Factor Analysis (CFA) was then used to verify that a latent construct, named after research Student Academic Optimism (Tschannen-Moran et al., 2013), would result from the correlations between STT, SIS and AP according to our data. Recurring to IBM SPSS AMOS 28, our CFA confirmed that there were significant effects of STT, SIS and AP — the three observed indicator variables — on the latent composite variable of SAO. In fact, the applied structural equation modeling (SEM) showed us that the variance-covariance of STT, SIS and AP allowed the existence of a composite construct.

Indeed, our second objective was supported. The factor loading for student trust in teachers was 0.95, for student academic press was 0.86, and for identification with school was 0.87. Student academic optimism accounted for 95 percent of the variance (Figure 5).

**Figure 5**

Confirmatory Factor Analysis of SAO



At this point, we concluded that the three constructs correlated significantly as to impact a composite construct that we named after research (Tschannen-Moran et al., 2013) Student Academic Optimism.

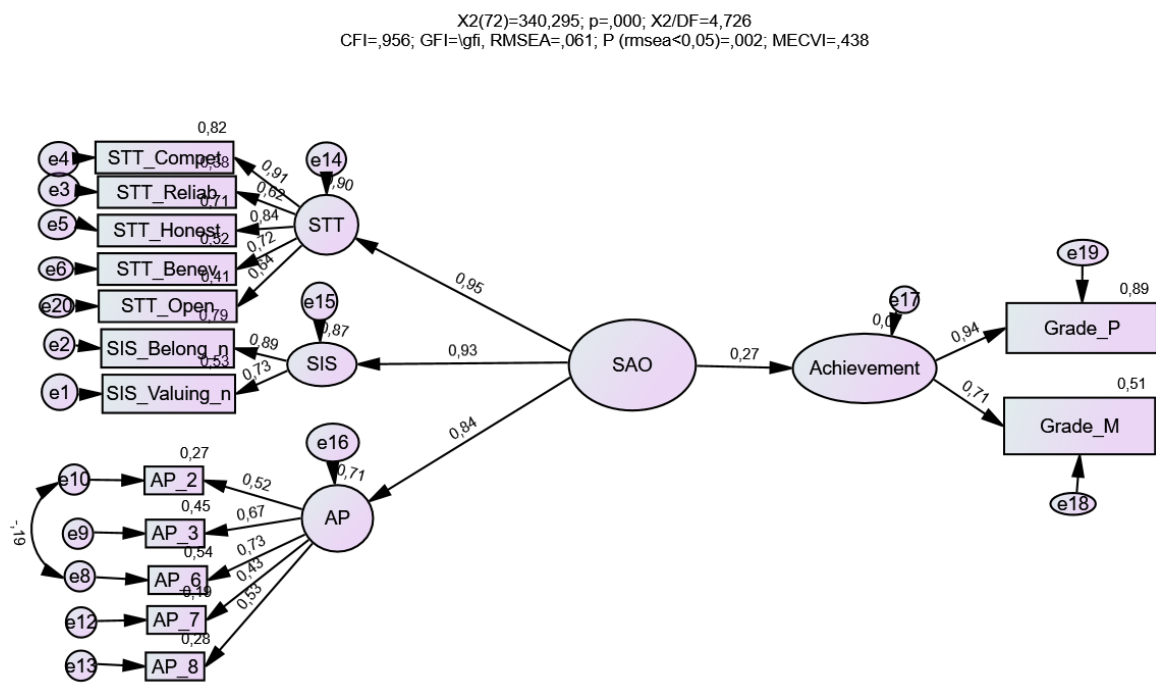
We obtained a statistically significant chi squared value [ $\chi^2 (39) = 179.467, p < .001$ ], probably due to the large size of the sample, so we took into account also the other recommended indices, which showed an adequate fit ( $\chi^2(39) = 179.467 p < .001; \chi^2/df = 4,602; CFI = .971; GFI = .967; RMSEA = .060, 90\% CI [.051, .069]$ ) (Figure 2).

### 4.3.3. Path Diagram

Once the association between variables and the analysis of the instruments had been conducted, and showed, in general, the adequacy of its psychometric properties, we moved on to verifying the third objective that guides the present study, using a structural equation model to test the conceptual model as to the impact of SAO on achievement assessed by Portuguese and Mathematics grades.

**Figure 6**

Student Academic Optimism (SAO) and Achievement Final Path Diagram



A statistically significant chi squared value [ $\chi^2 (72) = 340,295, p < .001$ ] was obtained (large sample size); we also considered other indices, which suggested an adequate model fit ( $\chi^2 (72) = 340.295, p < .001; \chi^2/df = 4,726; CFI = .957; GFI = .956; RMSEA = .061, 90\% CI [.055, .068]$ ) (Figure 2).

