SOCIAL SKILLS AS PREDICTORS OF PEER ACCEPTANCE DURING THE FIRST YEAR OF FORMAL EDUCATION

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ABSTRACT

The objectives of this study were to: a) to assess growth curves to determine peer acceptance at the beginning of the year as well as acceptance over 3 time periods of the school year, b) to determine the social skills that predict peer acceptance during the first year of formal education and c) to examine the effects of social skills on peer acceptance during the transition period to formal education. Teachers of 498 children answered the Social Skills Rating System-teacher form (Gresham & Elliot, 1990). Acceptance was assessed across three time points separated by 10-week intervals from the month of January of 2011. Multilevel analyses were used to examine the degree to which social skills were antecedents of peer acceptance across the first year of formal education. In addition, growth curve modeling was conducted using Hierarchical Linear Modeling (HLM) to assess the variables that account for between-person variance in the intercepts and the slopes of the children's growth curves. Findings showed that (a) cooperative skills and control skills were more strongly associated with the intercept, (b) assertiveness was not associated with either the intercept or the slope, (c) the slope of time was predicted by none of the T1 measures and none of the individual T2 variables, (d) the slope of time was predicted by the interaction between cooperation and assertiveness, and between cooperation and self-regulation. Simple effects tests were used to clarify the two interactions (i.e., cooperation by assertiveness, and cooperation by self-regulation) predicted in the slope. It was concluded that the significance of any particular skill will vary as a function of another skill. The findings provide a new insight into the developmental pathways of children's social skills leading to peer acceptance.

Key words: *social skills, peer acceptance, early childhood, multilevel analyses, growth curve model, preschool institution.*

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Introduction

The transition to school marks a significant and challenging phase during early childhood (Schmerse y Zitzmann, 2021). Children's successful adjustment to kindergarten reflects individual children's abilities (e.g., better social skills, inhibitory control) to establish positive associations with their peers. These interactions contribute uniquely to social, emotional, and cognitive development, and social skills are one of the most important accomplishments of childhood years. Therefore, understanding the factors that affect adjustment to the peer group context during the period of transition into school is important for the understanding of social development and adjustment.

The differential effects of social skills on social acceptance at different points in the school year has been largely overlooked in the literature on peer relations. Prior studies of peer acceptance have considered different units of analysis (e.g., behavior problems, social skills, communication skills, academic skills), over different developmental spans (e.g., childhood, middle-childhood; adolescence) and employed different methods (e.g., multilevel models, multiple regression analysis). This study uses a multilevel model to explore the way that social skills affect peer acceptance for children who are transitioning to formal education.

This research specifies the effect of social skill types (i.e., cooperation, assertion, self-control) on acceptance among peers during the period of transition into formal education. Moreover, how social skills intersect with each other and how they are antecedents of peer acceptance. To achieve this, first, a two-level hierarchical model is presented. It examines the developmental trajectory of social skills and assess the interactions between them that are associated with acceptance. Next, the growth curve analysis is shown to clarify the interactions (i.e., the different combinations of social skills) that predict success within the peer group at the beginning of the year and those that predict change over the year.

Justification

It is evident how the human being is formed in society from the dynamics of the relationships that are established with the different people who make up or partake of their environment. Quinn & Hennessy (2010) posits that peer acceptance in early childhood is predictive of later peer relationships. Thus, it is vital to understand the emergence and characteristics of early peer relationships and the key role they play in children's cognitive, social, and emotional development. For this reason, it is necessary to establish the importance of identifying the social skills that could make a child more accepted within a social group. Considering the importance of the construction of positive peer relationships, it is necessary to eliminate those barriers that are generated in the classroom in front of the acceptance of peers and decreases the development of disruptive behaviors (Quinn & Hennessy, 2010; Perolli-Shehu, 2019).

The topic of Social Skills has been discussed not only by different authors, but also by different psychological approaches and in recent years, it has received significant attention. To such an extent, that The United Nations Children's Fund (UNICEF, 2020) has highlighted the importance of children's social skills, stating that aspects such as cooperation, sharing, help, communication, empathy, friendship, among others, "are valued in different stages, dimensions and environments of life" (p. 44). Likewise, children's social skills are considered a fundamental factor because of the impact they have on peer acceptance, optimal development (cognitive, emotional and social), and the school experience of each child, especially in the transition from one context to another (Margetts, 2009; Lacunza & Contini, 2009).

Currently, the importance of developing positive and strong peer relationships in the classroom not only has an impact on children's emotional development but also on their social development within the classroom (Van der Wilt *et.,* 2018). It has been shown that

children who have positive experiences with their peers during the early years in school are more likely than other children to show better academic performance (Wentzel, Jablansky & Scalise, 2018). Furthermore, children's positive relationships with their peers provide an important support for the development of social, cognitive and academic skills in the early years. According to García-Bacete, García, and Monjas (2005), the degree of a child's well-being is influenced by the type of interactions that children have with their classmates, whether they feel comfortable with the relationships they have by being integrated into their peer group or feel rejected by not being accepted.

In Barranquilla, a city on the Caribbean coast, a presumably collectivist context, children are expected to report to be liked by their peers when assessing levels of acceptance. Pilgrim and Rueda-Riedle (2002), claim that "persons raised in collectivist societies are encouraged to identify themselves with other members of the group and to sacrifice for the good of that group" (p. 284). Therefore, due to the collectivist characteristics in Colombia, children are expected to report relationships and in-group harmony between peers (i.e., acceptance), spontaneous sharing and cooperation, and approaching to others. Consequently, it is expected that Caribbean children report mutual friendship and affection and prioritize the group over the individual. Social competence simply cannot ignore the context surrounding the children, as well as the socioeconomic status or cultures.

In a sense, this study seeks to provide knowledge for a broader understanding of the acceptance of classmates throughout the school year, specifically analyzing what happens in the first year of formal education. Specifically, it addresses the range of individual differences in children's social skills that may facilitate or impede social acceptance. This research encompasses a fundamental element to study and analyze in the line of childhood and education. In addition, it is expected that the findings from this research will serve as a contribution for educational agents in the pedagogical processes they develop in the

classroom. Taking into account that school is one of the first educational spaces for children, it is essential to study and investigate the dynamics developed within it. In this educational stage, children are formed and develop their person from the relationships established with the people with whom they are surrounded with in a daily basis, who are key for the development throughout school life (Valencia & Atehortúa, 2019).

Finally, the present study, by using quantitative data that had been collected in 2011, is considered viable for the development of this research. The project financed by Colciencias: Factors determining academic performance at preschool age (López, 2009), allowed the use of the data by the researcher. Vartanian (2010) emphasizes on the advantages of using Secondary Data that includes the representative sample of some population and a broad range of topics. Another advantage is that it tends to take far less time to design, collect and organize the data by using this method. This data has not been previously used or published in scientific journals, which allows it to make an even more significant contribution to the scientific community.

Problem Statement

Children who lack social skills and are unable to adopt specific behavior to interact effectively in their social contexts are more likely to be rejected and have no friends. Difficulties with peers place a child at risk of developing behavioral or psychological difficulties (low self-esteem, anxiety problems, loneliness, and depressive symptoms) and, consequently, impact on children's adjustment (Rubin *et al*.,1998; Rubin Bukowski & Bowker, 2015). UNICEF (2014) explains the importance of social relationships within the educational environment by stating that "although a student may enjoy a positive relationship with their teacher, if they do not feel a positive connection with their classmates they are likely to want to avoid school or come, but feel marginalized" (p. 32).

A lack of social skills may be both the cause and the consequence of their friendlessness and lack of ability to build friendships. Children who do not establish good relations with peers are more likely than other children to show behavioral and emotional problems during adulthood. Authors (Bukowski, Hoza & Boivin, 1993) have described the effects of children's peer relationships and experiences within the peer group and their experiences. Bukowski *et al* (1993), have found that children who are rejected may not feel included in the peer group, they may nevertheless be protected from feelings of loneliness. They also focused on the importance of mutual friendships. Authors claim that non reciprocated friendships are less likely to provide experiences for closeness and security (Bukowski *et al*., 1993; Rubin *et al.*, 1998; Rubin *et al*., 2015).

Peer rejection and negative peer treatment increase the likelihood that rejected children will be excluded from social activities (Zhang *et al*., 2014) and exist as a major risk factor with regard to difficulties such as loneliness, depression, and anxiety (Kingery, Erdley & Marshall, 2011; van der Wilt *et al.*, 2018; van der Wilt *et al*., 2019). Findings also indicate that rejected children are exposed to negative feelings and treatment, compared to the

accepted classmates (Coie, 1990 see Buhs & Ladd, 2001). In other words, peer rejection and being excluded from meaningful contacts with peers, is a stressful life experience.

A cross-cultural analysis study (Bass *et al.,* 2018) that explored the relationship between aggression and peer victimization and assessed these relationships in Canada, Brazil, Colombia, and China, reported significant differences between countries. Authors found differences in peer victimization were detected with a significant prevalence in Canada and Brazil. However, they also found that relational aggression in Colombia was significantly higher than Brazil and China. Research showed the relationship between peer acceptance and peer victimization, and how both are associated with depressive symptoms (Kochel, Ladd & Rudolph, 2012).

