Construct, Measurement and Assessment of Social Competence in Early Adolescence

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Abstract

This study explores differences in the conceptualization of social competence according to the measure used. To do so, the relations of influence of social cognition variables in the development of social competence are analyzed by means of two different scales. The participants included 425 students (49% girls) ranging in age from 10 to 13 years (M= 10.94, SD= .78). Confirmatory factor analysis and structural equation models were performed. The results showed optimal psychometric properties for the Spanish adaptation of the Social Competence Scale (SCS) and the Perceived Social Competence Scale-II (PSCS-II). Development and peer perception goals and popularity and peer support goals were found to have a direct effect on the PSCS-II and the SCS, respectively. The differences observed in the explanatory models are discussed from the perspective of the social competence constructs measured by each scale.
Key words: social competence, social goals, peer support, peer perception.

Novelty and Significance

What is already known about the topic?

- Social competence is a multidimensional construct difficult to measure.
- Social competence is influenced by several personal and contextual variables.

What this paper adds?

- Depending on the measure of social competence used, differences in pre-adolescent behavior may be observed.
- The analysis of two widely employed scales and its results might help researchers in identifying what sort of concept they are measuring depending on the instrument used.

Social competence involves developing behaviors and skills that students put into practice in their social life taking into account the characteristics of the context in which they operate. The development of this competence involves the ability to successfully create and maintain interactions with peers, and thus has a large impact on the adaptation and psychosocial adjustment of children (Cichetti & Bukowiski, 1995; Parker, Rubin, Price, & DeRosier, 1995).

Various instruments have been used to measure social competence. For young children, the Kohn Social Competence Scale is widely used to measure the socio-emotional functioning of boys and girls aged 3-5 (Kohn & Rosman, 1974) or the Preschool Q-set (Waters, Noyes, Vaughn, & Ricks, 1985). In adolescents, the Adolescent Social Self-Efficacy Scale (S-EFF), developed by Connolly (1989), is used to assess self-efficacy as a function of expectations regarding social skills in interpersonal relationships.

In primary school years, the social acceptance subscale of the Self-Perception Profile for Children (SPPC), developed by Harter (1985), has been widely used. Although numerous studies have used this scale as a measure of perceived social competence, it was revised by the author herself to adapt the wording in order to assess specific social competence skills (Harter, 1985). This six-item instrument assesses the ability to establish friendships, be accepted by peers and be popular. Like Harter's scale, the Perceived Social Competence Scale II (PSCS-II), developed by Anderson-Butcher *et alii* (2014), is also brief and easy to administer. The PSCS-II assesses behaviors such as helping others, showing concern for others and giving support to others. The two scales, however, are based on very different definitions of social competence. Harter's scale considers the skills required to be socially acceptable, while the second evaluates prosocial behavior. Although this may suggest that researchers in the field of peer-related social competence must assume a lack of instruments with valid measures that are equally faithful to the construct, it is necessary to explore this issue in further depth.

Social competence has been widely studied and is now recognized as a key factor in fostering positive social interactions, acceptance from others and friendships (Harter, 1985; Padilla-Walker, Fraser, Black, & Bean, 2015). It has also been recognized as a variable that promotes academic success (Welsh, Parke, Widaman, & O'Neil, 2001), as well as a protective factor against substance use (Griffin, Epstein, Botvin, & Spoth, 2001) and aggression (Chen, Huang, Chang, Wang, & Li, 2010).

However, the construct of social competence requires greater research attention to clarify the factors that influence the development of this competence for managing interpersonal relationships. In this regard, the importance of motivation has been recognized. According to Ryan and Shim (2006, 2008), individuals evaluate their own competence according to whether or not they achieve certain goals. In their research, the authors argued that goals aimed at improving interpersonal relationships are those which have the greatest influence on students' social competence. Subsequent studies have confirmed that these development goals are related to adaptive behaviors, while popularity and avoidance goals predict negative social outcomes (Shim, Cho, & Wang, 2013).