## Discussion

One of the most interesting things that this study brought is an insight at what seems a different perception on part of students as what the facets of the different constructs, namely STT and SIS mean. As to STT, 12 of the 22 items changed from facet expected. While 10 of the items seem to mean the same thing to students, the Portuguese students in this sample perceived two items expressing Openness to their USA colleagues as Benevolence (items 2 and 5); one item expressing Benevolence as Competence (item 3); two items expressing Benevolence as Honesty (16 and 18); two others as Reliability instead (9 and 22); two expressing Honesty as Competence; one expressing Competence as Honesty and two others as Openness. Further research of what motivates this and accurate analysis that complements the ones in this study would be useful to better understand the underlying motives of these shifts. Within this small sample it is difficult to advance conclusions, but it seems obvious that the Portuguese students in this sample, even if with nuances about the general meaning of their perceptions, do value these facets as their colleagues did. We also observed that some of the facets that students in the study reported by Tschannen-Moran and her colleagues (2013) included as Valuing the school, changed in the case of the Portuguese students in this study to facets of Belonging and vice-versa. It is not entirely clear what this can mean either. But it encourages discussion. The items that Portuguese students shift to Valuing, instead of Belonging, which is the case of their colleagues in U.S.A., ten years ago, are the ones that were negative ones: *at school I am noted only when I do wrong; most of the teachers do not take any interest in me; most of the time I would rather be elsewhere*. Maybe Portuguese students in this study think that their behavior indicates the value they attribute to school and that school concedes them, interpreting these items as expressing actions caused by what they think they and the teachers should do, compared to what really happens. A sense of duty may be more intrinsic to what the school demands, in the case of the Portuguese students in this study, differently from a more “existential” perception in the case of the American students, who link their behavior and that of their teachers to the need of belonging to a community. On the other hand, the items that the students in this study identified as Valuing whereas their American colleagues recognized as Belonging, are the ones that express the importance that each student confers to school: *school is more important than the majority of people thinks; school is one the most important things to me*. Maybe this means that Portuguese students in this study look at their judgement about the priority they attribute to school in their life as a facet of an intellectual judgement and not as an affective perception, as maybe the case of their colleagues.

The items that were eliminated due to their irrelevance also can bring insights to discussion about the facets of the constructs being variable or, at least, diversely perceived in different countries, or/and in different times, for the study conducted by Tschannen-Moran and her colleagues in the United States of America took place more than 12 years ago.

These differences also seem to show how much is common across these cultures and times, for in spite of them, the instruments proved well, and the constructs seem to describe real common perceptions of students living in different and yet similar circumstances.



## General Conclusion

Student Academic Optimism is a composite of Student Trust in Teachers, Student Identification with School and students' perception of Academic Press. When students experience high levels of trust in their teachers, identification with school and sense of academic press, their needs meet gifts, and optimism flows.

Vulnerability and the need to belong and feel valued are empirically verified elements of relevant constructs that describe basic school students' relationships with teachers and school, relationships that have as goal to provide personal and common experiences towards personal development, well-being and academic achievement. Vulnerability is established as fundamental to the construct of Student-Teacher Trust (Tschannen-Moran et al., 2012), and the need to belong and feel valued of Student Identification with School (Voelkl, 2012). Curiosity and desire to learn, especially in cognitively challenging environments (Bandura, 1989), are also reported by researchers as crucial factors of motivated and happy students and are addressed by an environment where academic outcomes are favored. This dynamic corresponds to Academic Press, the third construct present in this analysis. The empirical findings of these "negative" characteristics in students, especially during the turbulent pre-adolescent and adolescent years, seems a risk and an opportunity that adults in general and, specifically, educators, policy makers and researchers should look at attentively, and positively respond to, for ignoring or poorly responding to them is shown to cause trouble and delusion. Research has also shown how those "negative" facets interact with other facets, building constructs essential for allowing relationships to evolve into cohesive and positive opportunities of growth, for the parties involved, and namely for adolescents. In this way, the substance of relationships that enhance life at schools and, through that, of society in general, is formed.