Based on the above, Colombia is no stranger to this situation. Findings of research undergone with children living in poverty, which is consistent with the characteristics of the sample of this study, showed that different difficulties were to be found in the interaction with peers. For instance, 30 % of the children did not use skills linked to dialogue and approached other children and 50 % of the participating children (N= 318) did not use to introduce themselves spontaneously to other children and adults, nor the first to approach other children they did not know (Lacunza & Contini, 2009). On the other hand, in a study by Plazas *et al. (*2010) on peer relationships and prosocial behavior in Colombian students at different educational levels (elementary, secondary, higher education), it was found that children who are categorized as rejected at school are much more antisocial at university than at other educational levels (Plazas *et al.,* 2010). Indeed, several studies show the importance of the early years for the development of socialization skills which, if weak, can have repercussions when entering youth or adulthood (Barry & Connor, 2010).

Naturally, research attention is directed at examining the factors that influence the phenomenon of acceptance or rejection of children in the group (e.g., communication skills,

cognitive abilities, motor skills, etc.) (Perolli-Shehu, 2019). Other studies have explored teacher–child relationships (Barry & Connor, 2010), parental practices (Takahashi *et al*., 2015) and growth in social skills during early school years. But very few studies have focused on exploring, not only the trajectory of each social skill, but the intersect between them and its impact on peer-peer relationships during the kindergarten period, which is considered a crucial time for children to improve their social skills and to establish stable mutual friendship (Zhu *et al*., 2021). Longitudinal studies of social skills components have centered on trying to understand the individual development of self-control, cooperation, and assertion. A broad understanding of early childhood social skills is necessary to identify child risk characteristics that may lead to early preventive measures and intervention (Elliot & Gresham, 1993; Zhu *et al*., 2021).

Evidently, empirical work of peer relationships has not explored whether the interaction among different social skills variables can explain the variability in children's level of acceptance (Takahashi *et al*., 2015; Lamont & Van Horn, 2013). There is limited knowledge about the developments of these components during childhood, as a result, the scores obtained in social skills possibly overestimate or underestimate the actual state. Due to this, the present study uses a more complex method to contribute to the understanding of not only the individual factors of social competence but the relationship between them to predict peer acceptance growth.

Purpose Statement and Research Questions

The present study integrates themes and variables that are central to the understanding of peer relations and adjustment to the school environment. The goal is to examine how social skills affect peer acceptance for children who are in the process of making the

transition into formal education. This study examined how social skills intersect with each other and how they are antecedents of peer acceptance. The central question of the study is: How do social skills affect peer acceptance at the beginning of the school year and throughout the year? From this main question, the following guiding questions are formed: 1) How does peer acceptance change across the first year of formal education? Relatedly, how do these changes vary across individual children? 2) Which social skills are associated with variations in peer acceptance at the beginning of the first year of formal education and how do they predict changes across the year? 3) Do social skills affect peer acceptance in a univariate manner or do they moderate each other's effects?

The goals of the present study are threefold. First, it wants to assess growth curves to determine peer acceptance at the beginning of the year as well as acceptance over 3 time periods of the school year. A second goal of this paper was to determine the social skills that predict peer acceptance during the first year of formal education. Finally, it wanted to examine the effects of social skills on peer acceptance during the transition period to formal education. A main goal of this paper was to assess changes over time in social adaptation as a function of emotional and behavioral variables during the first year of entry to formal education in the Atlantico region of Colombia.

To achieve these goals, a two-level hierarchical model of acceptance was conducted. These types of analyses were employed to examine the developmental trajectory of acceptance in early childhood and to further understand the social skills that influence acceptance. This research hypothesizes that the challenges of functioning in the peer group will vary across the first year in school. Whereas capturing the attention of peers may be important at the outset of the transitional year, being seen as reliable and contributing to the functioning of the group may be more important as the school year continues. A second premise of this paper was that the importance of a particular social skill is likely to vary as a

function of other skills. Although the effect of being proactive may have an overall positive effect on peer acceptance, its importance is likely to be stronger for children who are also group oriented. Unique to this study is the use of data across the school year and assessing acceptance from a multi-level perspective.

Theoretical framework

Social skills

Social skills are a much debated and researched construct. Several definitions of children's social skills have been discussed in recent years. Social skill is defined as the ability to promote positive social interactions in an individual or interpersonal context (Lacunza & Contini, 2009; Wu *et al*., 2018) by behaviors to establish relationships with others (e.g., expressing feelings, attitudes, desires, opinions, etc.) (Konold *et al*., 2010). In this study we consider the definition of social skills proposed by Gresham and Elliot (1993) who define social skills as "socially acceptable learned behaviors that enable a person to interact effectively with others and to avoid socially unacceptable responses" (p.139), that mean behaviors that allow one to successfully initiate and perpetuate positive social interactions, such as sharing, helping, initiating relationships, and controlling one's temper. In early childhood, children demonstrate cooperation, assertive behavior, and self-control to respond to the classroom demands when interacting with teachers and peers (Stright, Gallagher & Kelley, 2008).

Social skills development is essential to acquiring social competence. Gresham and Elliott (1987) comprise social competence from two domains: adaptive behavior and social skills. Authors claim that researchers use peer acceptance indices to define if a child is considered socially skilled or not, and state that one of the biggest difficulties is to identify and specify social behaviors that result in peer acceptance. They also define social skills as situationally specific behaviors that conditionate the likelihood (maximize, maintain, or decrease) of punishment as a function of a child's social behavior. Social validity is another element of social skills that include behaviors that predict social outcomes (e.g., peer acceptance, academic achievement, teacher's perception of social skill) (Gresham & Elliott,

1987).

Many experts believe that early years are a crucial period to improve children's social skills (Sasser, Bierman & Heinrichs, 2015; Fink *et al*., 2013; Stright *et al.*, 2010). Studies (Konold *et al*., 2010) have reported that students who develop social skills show more engagement and motivation in learning environments, are abler to listen, follow directions, attend to activities and interact with teachers and peers. As mentioned, it is related to positive outcomes like academic achievement, and intellectual and behavioral development (Zhu *et al*., 2021). On the other hand, children with low level of social skills are associated with negative outcomes in their later personal adjustment, such as school maladjustment, and poor academic performance, causing children to develop social anxiety (e.g., shyness) and lack of confidence when interacting with peers (Parker & Asher, 1987; Rubin *et al*., 1998; Arnold *et al*., 2012; Zhu *et al*., 2021). Consequently, a poorer development of social competence in early childhood will contribute to greater negative consequences for the child, such as poor social skills, anxiety and depression symptoms in early adolescence and adulthood (Zahl, 2013; Karevold *et al*., 2012).

The concept of dynamics is therefore critical when discussing change or growth over time. Change and dynamics are common research foci when analyzing intensive longitudinal data where observations from multiple individuals are collected at many points in time. Modeling dynamic processes often requires the observation of the process or system over many time periods within the focal unit of analysis (e.g., children's acceptance by peers). Xu, DeShon, Dishop (2020), study conceptualization of the term dynamics and claim that it can be used to understand two processes: 1) visualizing how variables change over time, and 2) understanding growth and changes in the strength of relationships over time.

Berry and Connor (2010) provide a good example of how dynamic changes work. They studied children from kindergarten to sixth grade and found a curvilinear social skill

growth trajectory over that period, with marked acceleration growth in social skills at school entry and later elementary (i.e., between kindergarten and first grade and third and fifth grades) and a period of slight deceleration in the late elementary years (i.e., from fifth to sixth grade). Lamon and Van Horn (2013) noted similar growth in social skills from kindergarten to third grade. Collectively, both studies suggest that there is positive growth in children's social skills from school entry to the late-elementary years.

Lamon and Van Horn (2013) study specifies which social skill construct is associated with changes over time. Authors predicted trajectories that showed a small but significant amount of growth over time for assertion, responsibility, and self-control skills, except for cooperation. Their findings also suggest that the trajectories appear indistinguishable in the early years for the assertion, cooperation, and responsibility skills, because they remained stable through third grade but, in the trajectory of self-control, they found significant variation in both the overall level and rate of growth. Lamon and Van Horn's study also found that children with low trajectory for responsibility were correlated to decreasing trajectory for showing assertion, cooperation, and self-control. The latter was observed to be the skill with the lowest correlation between it and the other skills (Lamon & Van Horn, 2013).

Social Interactions are mediated by the skills that they stage when connecting or communicating with others. From a socialization theory perspective, Paulus and colleagues (2013) suggested two potential pathways to the emergence of socialization, both related to prosocial behavior in children's social environment: 1) the idea that prosocial behavior (e.g., helping, sharing) mediates affiliation with others and 2) that social environments may promote the understanding of children's emotions when interacting with peers. A study by Takahashi *et al*. (2015) found that preschool-aged children demonstrated an upward trend in every dimension of social skills during the preschool period of ages 2 to 5, showing an

increase in the frequency of prosocial behaviors. Similarly, Perolli-Shehu (2019) study found a high correlation between a child's peer acceptance and their level of development in social skills. According to the author, the most predictive factor for the acceptability of children in kindergarten was the level of child development in the area of social skills.

