SOCIAL CAPITAL AT SCHOOL: A TOOL TO MEASURE STUDENTS' ENDOWMENTS

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Abstract. This study presents an innovative methodology for measuring social capital among students to detect variations in its distribution across different territorial contexts. The proposed model is based on a multidimensional perspective of social capital, encompassing structural, relational, and cognitive dimensions, and utilizes three tools: a questionnaire, sociometric mapping, and age-appropriate economic games. The work provides a solid methodological framework that is helpful in exploring how social networks, trust relationships, and prosocial preferences develop and differ in relation to the living environment and school. The study aims to contribute to the understanding of social capital as a relational and value-based resource that promotes social cohesion, educational inclusion, and civic participation within school and territorial contexts.

1. Social capital: origins, definitions, and theoretical frameworks

This article will examine the concept of social capital in the educational context, with a focus on the well-being of students and the school community.

Social capital is an intangible concept in social science that attempts to explain collective events and individuals' behaviour through human connections, shared values, and trust. Despite its ambiguity, scholars' reflections shed light on many ideas, particularly relevant when evaluating community-based interventions involving multiple stakeholders, such as in educational contexts (Badiglio, 2025).

The concept of social capital was developed by scholars such as Robert Putnam, James Coleman, Francis Fukuyama, and Pierre Bourdieu, sparking significant interest among sociologists and economists in the 1980s and 1990s. Although the term has existed for over a century, its first appearance was in Lyda Judson Hanifan's work (1916), where he described social capital as social networks in urban areas (Jacobs, 1961).

A first conceptual formulation is attributed to Pierre Bourdieu from the late 1960s, studying France's dominant classes (Bourdieu, 1980). He views social capital as depending on social connections based on accessible resources.
James Coleman (1990) developed a comprehensive social capital theory, emphasizing two key features: the structural aspect, which relates to the connections

between social actors, and the functional aspect, which supports individuals' actions as rational agents. This distinction guides future discussions on social capital.

Building on the work of Granovetter, North, and Coleman, Putnam expands the concept of social capital through fieldwork. His study of Italian society (Putnam *et al.*, 1993) examines the relationships between associations, volunteering, norms, trust, solidarity, tolerance, and civic engagement. While not including altruism in his definition, he notes a strong link between altruism and social connectedness. Fukuyama (1995) claims that social capital is distinct from social networks, primarily comprising shared norms and values. Culture acts as a set of norms that enable collective action, with mechanisms such as norms, values, and ideologies regulating social relations.

A comparison shows problematic features of social capital (Mikiewicz, 2021). Some see it as an individual resource (Bourdieu), while others view it as a collective one (Coleman, Putnam, Fukuyama). Bourdieu, Putnam, and Fukuyama link social capital to the strength of social ties that expand an individual's societal role; Coleman, on the other hand, sees it as an internal endowment, rooted in intimate bonds such as family. Thus, social capital can be a flexible, multidimensional concept (Bourdieu, Coleman), or it can be mainly tied to specific structural or normative aspects (Putnam, Fukuyama).

To bring order, some authors have proposed interpretative suggestions and attempted to establish some common elements. Onyx and Bullen (2000), for example, identify some recurring themes in the literature on social capital:

- **Participation in networks**, which are configured as horizontal associations between individuals or groups and vary in intensity and density.
- **Reciprocity**, understood as the expectation of an exchange of services or favours, both in the short and long term.
- **Trust** involves the willingness to take on social risks based on the expectation that others will act reliably.
- **Social norms**, or the shared values that are often unspoken, regulate daily behaviors and interactions.
- **Proactivity**, characterized by the sense of personal and collective efficacy, is the ability and willingness of citizens to engage actively in the life of their community.

Although these themes are common elements of social capital, their relevance in educational communities varies across subjects and contexts. Research aims to define specific types of social capital, often in response to studies (Woolcock and Narayan, 2000; Mikiewicz, 2021).