Moreover, in their interactions, children construct schemas about themselves and about others that logically influence their behavior (Crick & Dodge, 1994; Ladd & Troop-Gordon, 2003). Self-perception has been measured through constructs such as self-concept, self-esteem and social acceptance. The latter, understood as a measure of social self-concept, has been associated mainly with difficulties in relationships with peers and especially with problems of victimization (Cooley, Fite, Rubens, & Tunno, 2015; Hawker & Boulton, 2000).

The relational schemas theory (Baldwin, 1992; Holmes, 2000) posits that to understand social behavior, not only must the perceptions one has about oneself when interacting with others be taken into account, but the perceptions one has about others. Zimmer-Gembeck, Waters and Kindermann (2010) found that children who attributed negative qualities to their peers were less liked, but few studies have taken into account the combination of both perceptions for understanding social functioning. The work of Salmivalli and colleagues has addressed this dual perspective for understanding both aggressive behaviors and prosociality (Salmivalli & Isaacs, 2005; Salmivalli, Ojanen, Haanpää, & Peets, 2005).

However, no research has addressed social motivation and the dual relational perspective to explain the development of socially competent behaviors.

   This study has a two-fold objective: 1) to determine the psychometric properties of the Spanish adaptation of two measures of social competence in early adolescence; and 2) to analyze the differences in explanatory models regarding social competence depending on the scale used.

   We hypothesize that the influence of peer perception, motivation and social support will vary depending on the social competence instrument used.

METHOD

Participants

   Incidental-convenience sampling was performed in which 425 students (49.18% girls) in the last two years of primary education (5th grade= 50.82%, 6th grade= 49.41%) participated. The participants ranged in age from 10 to 13 years (*M*= 10.94, *SD*= .78).

Instruments

Perceived Social Competence Scale-II (PSCS-II; Anderson-Butcher *et alii*, 2014). This is a Likert-type instrument consisting of five items scored on a scale of 1-5 (1= Not at all true; 5= Really true) (e.g., "I help other people"). The internal consistency (Omega McDonald) with the study sample was Ω= .87.

Self-Perception Profile for Children, Social Competence Subscale (SPPC; Harter, 1985). Internal consistency α= 78 for the original scale. In each item, the child is presented with two social situations and asked to indicate which option best describes him or her (e.g., "Some kids know how to make classmates like them BUT other kids don't know how to make classmates like them"). After choosing one of the statements, the child decides whether the statement is "really true for me" or "sort of true for me". The answers are scored from 1 to 4. Lower scores indicate a low level of social competence. The internal consistency of the study sample was Ω= .72.

Generalized Perception-of-Peers Questionnaire (Salmivalli *et alii*, 2005). Internal consistency α= 89 for the original scale. This instrument consists of 13 items that describe the positive and negative qualities of the child's peer group, such as "My age-mates can really be relied on" or "My age-mates only think about their own interests". The responses are measured using a one-factor Likert-type scale ranging from 0 to 3 (0= No, not at all; 3= Yes, completely). The reliability for the study sample was Ω= .93.

Social Goals Scale (Rodkin, Ryan, Jamison, & Wilson, 2013). Consists of 15 items structured into three factors: a) social development goals (α= .87) (e.g., "I like it when I learn new ways to make friends"); b) demonstration-approach goals (popularity) (α= .89) (e.g., "It is important to me that other kids think I am popular"; and c) demonstration-avoid goals (α= .84) (e.g., "It is important to me that I don't embarrass myself around my friends"). The items are rated on a 5-point Likert-type scale (1= Not at all true; 5= Very true). The internal consistency with the study sample was adequate (Ω_{MD}= .76, Ω_{MA}= .76, Ω_{ME}= .76).