Authors (Fink *et al*., 2013) allude that social skills can be assessed at multiple levels of analysis including the presence or absence of specific behaviors that enable effective social interaction and the quality and success of the child's peer relationships. Similarly, McClelland & Morrison (2003) refer to two types of social behavior. The first one is related to interpersonal skills and includes behaviors such as interacting with peers, respecting other children, and altruistic acts. Whilst the second one refers to learning skills such as self-regulation, responsibility, and cooperation. Likewise, Rubin and colleagues (1998) have studied peer acceptance from two approaches: behavioral and skills (social and interpersonal). While the behavioral approach assesses what a child does within the peer group (e.g., how aggressive, cooperative, or introverted among peers), the skills approach emphasizes the child's ability to cope with particular tasks and challenges functioning within a group context.

Research on children's social skills in school adjustment has usually been conducted in the study of behavior (McClelland & Morrison, 2003). Gresham (1987) points to the behavioral aspect of social skills when he describes children's social relationships/interactions. Behavioral constructs underlie the behavior that is observed in certain situations. Social skills are a behavioral construct, which is influenced by the characteristics of the environment; skills such as asking favors from other children, playing bilaterally, and making decisions (Gresham, 1987), as well as the ability to coordinate behavior, imitation of the peer's activity, turn-taking behaviors, helping and sharing behaviors; and the ability to respond appropriately to the peer partner's characteristics are

examples in that sense (Rubin *et al*., 1998). A study of Takahashi and colleagues (2015) found that Cooperation improved by cognitive and emotional involvement, that social stimulation drives development of self-control, and that assertion enhanced by avoidance of restriction and punishment.

Similarly, two subcategories of social behavior have been identified in the literature, one that relates to learning-related social skills and one that relates to interpersonal skills (McClelland & Morrison, 2003). Learning-related behaviors is defined as those abilities that children learn in school, such as, independence, responsibility, self-regulation, cooperation, listening and following directions, participating appropriately in groups, organizing work materials, regulating their behavior, and using self-direction to complete a task (Sasser *et al*., 2015; McClelland & Morrison, 2003). These learning-related behaviors reflect an adaptive response to classroom demands and school learning tasks such as inhibiting behavior, persisting in problem-solving, making friends, and getting along with peers.

Prior research suggests that children with learning-related behaviors reflect an adaptive response to classroom demands and school learning tasks (McClelland & Morrison, 2003; Sasser *et al*., 2015; Schmerse & Zitzmann, 2021). Therefore, the consequences of children's school interactions might depend on their social capacities (Rubin *et al*., 1998; Welsh *et al*., 2016; Hernández *et al*., 2021). One study found that preschool children performed better on adaptive classroom behaviors, such as behavioral self-control, cognitive self-control, positive work habits, time off task, and engagement in learning (Rimm-Kaufman *et al*., 2009).

Social skills in early childhood

The preschool years represent an important developmental period for emerging social skills (Fink *et al*., 2013; Sasser *et al*., 2015; Zhu *et al*., 2021). In Kindergarten, when children

enter formal schooling, they establish their first friendships and acquire social skills that allow them to interact with others and cooperate during free play. Social skills are manifested in actions and a set of specific learned behaviors that promote positive interactions and enable children to learn to share, negotiate, cooperate, take turns, respect other children, consider others' perspectives (Fantuzzo, Manz & McDermott, 1998; McClelland & Morrison, 2003).

There are numerous techniques for assessing children's social skills, including observations, sociometric procedures (test and interviews) such as popularity ratings and friendship nomination, self-report, and behavior rating scales, such as SSRS-T (Social Skills Rating Systems) (Gresham & Elliot, 1990). SSRS focuses on a comprehensive assessment of social behaviors that can affect teacher-student relations, peer acceptance, and academic performance. Gresham & Elliott (1990) proposed a three-factor model of social skills represented by assertion skills, cooperation skills and self-control skills. The parent version consisted of an additional factor, ''Responsibility''. The child version contained an additional factor, labeled ''Empathy''.

According to Gresham (2001), cooperation skill refers to those behaviors that facilitate academic performance and success, such as helping others, sharing, and following rules and directions. Assertion involves behaviors that require initiation of social interactions or expression of opinions, such as introducing oneself, asking others for information and responding to the actions of others. Finally, self-control subscale includes behaviors that involve inhibition of impulses or negative behavior and covers behaviors that emerge in situations that require taking turns and compromising, as well as responding appropriately to conflict or 'corrective feedback' from an adult (Gresham & Elliott, 1990).

Indeed, research supports the association between the development of social skills and diverse positive and negative outcomes (Margetts, 2009; Karevold *et al*., 2012; Morris *et al*., 2013; Zahl, 2013; Takahashi *et al*., 2015). According to Gresham (2001), social behaviors are

essential for forming peer acceptance but are less related to factors like classroom success and teacher acceptance. To identify specific social skills that are considered most important for school success, Margetts (2009) administered the SSRS to 212 age-school children and it was completed by the child's teacher. As with the aforementioned study, Margetts found that children with higher levels of cooperation in the early weeks of schooling were likely to have high levels of social skills and academic competence at the end of Grade 5. Margetts also found that children with high levels of cooperation and the summed social skills were significantly correlated with adjustment at grade 5. In congruence, Meier, Diperna and Oster (2006) studied teachers' perceptions of the importance of social skills and concluded that cooperation and self-control skills were viewed as being more important than assertion skills.

A growing number of studies have outlined that children's social skills development was important and had individual differences during the kindergarten period (Perolli-Shehu, 2019; Sasser *et al*., 2015; Zhu *et al*., 2021). Traditionally, longitudinal studies have used variable-centered methods to examine the growth curve of children's social skills development and its relationship with its predictors of academic achievement (Margetts, 2009; Konold *et al*., 2010; Sasser *et al*., 2015; Gustavsen, 2017) and peer acceptance (Nelson, Rubin & Fox, 2005; Perolli-Shehu, 2019).

A large number of research studies, focused on identifying social skills that lead to increased levels of acceptance in children, have found that children with high scores in social skills are more likely to be accepted in the group, whereas children with low scores are positively correlated with rejection in the group (Perolli-Shehu, 2019). Besides, these findings showed that the most predictive factor for the acceptability of children in kindergarten was the level of child development in the area of social skills. Consequently, previous studies have found gender differences in children's social skills development (Konold *et al*., 2010). Konold and colleagues administered SSRS to 1,102 children and it was

completed by the child's mother and teacher. As with the aforementioned study, Konold's study reported differences in social skills between boys and girls. Social skills account for proportionate levels of academic achievement growth and were greater for girls than boys. Teachers perceived better social skills in girls and reported to have high levels of social competence, allowing them to take full advantage of the different opportunities the classroom provides.

Peer relationships in early childhood

Developing and maintaining friendships, being liked by peers, and social behavior with peers are important developmental tasks of childhood (Cillessen & Mayeux, 2004; Rubin, Bukowski, & Bowker, 2015). As children go into childcare, they are progressively introduced to a wider and diverse group of friends and adults that allow them to develop reciprocal relationships. Through one's interaction with a friend, children have opportunities to develop positive and stimulating experiences, and learn how a partner is seen by a caring and equal other (Bukowski & Sippola, 2005). In a sense, experiences with peers constitute an important developmental context for children throughout life.

Interaction can be defined as the "social exchange of some duration between two individuals" (Rubin *et al*., 1998, p. 576). Rubin and colleagues (1998) mention different levels of analysis of interaction systems that include individual characteristics, social interactions, dyadic relationships, and group membership and composition. Interaction and relationship can also be studied regarding their quality, frequency, and antagonistic behaviors (Rubin *et al*., 1998; Endedijk *et al*., 2020). It includes children playing together and engaging with one another during free play, some examples include sharing toys, taking away toys, reclaiming, turn-taking, etc. The opposite would be passive play, such as sitting in front of a video game, computer, or TV, or children playing on their own.

A critical element in children's development is the ability to establish positive peer relationships (van der Wilt *et al*., 2019). Peer relationships are defined by their peers' group sympathy and acceptance (Lansford *et al*., 2014). peers' acceptance is formed by their social acts with others and depends on their experience (Li *et al*., 2021). In early childhood, such interactions make possible participation in kindergarten workgroups and creation of solid relationships, which are crucial aspects of their social development (Quinn & Hennessy, 2010; Zhang *et al*., 2014) and adaptation to new environments (Perolli-Shehu, 2019). Moreover, Plötner *et al*. (2015) claim two ways in which children can relate and create connections with other people: cooperation and self-recognition. The first one refers to how a child collaborates with a person to achieve a shared goal. Whilst the second one involves recognizing both peers partake in the same social group (Plötner *et al*., 2015).

On the other hand, authors claim that children's peer experiences can be divided into several levels of analysis: individual characteristics, social interactions, dyadic relationships, and group membership and composition (Zhang *et al*., 2014). Likewise, according to Quinn & Hennessy (2010), children's relationships with peers can be categorized into two groups: peer-group relationships (companionship) and dyadic peer relationships (such as mutual friendship and best friendship). Peer group relationships are understood as the system where children bring various behaviors, needs, and cognitions into their peer experiences at the dyadic and group level (Rubin *et al*., 1998). Whereas dyadic interactions implicate more frequency of spending time together, closeness, and reciprocity.