From the structural analysis of social networks (Granovetter, 1973; Lin, 2000, 2001), more detailed concepts have been proposed, considering both horizontal and vertical ties between individuals and organizations. Regarding community well-

being, bonding social capital is based on interpersonal solidarity among homogeneous groups working toward shared goals (Wuthnow, 2002; Gittel and Vidal, 1998; Aldridge *et al.*, 2002). Bridging social capital involves weaker ties connecting diverse groups across boundaries (Gittel and Vidal, 1998; Aldridge *et al.,* 2002; Wuthnow, 2002), and linking social capital captures social networks characterised by asymmetrical and mostly vertical social relationships between individuals with different spaces of power (Alguacil Mir and Valdivia-Vizarreta, 2025). resources outside their community (Harrison, Montgomery, & Bliss, 2016).

In a now common tripartition, social capital is examined by differentiating between the structural, normative, and cognitive dimensions. (Uphoff, 1999).

The structural dimension refers to the network of social relationships an individual can activate to access material or symbolic resources. These networks encompass both strong ties, such as family and friendships, and weak ties, which are established in educational, work, or community settings. Networks serve not only as channels for information and support but also as spaces where a sense of belonging, identity, and mutual recognition is built. They can be analysed in terms of density, reciprocity, centrality of actors, and the degree of openness or closure of the network.

The normative dimension encompasses rules, habits, and expectations that govern behaviour within social networks. It operates through norms, practices, moral codes, and cultural models, with trust, reciprocity, and solidarity playing key roles. Trust serves as a cognitive-emotional mechanism that reduces uncertainty and facilitates cooperation.

Finally, the cognitive dimension involves individuals' perceptions of shared norms, values, and social reality within communities. It encompasses beliefs, expectations, and interpretations that influence collective intentionality and the legitimacy of social institutions. Fukuyama (2002) noted that culture, as shared norms and values, is key to communication, meaning negotiation, and cooperation. In education, this includes shared expectations, identification with institutional values, and a sense of belonging to the school community.

The integration of structural, normative, and cognitive dimensions allows us to understand social capital as both a mechanism for social regulation and a resource for development. The primary objective of this work is to develop a set of tools that facilitate the joint analysis of these components, thereby revealing the complexity of social capital and informing the development of effective educational strategies. Schools are ideal environments for observing and promoting social capital, encouraging trust, cooperation, and shared values and meanings.

In these contexts, that aspect of the normative social capital that relates to the characteristics and qualities of personal relationships, such as trust, obligations, respect, and even friendship, has a significant impact on sustaining organizational change and school improvement, with a substantial role of the school leadership

(Bryk & Schneider, 2003; Seta & Badiglio, 2024). In this sense, scholars prefer to speak about relational social capital (Nahapiet and Ghoshal, 1998; Gooderham, 2007).

2. Social capital and social preferences at school

The reflections highlight the complexity of social capital, a multifaceted and challenging phenomenon to investigate (Dasgupta and Serageldin, 1999). While significant in economic and social contexts, effective measurement is needed to make it usable (Onyx and Bullen, 2000; Putnam, 2001; Badiglio, 2025).

The school environment is crucial to students' cognitive development and the cultivation of prosocial values. Social capital serves as both an individual resource and a social regulation mechanism. Relationships among students, teachers, and families form a social fabric where information, support, norms, and values flow (Coleman, 1988; Lin, 2001; Putnam, 2000).

Research on social capital in education mainly focuses on its effects on academic performance, behavioural adaptation, and pathways to success (Parcel & Dufur, 2004; Crosnoe, 2004; Goddard, 2003).

These studies demonstrate that strong peer, teacher, and parent networks, built on trust and reciprocity, predict better academic outcomes and fewer behavioural problems. However, this view risks viewing social capital solely as a tool for educational success, overlooking its role in fostering social preferences and shared values.