The dynamics that compose and interrelate these constructs are very interesting, for they put flaws at play with strengths. In the case of trust, the incapacity of adolescent students to grow on their own, consubstantiates a need that — at play with a desire for independence — also arouses defense mechanisms, conveyed in a certain distance, reservation or even resistance to the adult, demanding from the latter the proof of the benevolence, reliability, honesty, openness and competence, that justify the student taking the risk of exposure to relationship admitting a vulnerability. This adolescent experience is not far from the one that happens to the adult: for the teacher also experiences the vulnerability of not being able to relate and really teach, reaching the student and effectively conveying knowledge, without the student's benevolence, openness, honesty, reliability, and competence. The teacher experiences the risk of trusting the student as well, with the same defense

mechanisms, maybe attenuated by experience and the consequent self-confidence and pleasure in trusting students that the vocation to be a teacher naturally confers, and the multiple life-long relationships bestow. But this experience of a need, a destitution, and consequently a craving, that may open into a desire, a request, a plead for benevolence, reliability, honesty, openness, and competence happens to both student and teacher. When they both decide to trust each other, they open an opportunity of a fruitful relationship: student and teacher alike, experience an inter-change of behaviors that contribute to the personal development, maturation, and attainability of the goals of both the persons involved. When they risk trusting and then offer and verify reciprocally benevolence, openness, honesty, reliability and competence, trust happens and can even evolve, very much like the process of trust evolving from awarding trust, through managing risk to transforming trust (Fine and Holyfield, 1996) as previously described in this thesis.

A similar dynamic seems to happen with the human needs to belong and to value and be valued (Finn, 1989; Fredricks et al., 2004; Mitchell et al., 2008): when an adolescent feels part of a school as a member of a community, feeling recognized, cared for and encouraged to excel, school becomes treasured as an essential factor of personal development, thus configuring what research has called Student Identification with School (Tschannen-Moran et al., 2013). The construct of individual's identification with an organization is also a multi-level one, very often addressed in general organizational research (Ashforth et al., 2008). As shown in chapter 2., its pertinence regarding students and their schools appears to be more benefic than its incidence in behaviors of adults in organizations, where it seems to easily deteriorate into alienation. Although it may be useful and sensible to keep that risk as an alert in educational settings, when observed within schools, regarding students, it appears as a positive factor, for it has been verified co-relating with personal development, motivation, safety, academic achievement, satisfaction, and well-being (Brito et al., 2021a).

In a school, learning becomes a quest when students are exposed to the marvel of knowledge and growing, yet aware of their ignorance and frailties. When it becomes clear that they can go beyond what they already know and can develop their capacities, the attractiveness of such a climate encourages students to enroll in learning with enthusiasm and effort. Difficulties become challenges and there is joy in responding to them, mutually celebrating, and encouraging and helping each other. This is Academic Press, that thrives in educational settings where students trust their teachers and identify with the school.

Although difficult to grasp even in tested questionnaires and scales, due to expected immaturity and volubility, what the students answer seems very important to develop further investigation and enhance schools, moreover in the present context of instability

and innovation. Furthermore, students reported that they feel valued when their perceptions are asked, which adds to the importance of this method of data collection.

Our study focused on the combination of the three constructs based on the students' perceptions — Student-Teacher Trust, Student Identification with School and student perception of Academic Press — forming a composite construct — Student Academic Optimism. The distinctive facets and their complementarity as relevant variables of the students experience and the fact that we can trace their link with each students' grades in Portuguese and Mathematics gives us some clue about the reciprocal influence of these factors. In this study we try to analyze the link of Student Academic Optimism with academic achievement, using the students' internal grades in Portuguese and Mathematics. Combining the questionnaires for Student-Teacher Trust, Student Identification with School and student perception of Academic Press with the numeric student's scores in Portuguese and Mathematics in the previous year, is an attempt — although with limitations — to allow for a thorough analysis of the factors in presence. In quantitative empirical studies, risking taking into consideration the numeric grades as variables, seems a helpful path towards some clarity and precision, that the latency of the constructs involved already compromises. When taken, as in the present study, the risk must be pondered that a numeric grade, objective as it appears, may be misleading as to the real knowledge and academic maturity of the student to whom the grade was attributed. Considering the internal grades, we somehow try to include a medium road between performance goals and mastery goals-oriented studies, as the internal grades may allow for a broader sense of each student's engagement in learning. One specific limitation of this study is due to the fact that in its design, the grades considered had to be the previous year ones; additionally, because of the anonymity of the answers, it is impossible to compare them with the next grades of the same students. Thirdly, the scores were given by each student which opens the possibility of error. Other studies can be designed to obviate these limitations. Further research is definitely necessary.