An observational study made with children showed that dyadic interaction quality (more affiliative behaviors and fewer antagonistic behaviors) with a peer in early childhood were more preferred by their first classmates later (Endejik *et al*., 2020). It shows the impact of dyadic relationships and cooperative behaviors on group acceptance. These skills and behaviors aid children to initiate and maintain dyadic relationships with nonfamilial others.

Likewise, these dyadic interaction and experiences are predictor of adaptive outcomes in the social sphere (e.g., gaining acceptance by peers). Evidence has suggested that children who receive more nominations as best friends are more accepted by their peers, tend to have more positive dyadic friendships (Lansford *et al*., 2014), and academic success (Vitaro *et al*., 2012).

In this study, social preference (sometimes called "acceptance" or "likability") and popularity are other important terms to understand when analyzing peer relationships. Although acceptance and popularity are related because share certain skills and characteristics, they are distinct constructs of social status and reflect distinct ways of being s (Parkurst & Hopmeyer, 1998; Van den Berg *et al*., 2017). Social preference or acceptance is a measure of how well-liked and preferred a child is by their peers. Conversely, popularity refers to how popular peers perceive a child to be. Children who are accepted possess positives behaviors (e.g., prosocial and cooperative acts) that aid them to be like by peers, while popularity is associated with positive but also negative behaviors (e.g., aggressive and manipulative behaviors) that lead them to make them to be notice and to be central in the group (Mayeux, Houser, & Dyches, 2011).

Well-accepted children are skilled at paying attention to peer and promote interaction with them, which contributed to peer preference in these classrooms (Van den Berg *et al.*, 2017). While a popular child may also possess the ability to being interpersonally effective and to achieve their goal in social situations, they can also be described as controversial, aggressive, dominant, manipulative (LaFontan & Cillessen, 2002). Yet, a popular child is not necessarily well-liked and children who are well-liked by their peers are not necessarily popular (Cillessen & Mayeux, 2004, Van den Berg *et al.*, 2017). For example,
a study by Van der Wilt *et al*. (2019) found that while rejected children seem to be less sociable, they also show lower levels of aggression compared to other popular children.

Moreno's (1934, see Cillessen & Bukowski, 2000) argued that human behavior must be understood in terms of the social contexts and groups in which individuals' function. His emphasis proposed dimensions of ways on how others view individuals in the group and how individuals view others in the group. In other words, how an individual can see others or how an individual is seen or perceived by others. Thus, the author has emphasized two dimensions of judgment and responses: attraction and repulsion (see Cillessen & Bukowski, 2000). He defined attraction as "positive forces that bring persons together" (p.2) and repulsion as negative forces that separate persons (Cillessen & Bukowski, 2000). This means that persons would feel either repulsed or indifferent. In this regard, peer acceptance refers to the degree to which children are liked (social preference) and noticed (social impact) by their peer group; and rejection refers to the degree to which children are disliked by members of the peer group (Bukowski *et al*., 1993).

Historically and currently, peer acceptance and rejection have been measured with a sociometric method (Zhang *et al*., 2014; Bukowski, Cillessen, & Velasquez, 2012). Acceptance (i.e., desirability as a social partner) is assessed by the number of positive nominations (liked most) a child received and how few negative nominations (high impact, high preference) are received (Rubin *et al*., 1998; Cillessen & Bukowski, 2000; Bukowski *et al*. 2000; Laursen *et al.*, 2007; Rubin *et al*., 2015). Whereas rejection (i.e., undesirability as a social partner) is measured by the number of negative nominations (like least) a child received according to the class number and few positive nominations (high impact, low preference) (Rubin *et al*., 1998; Cillessen & Bukowski, 2000; Laursen *et al*., 2007; Rubin *et al*., 2015). In other word, acceptance indicates that positive peer evaluations assess acceptance, while negative peer evaluations assess rejection within the group.

Peer relationships and social skills

Acceptance in the peer group can also be related to social abilities. According to Fantuzzo and co-authors (1998), it refers to how liked and accepted a child is perceived to be. Acceptance can be positively or negatively associated with children's social skills and interactions in school (Eggum-Wilkens *et al*., 2014; Van den Berg *et al*., 2017). Accepted children show cooperation skills when interacting with peers (e.g., building a block tower or moving an object together). Furthermore, they feel more comfortable at school with their group.

A study of Stormshak and colleagues (1999) used hierarchical linear modeling to compute four behavior problems as predictors of peer preference. Results show negative direction in the acceptability of behavior problems (aggression, withdrawal and inattentive/ hyperactive behavior) and positive direction in the prosocial behavior (i.e., social abilities) in their association with peer preference across classrooms. In congruence, studies also have shown that preschoolers who are emotionally regulated and unsociable are more likely to show self-control and regulate negative emotions; whereas children who are unregulated and sociable are more likely to react in an aggressive way than unsociable children (Sette, Spinrad & Baumgartner, 2013; Rubin *et al*., 2015; Van den Berg *et al*., 2017). Collectively, findings show that a child's tendency to emotional dysregulation and unsociability causes or leads distant responses among children.

Studies have found that children who are accepted and show a higher peer likability, possess high levels of children’s social skills and prosocial behaviors (Sette *et al*., 2013) and reflect distinct ways of being socially competent and successful among peers (van den Berg *et al*., 2017). These findings highlight the importance of children having other-oriented skills and behaviors to develop positive relations with their peers. Accepted children possess more social skills, are well-developed, and show problem-solving skills than rejected children.

A study by Sette and colleagues (2013), shows that social skills were positively correlated with closeness and peer likability. They found that children who show fearfulness and anxiety may be less likely to engage in cooperative play, which may lead to peer rejection (Sette *et al*., 2013). Likewise, a longitudinal study of Vitaro et tal. (2012), which sought to examine how different types of negative social experiences in kindergarten relate to school performance, shows that victimized children (children who have no friends) have been shown to be prone to emotional problems. Rejected children are more likely to feel bored, lonely, sad, and uncomfortable within the classroom, due to their less sociability with their peer group (van der Wilt *et al*., 2019). Collectively, studies show that when children show behavioral inhibition, do not approach or establish contact with their peers, they will be rejected by them, which will result in negative emotional problems in the short or long run.

Transition to formal schooling and child adjustment

The transitions represent a period in the life of a child that is unique, complex, and multifaceted, originating in a whole host of changes-biological, developmental, and social. Studies of early childhood education defined transition as changes from one context to another (Tomada *et al*., 2005). The change from home to school can be considered as an ecological transition and provide new opportunities for growth and children's developmental trajectories. It involves acquiring new roles, having many expectations, relating to other people with different personalities (peers and teachers). These changes should be progressive because changing environments generally cause disruption in social regularities, resulting in disturbances in trajectories across a broad range of developmental domains.

For ages 4 to 7 years, the transition to school marks an important and difficult moment due to the adjustment phase that they must go through (Schmerse & Zitzmann, 2021). Starting a new school is a challenge for students because they have many expectations

related to their experience in the school, about the teacher, and particularly about friends they are going to make there. According to Rimm-Kaufman and Pianta (2000) “kindergarten is a different environment than preschool or home” (p.493). The transition to formal schooling requires children to rapidly adapt to changing academic demands, routines, and new social and physical environments (Rimm-Kaufman & Pianta, 2000). Then, kindergarten implies new goals, less freedom, and more demands because students are expected to learn to write, read, to acquire social skills (e.g., self-regulation, companionship, sharing, etc.).

Research on this transition and on developmental changes of interactions in the kindergarten classroom environment have focused on the child’s academic progress rather than its impacts on children’s adjustment. Research on transition and school adjustment have focused on academic outcomes (listening to teacher, completing tasks, and complying with teacher directions) and characteristics of individuals and families rather than socio-emotional and behavior as causal factors in children's adjustment to schooling context in which such adaptation takes place (Perry and Weinstein, 1998). Others focused on studying individual differences (e.g., developmental stages), children’s expectations (Welsh *et al*., 2016), and disruptive or unusual behaviors challenging the teacher's authority and disturbing the classroom ecology (e.g., cheating, stealing, or defying the teacher), and the impact on the transition to kindergarten and later successful adjustment.

The influence of peer relationships during the transition to kindergarten is complex. Studies show that children express feelings of excitement and anxiety about making new friends before starting a new school (Rimm-Kaufman & Pianta, 2000; Smyth, 2016). This is due to new teachers, new subjects, but above all for making new friends. The development of children’s social competence during the transition to kindergarten provides a foundation for children’s later functioning across peer and school contexts (Blandon, Calkins & Keane, 2010). Those children whose transitions to kindergarten are positive tend to excel socially

and academically later in school. In this sense, children's abilities to adapt to this change in priorities will influence their schooling careers, which will affect their school achievement, and subsequent life-long consequences. In kindergarten, parental sensitivity and stimulation, discipline, groupings, class size, and qualities of peer relationships (e.g., a child knows other children in their incoming class), among others, are measurable factors on children's academic performance and adjustment to school (Rimm-Kaufman, 2000; Morris *et al*., 2013).