This contribution differs from this perspective. Social capital is viewed as a key aspect of students' lives, fostering social preferences such as altruism, trust, and cooperation that extend beyond the school environment and influence interactions outside of it.

This approach requires a greater focus on certain variables that are often overlooked. For example, Van Rossem *et al.* (2015) show that social capital in schools develops through daily, often unconscious interactions that shape norms and classroom climate. Peer networks are not just exchange channels but also foster moral beliefs, collective judgments, shared expectations, and legitimacy of cooperation or exclusion.

Their detection requires considering not only the network structure but also trust, reciprocity, and altruism in supporting peer connections. These social preferences, rooted in and reinforced by a supportive, 'relationally dense' educational environment, express trust, reciprocity, and altruism.

Social preferences develop in schools through interactions and climate, as evident in the practices of helping, collaboration, and the stigmatization of selfishness.

Cohesive classes, where these are common and stable, promote collective well-being and responsibility (Bryk and Schneider, 2002; Badiglio, 2025).

Access to these relational social capital resources is heavily influenced by social position and stratification mechanisms (Bourdieu, 1986; Lin, 2000). School networks are not just places of spontaneous encounter; they follow rules on access, proximity, and recognition that can favour some and marginalize others. Social capital can help integrate and strengthen individuals, especially in open, trust-based networks, but it can also reinforce inequalities, benefiting those with greater cultural, economic, or symbolic resources (Salloum *et al.,* 2017).

In educational settings, social preferences are shaped by personal traits and social processes influenced by the organization of schools. Values and norms are affected by relational climate, friendship networks, teacher leadership, and daily interactions (Salloum *et al*., 2017; Seta & Badiglio 2024; Badiglio 2025).

This work's methodology provides a comprehensive view of social capital in schools, encompassing not only its functional link to human capital in developing competences, skills, and knowledge, but also its broader implications.

A tool will be created to capture the value-based and relational aspects of social capital, considering interactions with growth, family, friendships, and communities, and their impact on behaviour and choices. Social capital promotes traits such as trust, altruism, and cooperation, influencing students' behaviour.

Individual social capital is shaped not only in school but also by upbringing, family, parental network, and early friendships. A survey conducted across diverse Sicilian regions with varied socio-demographics compared urban and rural schools, examining their differences in cultural, economic, and social capital. It aimed to understand how initial conditions and relationships affect social capital and territorial inequalities.

3. Methodology

The measurement of social capital is a subject of controversy (Putnam, 2001; Onyx and Bullen, 2000; Grootaert, 2004; Claridge, 2018), due to its theoretical complexity and challenges in developing valid tools.

Primarily, one can adopt a community perspective by using international survey tools, such as the World Values Survey (WVS), the European Values Study (EVS), and the General Social Survey (GSS). These instruments are generally too broad and independent of the context. Almost all of them tend to equate social capital with general trust, without considering the context (Thöni *et al.,* 2012).

One can also adopt a group perspective, focusing on certain variables measured at the aggregate level, which capture how the group or organisation holds this capital.

Often in these cases, the focus is on the role and significance of leadership (Seta and Badiglio, 2024).

Finally, one can adopt an 'egocentric' perspective. Focusing on this perspective, social capital is characterised as the set of direct relational resources (relationships that the individual has with others) and indirect ones (relationships of the individuals to whom the person is connected).

This study adopts the last perspective to quantify students' social capital within educational institutions, combining a triangulation approach (Denzin, 2006), which led to the design of three tools: a self-administered questionnaire, a sociometric questionnaire, and three economic games for behavioural experiments (Table 1).

Table 1 - *Social capital measures.*

Tool	Dimension	Variable
Self-administered questionnaire	Relational and cognitive social capital	Trust Safety Responsibility Life satisfaction Altruism Social distance
Sociometric questionnaire	Structural social capital	Degree centrality Harmonic centrality Betweenness centrality, Hub centrality Authority centrality.
Economics games	Social preferences	Reciprocity Trust Cooperation

The self-reported questionnaire aims to assess the subject's confidence in the strength of his/her social connections, also considering the social distance of these ties, whether they are with family members, peers, school staff, or acquaintances, namely his/her own direct relational resources.