This study also supplies data that allow: i) verifying the influence of parents' academic habilitations in the level of student academic optimism and in academic performance; ii) observing the evolution of perceptions of students' trust in teachers, identification with school and academic press throughout pre-adolescent and adolescent years; iii) and note possible differences in perceptions from boys and girls, as in academic performance. Further research is necessary to understand if SAO can surpass the conventional assumptions and the data that confirm that age, sex and parental habilitations are the main factors of academic success, combined with social economic status. Tschannen-Moran and her colleagues (2013) already observed that SAO overruled the effect of students' social economic status, which seems promising to schools, educators and policy makers that aim

at winning over unavoidable circumstances that impair students' academic success. Further research can improve insights into these matters.

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# **Appendixes**



## Appendix 1.

### Student Trust in Teachers (STT) Scale

**Table 12**

*Student Trust in Teachers (STT) Scale applied questionnaire.*

	Nunca	Às vezes	Quase Sempre	Sempre
1. Os meus professores ajudam-me.				
2. É fácil falar com os meus professores.				
3. Os meus professores cuidam bem de mim.				
4. Os meus professores elogiam o meu trabalho.				
5. Os meus professores ligam ao que eu digo.				
6. Os meus professores dizem-me a verdade.				
7. Os meus professores fazem um trabalho excelente.				
8. Os meus professores ensinam muito bem.				
9. Acho que os professores NÃO gostam de alunos como eu.				
10. Eu acredito no que os meus professores me dizem.				
11. Eu aprendo muito com os meus professores.				
12. Eu posso contar com a ajuda dos meus professores.				
13. Os meus professores têm um bom sentido de humor.				
14. Os meus professores deixam-me fazer perguntas.				
15. Sinto que os meus professores NÃO querem que eu participe.				
16. Os meus professores fazem-me sentir bem.				
17. Os meus professores ajudam-me a dar o meu melhor.				
18. Os meus professores são simpáticos comigo.				
19. Eu gosto dos meus professores.				
20. Os meus professores encorajam-me a ser simpático.				
21. Os meus professores querem que eu participe.				
22. Os meus professores apreciam alunos como eu.				

Note.

The last two items (21 and 22) were the positive formulation of the negative ones (9 and 15). As the negatives were converted, we simplified the analysis ignoring the positive ones.

**Table 13**

*Translated and Applied Questionnaire: Correspondence of Each Item with Facets of Trust*

<b>Questionnaire translated and applied</b> (Forsyth & Adams, 2004)	
<b>Confiança do aluno nos professores</b>	<b>Facet</b>
1. Os meus professores ajudam-me.	(B)
2. É fácil falar com os meus professores.	(O)
3. Os meus professores cuidam bem de mim.	(B)
4. Os meus professores elogiam o meu trabalho.	(R)
5. Os meus professores ligam ao que eu digo.	(O)
6. Os meus professores dizem-me a verdade.	(H)
7. Os meus professores fazem um trabalho excelente.	(C)
8. Os meus professores ensinam muito bem.	(C)
9. Acho que os professores NÃO gostam de alunos como eu*.	(B)
10. Eu acredito no que os professores me dizem.	(H)
11. Eu aprendo muito com os meus professores.	(C)
12. Eu posso contar com a ajuda dos meus professores.	(R)
13. Os meus professores têm um bom sentido de humor.	(B)
14. Os meus professores deixam-me fazer perguntas.	(O)
15. Sinto que os meus professores NÃO querem que eu participe*.	(C)
16. Os meus professores fazem-me sentir bem.	(B)
17. Os meus professores ajudam-me a dar o meu melhor.	(C)
18. Os meus professores são simpáticos comigo.	(B)
19. Eu gosto dos meus professores.	(R)
20. Os meus professores encorajam-me a ser simpático.	(R)

*Note.*

H = Honesty / *Honestidade*; B = Benevolence / *Benevolência*; C = Competence / *Competência*;

O = Openness / *Abertura*; R = Reliability / *Fiabilidade*

**Table 14**

*Comparison Between Items in Questionnaire Expressing Facets of Trust*

<b>Facet</b>	<b>% Items</b>
Benevolence (B)	~33% (7 items)
Openness (O)	~14% (3 items)
Honesty (H)	~10% (2 items)
Competence (C)	~29% (6 items)
Reliability (R)	~14% (4 items)