Mashburn & Pianta (2006) studied school readiness understood as the competencies (e.g., academic and cognitive skills, language and literacy abilities, social-emotional functioning) that children have when they enter school. The authors mentioned emotional competencies conditions that are considered when children enter kindergarten: regulation and inhibition, formation of effective attachment relationships with adults. From this perspective, the adjustment progress includes interactions and transactions among people (children, teachers, parents, and other caregivers) and settings (home, school, and childcare), it is important how these operate to support or inhibit the development and transformation of children's competences (Mashburn & Pianta, 2006).

Social Skills and peer interactions during the transitional year

Within this framework, transitions may prove especially advantageous times during which to alter children's developmental trajectories, in particular, alter children's social skills trajectories in the pre-kindergarten and kindergarten years. Studies have contributed to the understatement of child development during the transition into formal schooling and during school adjustment. For example, a US longitudinal study (Morris *et al*., 2013) that examine the relative importance role of effortful control and socioemotional adjustment (behavior problems and peer rejection) in the academic adjustment at seventy-four 5- to 6-year-old kindergarten children, found that effortful control was significantly related to lower behavior

problems (externalizing and internalizing) and peer rejection.

Adaptive behavior can be defined by the effectiveness to which children adapt to school social (and academic) standards (Margetts, 2009). Children's adaptive classroom behavior has been linked to achievement in kindergarten, therefore is crucial for later growth and development (Rimm-Kaufman *et al*., 2009). Authors (Margetts, 2009) highlight the relevance of social skills and adaptive behaviors on school adjustment and the way that emotional difficulties or social outcomes in the early years of schooling (e.g., peer acceptance, interpersonal behavior, self-related behavior, and communication skills) persist through school and into adolescence.

Authors also suggest that "increased levels of peer relationship problems in preschool impede children's social integration into settings of formal schooling in Grade 1" (Schmerse & Zitzmann, 2021, p. 9). Therefore, children's abilities stand out as a critically important skill to ensure children's school functioning and adjustment. Schmerse and Zitzmann (2021) claim that children's adjustment is determined by skills (managing attention, emotions, and inhibiting behavior) that facilitate children to adapt to school. Likewise, measures of peer relations are also associated with measures of adjustment. In addition to learning to recognize and control their own emotions, children "must be able to recognize and react to the emotions of their peers in order to get along with their classmates" (Morris *et al*., 2013, p. 815).

In this regard, peer relationships assume an important role in children's adjustment very early in schooling. According to Bagwell and co-authors (2001), "peer relations provide direct and indirect benefits that implicate an influence on adjustment" (p. 30). These studies together demonstrate that the quality of peer experiences determines a child's personal and social adjustment to school. Authors (Perry & Weinstein, 1998; Buhs & Ladd, 2001) suggest that peer likability and rejection are related to children's academic adjustment, school liking, and school engagement. The experience of rejection has devastating effects on a child's

future development (van der Wilt *et al*., 2019). Bagwell and colleagues (2001) claims that "rejected and friendless children lack support from a strong social network and thus may be vulnerable to other stressors" (p.29). Students who are rejected by their peers receive negative peer treatment than do their more accepted classmates. The feeling of being unwanted in the group causes fear, anxiety, the child is reluctant to join activities and feels isolated.

Studies have explored the relationship between early school adjustment and progress in kindergarten. Authors (Perry & Weinstein, 1998) highlights the impact of children's ability to make new friends on adjustment outcomes in kindergarten. A study by Ladd (1990) illustrates that even during the early grade school years, classroom peer rejection assumes an important role in children's adjustment (i.e., children's school attitudes, school engagement) very early in schooling. Specifically, found differences in adjustment of children who accepted, showed greater academic gains, and those who were rejected, showed behavior problems and lower academic achievement in the 1st year of school. The same author claims the beneficial effects that friendships can have on children's development and school adjustment outcomes (Ladd, 1996). Therefore, children who are perceived by their friends as personal support, feel happier in school, offer interpersonal aid (e.g., help with problematic social situations), and develop positive school attitudes.

There is evidence that well-functioning peer relationships in early childhood contribute to the more favorable school perceptions of peers and predict positive school adjustment in kindergarten. A more recent study by Ladd, Herald-Brown and Reiser (2008), supports the impact of peer rejection and non-rejection on children's adjustment. These findings suggest that non rejected children manifest more positive growth than children who are rejected by their peers, showing changes in their independent and cooperative participation.

Method

Type of Research

Quantitative. Using variables from an existing longitudinal data set, quantitative forms of analyses were conducted. To identify the social factors that contribute to social acceptance in the first year of school for children who come from low-income and high-risk conditions, a quantitative type of research is developed, which allows testing objective theories through analysis of the relationship between variables (Creswell, 2014). Quantitative research provides opportunities for hypothesis testing. In this process, alternative explanations are controlled, and the researcher can generalize and replicate the results (Creswell, 2014).

Research Design

In this research, a longitudinal design was used to follow a group of children in the first year of formal education from the beginning to the end of the school year. According to Laurie & Sullivan (1991), a longitudinal study makes it possible to follow transitions between different circumstances in a specific environment and to relate these changes to other areas of people's lives. The processes of children's adaptation to school provide a better view of this phenomenon than a static picture taken at a particular stage of life. Bearing this in mind, this three-term longitudinal research sought to examine social adjustment to school over the first 20 weeks of the academic year. Furthermore, this study employed a growth curve modeling approach to simultaneously analyze factors that predict success within the peer group at the beginning and over the year.

Participants

Participants were 498 kindergarten children from 12 different schools in Barranquilla, who were entering the first year of formal education. Participants ranged in aged five and six-year-old children. A majority of the participants were female (58,4%) and 41,6% were male. Permission was obtained by parents as their children entered Kindergarten. Parents were informed of the purpose of the research and given an opportunity to express questions or concerns. The ethnic and socioeconomic composition of the 498 children in this study remained representative of the school districts selected.

Measures

Peer rejection and acceptance. A sociometric nomination procedure was used to measure peer rejection and acceptance (Bukowski *et al*., 2012). Children were asked to identify the classmates whom they liked the most and considered their best friends and those they liked the least. The children could name as many or as few classmates as they wanted for each question. Both same-gender and other-gender nominations were allowed. Children were not allowed to nominate themselves. The number of times a child was chosen as a friend was used as the measure of peer acceptance and the number of times a child was chosen as a least liked peer was used as the measure of peer rejection.

Social Skills. The Social Skills Rating System Teachers Version (SSRS-T, Gresham & Elliot, 1990) instrument was used during the development of this research. This scale had been developed as a means of assessing multiple domains of social skills in young children. The SSRS consists of 30 items. The frequency items constitute three-factor analytically derived subdomains each comprised of 10 items: assertion (e.g., invites others to join in activities, appropriately questions rules that may be unfair), self-control (e.g., receives

criticism well, responds appropriately to peer pressure), and cooperation (e.g., ignores peers' distractions when doing classwork, finishes class assignments within time limits). These factors positively correlated with the child development scale (Anme *et al*., 2013), which is based on the social skills rating systems (SSRS) (Gresham & Elliot, 1990). Items are rated on a three-point scale (0, 1, 2), according to whether it is applied to the child "never", "sometimes" or "always". factors. Included in Table 2 are the structure coefficients assigned to items in the factor analysis and alpha coefficients for each subscale (i.e., cooperation, assertion, and self-regulation).

Procedures

Initially, the purposes and procedures of the study were described to the potential participants' parents at meetings at the children's schools. Parents were asked to sign a consent form indicating their willingness to allow their child to participate. Typically, the children did not know each other before entering school.

Participants were assessed at three time points over 20 weeks. Time 1 took place during the fifth week of the school year, time 2 took place at week 16th, and time 3 took place at approximately week 26th. Each time (T1, T2, T3) was separated by ten weeks.

Data Analysis

Multilevel analyses were used to examine the degree to which social skills were antecedents of peer acceptance across the first year of formal education. In this study, growth curve analyses were conducted using hierarchical linear modeling (HLM) (Raudenbush, Bryk, Cheong, Congdon, & du Toit, 2006). Growth curve analysis is a multilevel regression procedure ideally suited for the analysis of longitudinal data (Wright & Bukowski, 2020). It creates an individual growth curve for each participant in a sample. These individual growth

curves provide a direct index of change for each child in the study. Each child's growth curve includes an "intercept" and a "slope." The intercept is an index of the child's score at the initial assessment. The slope is an index of how much the child changes over time. One can also assess whether the intercepts and slopes are fixed (i.e., the same for all children) or "random" (i.e., that they vary from one child to another). When multilevel modeling is used in conjunction with growth curve modeling one can assess hypotheses about the variables that account for between-person variance in the intercepts and the slopes of the children's growth curves. In this way, this approach can examine both intra-individual change and interindividual differences in such change (Kristjansson, Kircher & Webb, 2007).