The questionnaire was divided into three sections: general information (age, gender, family composition, parental occupation), indicators of subjective well-being inspired by the structure of the International Survey of Children's Well-Being (ISCWeB), and assessment of prosocial and altruistic actions (Caprara and Pastorelli, 1993; Pfattheicher *et al.*, 2022).

The central part analysed the main relational contexts (family, school, friends, and neighbourhood), exploring the perceived levels of trust, sense of safety, responsibility, and life satisfaction. The statements proposed included, for example: *I trust my family/classmates*; *If I have a problem, my family will help me*; *I feel safe*

at school/at school; *I have the opportunity to make decisions about things that are important to me* (Rotter, 1971; Betts, Rotenberg, and Trueman, 2009; Imber, 1973). For the assessment of altruism, students were asked to express the frequency of general prosocial behaviors, such as: *I share the things I like with friends*, *I try to comfort others*.

The sociometric questionnaire reconstructs the social network's structure using a 'name generator' approach (Van der Gaag and Snijders, 2005), where students identify their top three gifted classmates in terms of specific relational resources: reliability, willingness to help, and ability to manage conflicts. This allows for the outlining of the relational networks within the classes, identifying central and peripheral nodes, which is useful for subsequent analysis of the distribution of social capital and inclusion (Ferrin *et al.*, 2007; Rotter, 1980).

Finally, to assess students' social preferences, all students participate in a session of economic games: the Ultimatum Game, the Trust Game, and the Public Good Game, set in '*magical'* narrative scenarios with symbolic exchanges of '*gems'*. These games were adapted to analyse reciprocity, trust, and cooperation within a playful context.

The variables observed through the utilization of the three tools facilitate the measurement of each student's social capital endowment at an individual level.

The three tools were specifically designed for administration to primary and secondary school students aged between 9 and 12 years. This cohort was chosen because it corresponds to a developmental phase in which the individual gains more independence from the family, and peers begin to play an essential role in the ecological landscape of the individual (Csikszentmihalyi *et al.*, 1977; Bronfenbrenner, 1979; Forbes and Dahl, 2010; Blakemore and Mills, 2014). In this phase of an individual's social capital development, the school plays a significant role.

The construction of a set of tools expressly designed to measure the social capital in children is one of the major novelties of this work.

All the data gathered using the three different tools were analysed within a unique theoretical framework that considers the students' social capital as a multidimensional construct, in which values, social ties, and social preferences play a role and must be measured with specific tools.

4. Conclusions

This contribution proposes an innovative methodology for measuring social capital within the school environment, aiming to explore relational differences across various contexts through the direct involvement of students. The approach

adopted integrates quantitative and qualitative tools, such as questionnaires, sociograms, and economic games, capable of detecting not only the presence of relational networks but also the quality of prosocial preferences that emerge in different educational settings.

This preliminary phase of the work has focused on designing a robust methodological framework capable of capturing the structural, normative, and cognitive dimensions of social capital, without yet proceeding to the analysis of the collected data.

In this sense, the contribution is a theoretical and operational foundation for future empirical investigations, offering a detection model that can be used to compare social capital endowments across territories and to better understand the dynamics of cohesion, inclusion, and participation within schools.

The originality of the proposal lies in recognising the school not only as a place of formal learning but also as a privileged social space for observing social capital. The use of tools suitable for a young audience, such as narrative games and sociometric surveys, has enabled a sensitive and accessible capture of the dimensions of trust, cooperation, and altruism.

Although data analysis is ongoing, the proposed tool allows investigation of how territorial and family conditions affect students' social networks. Focusing on bonding and bridging social capital may be crucial in assessing schools' capacity to include students in culturally diverse or vulnerable settings.

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