## Appendix 2.

### Student Identification with School (SIS)

### Questionnaire

**Table 15**

*Student Identification with School (SIS) Applied Questionnaire.*

	Nunca	Às vezes	Quase Sempre	Sempre
1. Tenho orgulho em pertencer à minha escola.				
2. Sou tratado com igual respeito em relação aos meus colegas.				
3. Acho que vou conseguir um bom emprego mesmo com notas más.				
4. Só me ligam na escola quando me porto mal.				
5. Gosto de participar em atividades extra na escola.				
6. A escola é uma das coisas mais importantes na minha vida.				
7. Muitas das coisas que aprendemos nas aulas são inúteis.				
8. A maior parte dos meus professores não se interessa por mim*.				
9. A maior parte do tempo eu preferia estar noutra sítio e não na escola.				
10. Há professores e outros adultos na escola com quem eu posso falar se precisar.				
11. A maior parte do que aprendo na escola vai ser útil no meu trabalho.				
12. A escola é um dos sítios em que mais gosto de estar.				
13. As pessoas na escola estão interessadas no que eu tenho a dizer.				
14. A escola é muitas vezes uma perda de tempo.				
15. Desistir da escola seria um grande erro para mim				
16. A escola é mais importante do que a maioria das pessoas acha.				

**Table 16**

*Student Identification with School Questionnaire (Voelkl 1996)*

	Facet	One Factor Loading	Two Factor Loading (B) (V)
1. Tenho orgulho em pertencer à minha escola.	(B)	.54	.57
2. Sou tratado com igual respeito em relação aos meus colegas.	(B)	.40	.45
3. Acho que vou conseguir um bom emprego mesmo com más notas *.	(V)	.26	.28
4. Só me ligam na escola quando me porto mal *.	(B)	.46	.48
5. Gosto de participar em actividades extra na escola.	(B)	.36	.38
6. A escola é uma das coisas mais importantes na minha vida.	(V)	.65	.67
7. Muitas das coisas que aprendemos nas aulas são inúteis *.	(V)	.59	.61
8. A maior parte dos meus professores não se interessa por mim *.	(B)	.59	.61
9. A maior parte do tempo eu preferia estar noutra sítio *.	(B)	.59	.61
10. Há professores e outros adultos na escola com quem eu posso falar se precisar.	(B)	.48	.50
11. A maior parte do que aprendo na escola vai ser útil no meu trabalho.	(V)	.53	.57
12. A escola é um dos sítios em que mais gosto de estar.	(B)	.62	.63
13. As pessoas na minha escola estão interessadas no que eu tenho a dizer.	(B)	.36	.40
14. A escola é muitas vezes uma perda de tempo*.	(V)	.70	.74
15. Desistir da escola seria um grande erro para mim.	(V)	.29	.30
16. A escola é mais importante do que a maioria das pessoas acha.	(V)	.56	.59

B = Belonging V = Valuing

\*Items converted

## Appendix 3.

### Academic Press (AP) Survey

**Table 17**

*Academic Press (AP) Applied Questionnaire.*

	<b>Nunca</b>	<b>Às vezes</b>	<b>Quase Sempre</b>	<b>Sempre</b>
1. Os alunos respeitam os que têm boas notas.				
2. Os alunos esforçam-se bastante por melhorar.				
3. Esta escola quer que se aprenda.				
4. Os alunos trabalham muito para ter boas notas.				
5. Os conteúdos das disciplinas são exigentes.				
6. Os meus professores acreditam que eu posso aprender.				
7. As boas notas são apreciadas.				
8. Posso ter ajuda extra na escola se precisar.				

## Appendix 4.

### Student Academic Optimism (SAO)

**Table 18**

*Bivariate Pearson Correlation Analysis of Model*

	Effect	SE
SAO	← STT	.467
SAO	← SIS	.436
SAO	← Academic Press	.455
Competence	← STT	.875
Honesty	← STT	.792
Benevolence	← STT	.778
Openness	← STT	.600
Reliability	← STT	.622
Belonging	← SIS	.801
Valuing	← SIS	.688
Portuguese	← SAO	.373
Math	← SAO	.304

**Table 19**

*Effects Analysis*

Effect	Estimate	SE	CR
SIS	.194	.012	15.631
STT	.223	.011	19.498
E10	.212	.010	22.293
E3	.068	.005	15.142
E4	.132	.007	18.673
E6	.231	.011	2.990
E7	.354	.017	2.965
E8	.108	.008	14.147
E9	.216	.011	18.963
E1	6.326	.287	22.030
E2	1.079	.455	22.128
E5	.146	.008	19.010

**Table 20**

*Model Fit Indices: RMR, GFI, AGFI, PGFI*

Model	RMR	GFI	AGFI	PGFI
Default model	.625	.753	.669	.561
Saturated model	.000	1.000		
Independence model	.752	.363	.221	.297

**Table 21**

*Model Fit Indices: RMSEA, LO 90, HI 90, PCLOSE*

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.200	.192	.208	.000
Independence model	.332	.324	.339	.000