Results

Descriptive Results

Table 1. Descriptive statistics

Children n= 498		
	n	**%**
Female	207	41,6
Male	291	58,4
Classroom n=17	**Class size**	
	n	**%**
Classroom 1	29	5,8
Classroom 2	30	6
Classroom 3	36	7,2
Classroom 4	32	6,4
Classroom 5	29	5,8
Classroom 6	31	6,2
Classroom 7	30	6
Classroom 8	31	6,2
Classroom 9	28	5,6
Classroom 10	33	6,6
Classroom 11	30	6
Classroom 12	27	5,4
Classroom 13	28	5,6
Classroom 14	27	5,4
Classroom 15	34	6,8
Classroom 16	25	5.0
Classroom 17	18	3.6
Schools n=7	**SEAS**	
	n	**%**
1	2	28,7
2	4	57,1
3	1	14,2

Descriptive statistics are shown in Table 1. The first section of the table presents information about the classroom-level variables for the full sample. The sample consisted of 41,6% girls (n=207) and 58,4% (n=291). The second part of the table presents the class size per each of the 17 classrooms included in the study. The minimum number of students per class was 18, the maximum was 36, and the mean class size for the sample was 29,81. For

this study it was considered schools of SES 1 and 2, which had the "transition" grade in the city of Barranquilla. The SES varies according to the location of the school. In Colombia, the strata are defined by taking into account the average characteristics and conditions of the environment in which they are located (e.g., physical characteristics of houses, zoning of homogeneous physical (land use, roads, services, topography. etc.) and economic areas) (DANE, 2015). The socio-economic stratification system validly classifies the zones into six different categories numbered 1 to 6, for which ascending numbers signify increased quality. Therefore, Strata 1 correspond to those of lesser quality and strata 6 to the best conditions. There were a total of seven (7) public schools included in the study, two (2) schools located in strata 1 (28,7%), four (4) in strata 2 (57,1%) and one (1) in strata 3 (14,2%).

Measurement Model for the Social Competence Scores

Table 2. Rotated component matrix for SSRS (varimax)

SSRS items	Factors		
	F1	F2	F3
6- Attempts classroom tasks before asking for your help.	0,398	0,448	**0,496**
10- Produces correct schoolwork	0,314	0,143	**0,77**
16- Uses time appropriately while waiting for your help.	0,677	0,228	**0,362**
22- Finishes class assignments within time limits.	0,026	0,23	**, 848**
8- Gives compliments to peers.	0,283	**0,793**	0,005
11- Helps you without being asked.	0,21	**0,634**	0,281
25- Invites others to join in activities.	0,089	**0,718**	0,206
14- Cooperates with peers without prompting.	0,592	**0,63**	0,043
15- Waits turn in games or other activities.	**0,777**	0,184	0,139
20- Controls temper in conflict situations with peers.	**0,714**	0,24	0,185
21- Follows rules when playing games with others.	**0,743**	0,208	0,151

Reliability (alpha)	.843	.852	.859
Items deleted			
18- Uses free time in an acceptable way.	**0,514**	-0,065	0,494
19- Acknowledges compliments or praise from peers.	**0,688**	0,44	0,1

Note. Factor loading >30 are in boldface. SSRS= Social Skill Rating System.

A three-stage approach was used to explore the factor structure underlying the 30 SSRS items. Although there was a hypothesized factor structure, the study opted for a particularly stringent approach to assessing the presence of the expected three-factor models and began with exploratory factor analysis. Then, confirmatory factor analyses, conducted with Mplus (Muthén & Muthén, 1998-2008), were used to assess the hypothesized three-factor structure. Three principles were used to guide the selection of the final set of items for each factor. They were to (a) maximize the correlations within the scales (i.e., increase within-factor homogeneity), (b) minimize the correlations between the scales (i.e., decrease between-factor correlation), and (c) create internally reliable factors. For each scale items were chosen so as to meet these criteria. Factor 1, which is labeled "self-regulation" included Items 15, 20 and 21. Its reliability, as measured by Cronbach's alpha, was .84. Factor 2, which was labeled as "assertion", included Items 8, 11, 14 and 25 (alpha = .85). Items 6, 10, 16 and 22 were observed to be on Factor 3 which was labeled as "Cooperation" (alpha = .85). Factor loadings are shown in Table 2.

Statistical Analysis / Hierarchical Linear Modeling

A two-level hierarchical model was conducted with HLM 6 (Raudenbush *et al*., 2006) to examine the associations between acceptance and social skills variables. The analyses began with a level 1 model in which a growth curve was estimated for every child. These

growth curves showed how much each child's level of peer acceptance changed across the four waves of the study. Next a level 2 model was used to assess how variance in the intercepts and slopes of children's growth curves was predicted by the measure of social competence.

The Level 1 model included the intercept (B0) and the slope (B1) indicating the degree of change over time in the child's level of peer acceptance, and error (R). The level 1 equation can be stated as follows:

$$Y = B0 + B1*(TIME) + R \quad [1]$$

Next, time-invariant measures of social competence were entered into a level 2 model to account for variability in the intercept and the slope. The T1 measures of social competence were entered as univariate effects and as interactions to account for variability in the intercept. The T1 and T2 measures of social competence were entered as univariate effects and as interactions to account for variability in the slope. Specifically, T1 predictors of the intercept were the measures of cooperation, assertion, self-regulation, and the interactions between cooperation by assertion, cooperation by self-regulation, and assertion by self-regulation. These same T1 measures and the corresponding T2 measures were used as predictors of variance in the slope.

The final level 2 equations for the intercept (B0) and slope (B1) were as follows:

$$B0 = G00 + G01*(T1\ cooperation) + G02*(T1assertion) + G03*(T1self\text{-}regulation) + U0$$

$$B1 = G10 + G11*\ (T2\ cooperation) + G12*(T2\ assertion) + G13*(T2\ cooperation\ by\ assertion) + G14*(T2\ cooperation\ by\ self\text{-}regulation) + U1 \quad [2]$$

Level 1 Model. In the Level 1 model time was used as the sole predictor. The coefficient of time was positive indicating that acceptance increases across time among children. The intercept and the effect of time (i.e., the slope) were observed to be random which indicated that these effects varied across the participants (X^2= 1253.98, p=0.000 and X^2= 601.74, p= 0.001, respectively).

Level 2 Model. Next, the Level 2 measures were used as predictors of the variability in the intercept and slope observed at Level 1. All coefficient values for the entire model are summarized in Table 4.

Table 3. Coefficients for Predictors in the Two-Level Hierarchical Linear Model of Acceptance (with robust standard errors)

Outcome	Predictor	Coefficient	SE	*t* Ratio	*P* Value
Intercept		3.079	0.097	31.69	0.000
	T1 Cooperation	**1.682**	0.252	6.67	0.000
	T1 Assertion	-0.033	0.291	-0.11	0.910
	T1 Self-regulation	**-0.697**	0.292	-2.38	0.018
Time Slope		-0.045	0.052	-0.88	0.380
	T2 Cooperation	0.288	0.248	1.16	0.247
	T2 Assertion	-0.353	0.241	-1.46	0.144
	T2 Cooperation by Assertion	**0.294**	0.166	1.76	0.038
	T2 Cooperation by self-regulation	**-0.273**	0.120	-2,26	0.024

Effects on the intercept. The effects on the intercept were modeled first. The intercept was significantly associated with the T1 measures of cooperation (unstandardized coefficient = 1.68, standard error = .252, t = 6.67, p < .001) and self-regulation (unstandardized coefficient = -.697, standard error = .292, t = -2.38, p < .02). These findings indicate that higher scores on this social competence (i.e., cooperation) are associated with a higher initial level of acceptance whereas lower scores in self-regulation is associated with a

higher initial level of acceptance. In contrast, T1 measure of assertion showed a negative and non-significant effect on initial level of acceptance (unstandardized coefficient = -.03, standard error = 0.291, t = -.11, p < .91). Therefore, assertion skill is not expected to predict acceptance at the outset of the transition period.

Effect on the slope. Overall, the slope for time was negative and statistically nonsignificant. The slope of time was predicted by none of the T1 measures and none of the individual T2 variables. It was however, predicted by the interaction between cooperation and assertiveness (unstandardized coefficient = .294, standard error = .166, t = 1.76, p < .038) and between cooperation and self-regulation (unstandardized coefficient = -.273, standard error = .120, t = -2.26, p < .024). The positive value of the coefficient for the interaction between cooperation and assertiveness indicates that each of the two individual variables strengthens the effect of the other variable. That is, the effects of cooperation on the slope of peer acceptance will be higher for children with higher levels of assertiveness and the effects of assertiveness on the slope of peer acceptance will be higher for children with higher levels of cooperation. In contrast, the negative value of the coefficient for the interaction between cooperation and self-regulation indicates that each of the two individual variables weakens the effect of the other variable. That is, the effects of cooperation on the slope of peer acceptance will be weaker for children with higher levels of self-control and the effects of self-regulation will be more negative for children with higher levels of cooperation.