Social Support Scale (Harter, 1985). The validated Spanish version of the peer support subscale was used (Pastor, Quiles, & Pamies, 2012). The scale consists of six items. The surveyed students must first choose a statement and then decide whether it is "really true for me" or "sort of true for me" (e.g., "Some kids spend their recess being alone BUT other kids spend recess playing with classmates"). The internal consistency was α= .69 for the original scale and Ω= .70 for the study sample.

Procedure and Design

The design was instrumental, cross-sectional and ex-post-facto (Montero & León, 2007). After informing the schools and obtaining their consent, the questionnaires were administered on an anonymous and voluntary basis. The questionnaires were administered by researchers trained specifically for this purpose. Average completion time was 30 minutes. The parallel back-translation procedure (Brislin, 1986) was used to translate the instruments into Spanish. Data were collected in accordance with the general principles and ethical standards for research of the American Psychological Association.

Data analysis

The psychometric properties of the scales were analyzed by means of confirmatory factor analysis (CFA) using the robust maximum likelihood (RML) estimation method. RML permits the use of polychoric matrices, which are recommended for working with non-normally distributed samples and ordinal variables (Freiberg, Straver, de la Iglesia, & Fernández, 2013; Lorenzo Seva & Ferrando, 2006). For the structural equation model, the robust least squared (RLS) method was used. RLS is recommended for developing structural equation models involving ordinal variables (Rhemtulla, Brosseau-Liard, & Savalei, 2012). The fit indices used in both analyses were the Satorra-Bentler chi-square (2001) (SBχ^2), the comparative fit index (CFI) and the non-normed fit index (NNFI). All of the fit indices were >.95 for optimum values and >.90 for acceptable values. The root mean square error of approximation (RMSEA) (<.08) and the standardized root mean square residual of the covariances (SRMR) (<.08) were used (Byrne, 2013; Hu & Bentler, 1999). EQS 6.2 software was used. Factor 9.2 software, which is recommended to study the reliability of ordinal variables, was used to calculate the Omega McDonald (Elousa Oliden & Zumbo, 2008).

Results

Regarding the psychometric properties of each of the scales measuring social competence, Table 1 shows the univariate statistics for each of the items of the PSCS-II scale (Anderson-Butcher *et alii*, 2014).

The polychoric correlations matrix between the items showed values ranging from .49 to .65. The CFA fit indices showed optimal values: SBχ^2= 7.287; NNFI= .997; CFI= .998; RMSEA= .034; 90% confidence interval of RMSEA: .00-.84; SRMR= .023 (see Figure 1). The Mardia coefficient was 23.72.

The psychometric properties of Harter's (1985) Social Competence Scale was also analyzed (see Table 2).

The CFA fit indices were acceptable: SBχ^2= 33.341; NNFI= .914; CFI= .948; RMSEA= .081; 90% confidence interval of RMSEA: .053-.111; SRMR= .058 (see Figure 2). The polychoric correlations matrix between items showed values ranging from .22 to .47. Mardia coefficient= 2.73.

The psychometric properties of the Spanish adaptation of the Generalized Peer Perception Scale (Salmivalli, 2005) and the Social Goals Scale (Rodkin *et alii*, 2013) were also analyzed. The first showed optimal CFA fit indices for a one-factor model: SBχ^2= 197.005; NNFI= .975; CFI= .979; RMSEA= .073; 90% confidence interval of

Table 1. Univariate statistics for the CFA of the
Perceived Social Competence Scale.