Interactions between social skills on acceptance

Simple effects tests were used to clarify the two interactions predicted in the slope, specifically the interactions between cooperation by assertiveness and cooperation by self-regulation. To understand the values for the effects of time, four hypothetical combinations were created. Growth plots were constructed to display these effects more concretely. These

trajectories represent the four possible sub-groups of prototypic children: 1) High cooperation with high assertiveness, 2) high cooperation with low assertiveness, 3) low cooperation with high assertiveness, and 4) low cooperation with low assertiveness. A clarification of the interaction between cooperation by assertiveness predicting acceptance is shown in Figure 1. The first condition shows a substantial increase in acceptance levels. This implies that having high level of cooperation and high levels of assertiveness predicts an increased level of acceptance. The second combination shows a modest increase in acceptance and indicates that cooperative skills are important even in the absence of being assertive. A child being low in cooperation but high in assertiveness predicts lower levels of acceptance, as well as being low in assertiveness and low in cooperation. This finding indicates that low levels of cooperation predict lower levels of acceptance across the school year.

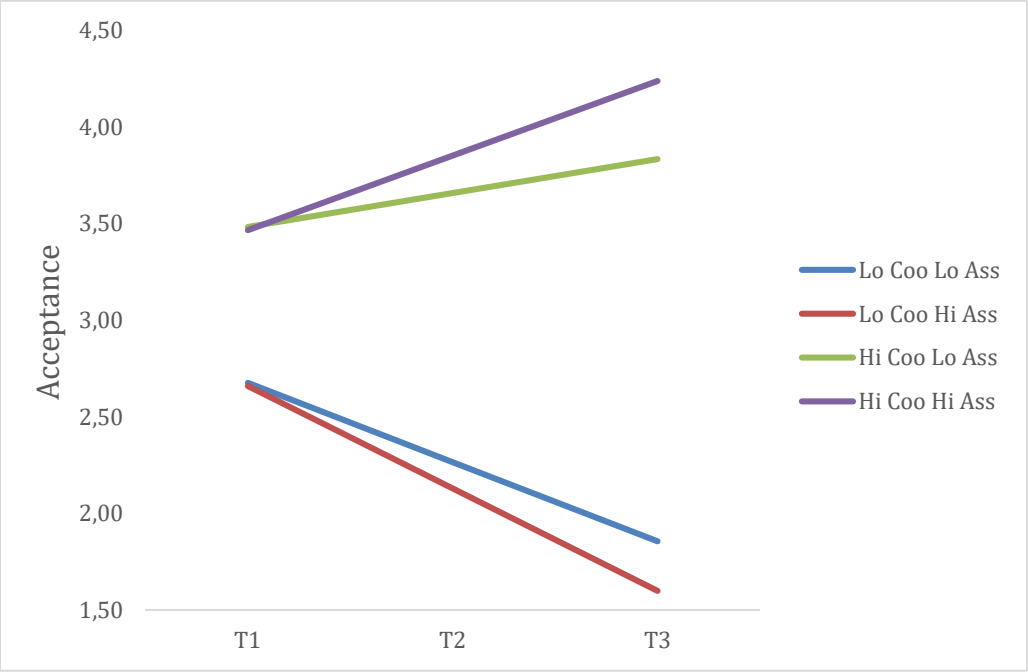

Figure 1. Growth curve on the measures of Cooperation (Coo) and Assertion (Ass) on acceptance across time.

The effect of the interaction between cooperation and self-regulation on acceptance trajectories is also represented in four prototypic children: 1) High cooperation with high self-

regulation, 2) high cooperation with low self-regulation, 3) low cooperation with high self-regulation, and 4) low cooperation with low self-regulation. As noted in figure 2, high levels of cooperation and high levels of self-regulation predict an increase in acceptance levels. That is, having cooperative skills in the classroom and being well-regulated lead to increment levels of acceptance. Similarly, having high levels of cooperation and low levels of self-regulation predict a stable acceptance level. This effect implies that being high cooperation is useful even in the absence of self-regulation. The more unfavorable condition is being low in cooperation and high in self-regulation, as it predicts lower levels of acceptance. This indicates that if a child does not cooperate with others and is overregulated, they will be less accepted by peers.

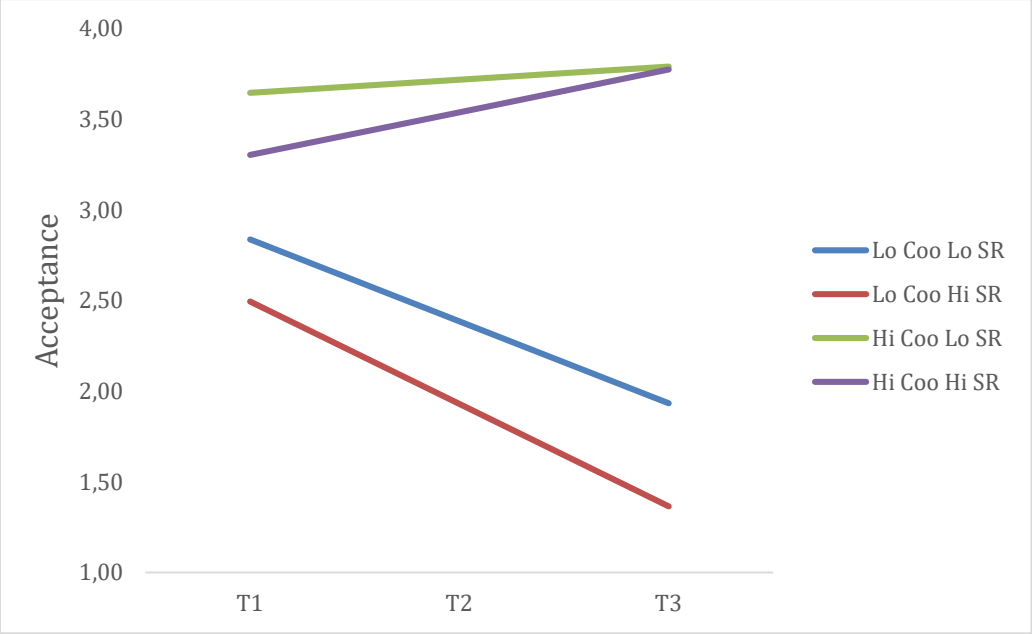

Figure 2. Growth curve on the measures of Cooperation (Coo) and Self-regulation (SR) on acceptance across time.

Discussion

The purpose of this study was to assess how aspects of social competence are associated concurrently and predictively with children's acceptance by peers. Using a four-wave longitudinal study, growth curve modeling was used to predict changes in the degree to which changes in peer acceptance were related to specific forms of social competence during the first year of formal education. Kindergarten marks a crucial time in students' lives, setting the foundation for not only academic skills but also the behavioral expectations that allow them to succeed. Therefore, an essential question regarding the adaptative transition into formal education concerns the skills that children need to function competently with their peers. The present findings extend the current literature which mostly examines the individual contributions of a child's skill score to predicting acceptance (e.g., Nelson *et al*., 2005; Perolli-Shehu, 2019) by determining how these skills predict changes across time. Moreover, it furthers the current understanding of the developmental trajectory of peer acceptance by demonstrating how acceptance varies across the transition into formal schooling. These findings also highlight the importance of understanding how a particular skill factor is moderated by other skills.

The current study of the factors that predict children's success in becoming a liked member of their peer group in the new school context was predicated on two basic premises. The first is that functioning with peers requires skills needed to successfully initiate and perpetuate positive social interactions. These skills will vary across the first year in school. Whereas cooperation skills were observed to be a predictor of both the intercept and the slope (i.e., with change over time), self-control was observed to be associated only with the intercept and assertion with the slope.

Although the effects of the measure of cooperation were observed to be stronger than the other factors on the intercept, it did not show a significance on the slope. Cooperation

skills were expected to predict acceptance at the outset of the transition period and to predict changes across the subsequent time of the transition. However, results showed that the effect of cooperation was smaller during the school year than at the outset of the year, indicating that cooperative behaviors (e.g., helping others, sharing, etc.) were observed to be more appreciated within the peer group at the beginning of the transition period. Thus, having skills that promote good habits in the classroom, engagement in cooperative play, and positive interactions allows children to be liked by their peers upon entry to school and to augment their acceptance in the peer group as the year continues. This finding may indicate that by acting in ways that are cooperative children increase their visibility within the peer group. In contrast, self-control was expected to predict acceptance at the beginning of the transition. However, the negative coefficient for the association between self-regulation and the intercept for the growth curve indicated that, at the very beginning of the school year, children who are over-controlled do not elicit acceptance from peers.

The relative strength of the effect of cooperation is consistent with prior reports that peer acceptance derives in part from the tendency to work collaboratively in group activities and that acceptance is positively associated with working harmoniously and productively with classmates (Ladd *et al*., 2014). These findings also contrast with Endedijk and collegues (2020) who found that peer cooperation in early childhood is related to a tendency for children to be more preferred by peers. In contrast, the present observation that self-control is a less powerful predictor of acceptance is not inconsistent with claims that self-control is a critical antecedent to multiple forms of adjustment (Blair, 2002, 2003; Blair & Diamond, 2008; Rimm-Kaufman *et al*., 2009; Schmerse & Zitzmann, 2021). Instead, they show that the importance of self-control varies as a function of contextual demands. Similarly, it is not totally consistent with the study of Meier and colleagues (2006) which determined that teachers attribute greater importance to children's self-control than their cooperation abilities.

The second premise of this work is that the importance of a particular social skill is likely to vary as a function of other skills. Multilevel modeling was also used to assess the association between the three social competence indices on the measure of acceptance. Thus, this study is unique in its assessment of social skills measures at different levels, as it not only analyses patterns of change and individual predictors of changes (McClelland & Morrison, 2003; Meier *et al*., 2006), but analyze a more complex dynamic model of social competence. In the case of this work, it involves interactive relations between growth parameters of social skills. Perhaps most impressively, the findings show that the significant effects on the slope are not each social skill factor as an individual predictor, but the interplay between the factors (except for assertion by self-regulation). The association between these factors showed a significant effect of change across the first year of school and varied across the participants. Although the present findings appear to indicate that control skills and assertion skills may be less important than cooperation skills, a particular strength of these results was the demonstration that the study of the interaction between these skills can predict a more powerful effect on acceptance by peers during the transition period.

The use of hierarchical linear modeling techniques facilitated the exploration of the hypotheses of the investigation. The findings from this study show clearly that the strength of the associations between social skills indices among kindergarten children vary as they function on each other. These findings demonstrate that one cannot make undifferentiated claims about the social skills that are linked to acceptance, but rather must recognize the possible interactions or combinations between each other that a child may show in the classroom. Therefore, the present study proposes analyzing social competence on a dynamic model. This form of analysis will allow us to thoroughly explore all the possible ways that social competencies can be presented in children. Xu and colleagues (2020) support this alternative and argue that modeling interactions among factors in longitudinal studies can be

a useful tool in representing true-life scenarios (in applied psychological research). Multilevel methodologies have not been incorporated in similar analyses to explore whether the interaction among different social skills variables can explain the variability in children's level of acceptance. Results show that in general, this approach works well and could be used as an alternate if desired.

The interactions studied between one factor with each other represent a joint and concurrent change in each child. In the example of social competencies, this would mean that the effect in a determinate factor is monitored by the effect in another factor. The group of combinations that showed an effect on acceptance across the school year were cooperation by assertion, and cooperation by self-regulation. The first interaction showed a positive and significant effect, implying that children who are cooperative and initiate interactions with peers are more accepted by peers across the school year. The cooperation by self-control was also expected to predict acceptance during the year of study. However, the negative coefficient for the interaction between cooperation and self-regulation for the growth curve indicated that, across the school year, children who cooperate with others, but is over-controlled will lead to a decrease in their acceptance levels. The interaction of assertion and self-regulation failed to predict peer acceptance.

Although a fairly large body of research has investigated the unique effects of social skills predictors on peer acceptance, this research takes into account that these predictors are intercorrelated. One of the most striking findings from this study is the remarkable strength of the association between cooperation and assertion, and cooperation and self-regulation. The findings indicated that cooperation and assertion interaction were important in predicting the trajectory of acceptance of a child, as well as the dynamic interplay between cooperation and self-regulation. Being high in cooperation and high in assertiveness is characterized by a

tendency for sociable individuals tend to approach others, take initiative, and be active in social situations.

In this study, several developmental pathways that a child might exhibit emerged from the different combinations of social skills. The growth curves showed children are more accepted when other child show qualities such as sharing, maturity and agency (i.e., a person's orientation toward initiating and developing interactions with peers). However, a child who is actively engaged in the peer group, helps, and shares with others is more preferred by peers, regardless of not having the capacity to initiate social contact. Findings also showed that children who report low levels of cooperation and high levels of assertion are less likely to be like and have friends. This negative effect on acceptance was also observed in the relationship between low cooperation and low assertion. On the other hand, children who are high in cooperation and high in self-regulation, showed positive growth during the school year. Then, having group maturity skills and being well regulated leads to increased levels of acceptance. Similarly, children that show cooperative skills and are deregulate began kindergarten with high levels of acceptance and show a stable curve-shaped, meaning that having group maturity skills is useful even in the absence of self-regulation.

Strengths and limitations

A major strength of this study was the use of a two-level hierarchical linear model analysis to extend our understanding of peer acceptance by examining the developmental trajectory of social skills across the first year of school and to assess the interactions between the three social abilities (i.e., cooperation, assertion, and self-regulation) associated with acceptance. To our knowledge, the present study is the first of its kind to assess the effects of the interactions of children's social skills that are associated with acceptance.

This study discusses change and dynamics as general classes of inference that researchers may be interested in when they explore patterns in longitudinal data. Importantly, the present study has indicated that there is still quite something left to investigate with regard to the dynamic model of social skills interactions. The present research showed that the interactions between social skills are strong predictors of peer acceptance, future studies could take these factors into account. For example, based on the results of this research, it might be interesting to study the effects of social skills interactions with each other on sociometric status (and vice versa) from early childhood to middle childhood. This study has provided a new avenue for exploring how the associations between the social skills manifest and how they change across the school year.

Few studies lack limitations and this one is no exception. To begin, the data for the measures of children's social abilities were teacher ratings. Teachers regularly observe a wide range of children's classroom behavior, and they can reliably differentiate among children based on their classroom participation and interactions with peers. However, the present study did not establish on what basis teachers assess each child's social skills. Teachers may had responded more in terms of their personal relationship with the child and/or academic integration rather than social integration. Thus, a multi-method approach using classroom observations, and teacher reports could clarify what is captured precisely by teachers' perception of students' social skills. Second, this study did not analyze the differences between the two sexes. Conversely, in future research it would be interesting to explore differential social skills growth trajectories on acceptance for boys and girls using the dynamic interplay between social skills.

Conclusion

To conclude, previous studies into the relationship between social competence and peer acceptance have generally focused on determining unique effects of each of these factors on acceptance. This study convincingly demonstrates and analyzes which aspects of social competence (considering unique and interactive effects) are related to peer acceptance. Findings clearly show that the social skills underlying acceptance varies as a function of the interaction with each other. Therefore, this paper underscores the importance of understanding the dynamic interplay between children's social abilities and how these mediate the effects of acceptance in the first year of school. With this background of social profiles, researchers can now move toward a theory of the social abilities' interactions in children's peer acceptance.

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Appendices

Appendix A. Letter of Approval from the Ethics Committee

UNIVERSIDAD DEL NORTE

Barranquilla, 30 de abril de 2009

Doctora
LUZ STELLA LOPEZ
Co-Investigador Principal
Proyecto de Investigación
"Predictores de Éxito Escolar"
Ciudad

Apreciada Doctora Luz Stella:

En reunión efectuada el 30 de abril, según acta No. 39; se recibieron y aprobaron los documentos relacionados:

- Proyecto de Investigación "Predictores de Éxito Escolar.
- Instrucciones para entrevistas
- Comportamiento Social versión para Padres
- Comportamiento Social versión para Docentes
- Comportamiento Social versión Niño
- Draft Barrio
- Draft Familia
- Record Form Boehm – 3
- Consentimiento Informado

Atentamente,

Enf. GLORIA VISBAL ILLERA
Presidenta
Comité de Etica en Investigación
En el Área de la Salud

UNIVERSIDAD DEL NORTE
Comite de Etica en Investigación
en el Area de la Salud

UNIVERSIDAD DEL NORTE
DECANATURA DE SALUD
RECOMENDACIONES PARA TENER EN CUENTA AL SOMETER UN PROTOCOLO EN EL COMITÉ DE ETICA EN INVESTIGACION EN EL AREA DE LA SALUD

1. Presentar ante la oficina de la Decanatura de Salud el documento original del protocolo.
2. Hoja de vida ejecutiva del investigador principal, sub- investigador, coordinador de estudios, otros miembros participantes
3. Presentan 7 resúmenes cortos del protocolo a someter
4. Las reuniones del comité de Ética se realizan el último jueves de cada mes
5. Para someter un protocolo debe entregarse en la Oficina de la Decanatura de Salud con 8 día hábiles previos a la reunión.
6. Las respuestas generadas por el Comité serán entregadas al investigador máximo cinco días hábiles después de realizada de reunión.
7. El investigador debe presentar ante el Comité el status de estudio cada seis meses y al finalizar.
8. Se debe notificar al Comité si hay cambios de los miembros participantes en los protocolos.

Recomendaciones para elaborar un buen formato de consentimiento informado:

1. Identificar el documento (parte superior frontal de la primera hoja): Información para el paciente y formulario de consentimiento informado.
2. Versión: Número de versión del documento
3. Titulo del estudio.
4. Patrocinador del estudio (Si aplica) Nombre, domicilio, teléfono, fax, ciudad.
5. Investigador del estudio y Co-investigadores: Nombre, domicilio, teléfono, fax, ciudad.
6. Naturaleza y propósito del estudio: en forma clara, corta, concisa y entendible para el paciente o sus familiares.
7. Tratamientos del estudio que se le suministrarán a los pacientes. (si aplica)
8. Procedimientos del estudio: explicar la parte operativa, flujo grama del proceso.
9. Riesgos y efectos adversos que se pueden presentar
10 Explicitar que se protegerá la confidencialidad de los registros e información suministrada por el participante
11 Explicitar que el participante puede retirarse voluntariamente del estudio cuando lo desee, aunque ya el estudio esté iniciado.
12. Página de firmas: Firma del paciente que garantice que ha leído y entendido el formato del consentimiento informado, en caso de menores de edad de sus padres, o representante legal.