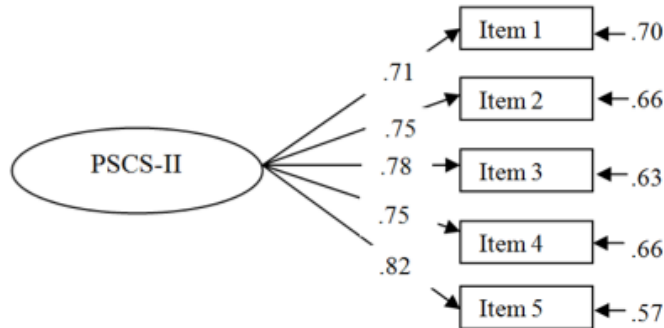|	M	SD	Kurtosis	Skewness
Item 1	4.46	.841	3.392	-1.774
Item 2	4.08	1.017	.395	-.983
Item 3	4.29	.895	1.047	-1.209
Item 4	4.13	.962	.475	-0.958
Item 5	4.44	.800	1.212	-1.341

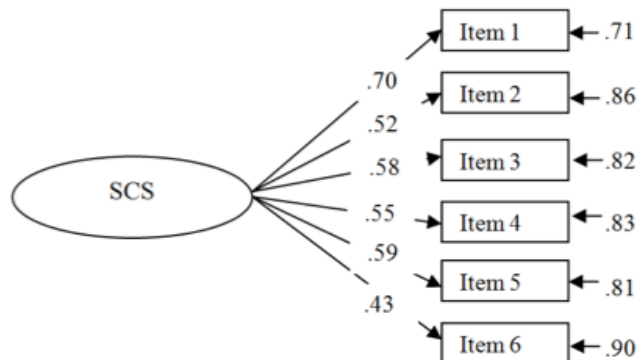Figure 1. Normalized CFA coefficients in the PSCS-II items.

Figure 2. Normalized CFA coefficients in the SCS items.

RMSEA: .061-.084; SRMR= .061. The univariate statistics are shown in Table 3. The values of the polychoric correlations matrix between items ranged from .34 to .70. The Mardia coefficient for the scale was 98.60 (see Figure 3).

The psychometric properties of the Spanish version of the Social Goals Scale were inadequate for a one-factor model (SBχ^2= 435.3656; NNFI= .48; CFI= .56; RMSEA= .103; SRMR= .100) and optimal for the original three-factor model (SBχ^2= 133.8625; NNFI= .963; CFI= .97; RMSEA= .039; 90% confidence interval of RMSEA: .025-.051; SRMR= .076; see Figure 4). The univariate statistics are shown in Table 4. Mardia coefficient= 198.51.

To achieve the second objective, an initial model was developed in which the influence of social goals, peer perception and social adjustment on each of the measures

Table 3. Univariate statistics for the CFA of the
Generalized Peer Perception Scale.

	M	*SD*	*Kurtosis*	*Skewness*
Item 1	2.26	.737	.737	-.882
Item 2	2.28	.853	.398	-1.055
Item 3	2.41	.775	965	-1.236
Item 4	2.11	1.007	-.654	-.763
Item 5	2.43	.892	.929	-1.432
Item 6	2.26	.933	-.113	-1.007
Item 7	2.33	.976	.147	-1.202
Item 8	2.68	.694	4.021	-2.201
Item 9	2.26	.918	.441	-1.148
Item 10	2.28	.834	.432	-1.027
Item 11	2.42	.848	.852	-1.333
Item 12	2.37	.784	1.427	-1.290
Item 13	2.61	.755	3.451	-2.023

Figure 3. Normalized CFA coefficients in the Generalized Peer Perception Scale items.

of social competence was taken as a theoretical reference. The three goals used as measures of the same instrument were covaried together with peer perception and social support, following the recommendations of the relational schemas theory.

The model for social competence measured using the instrument of Anderson-Butcher (2014) showed acceptable indices: SBχ^2= 964.667; NNFI= .93; CFI= .934; RMSEA= .041; 90% confidence interval of RMSEA: .036-.046; SRMR= .066 (see Figure 5).

As the model shows, development goals had a direct influence on social competence (β= .53; p <.05). Avoidance (β= -.13; p >.05) and demonstration goals (β= -.08; p >.05)

Table 4. Univariate statistics for the CFA of the Social Goals Scale.

|	M	SD	Kurtosis	Skewness
Item 1	4.18	1.007	1.090	-1.204
Item 2	4.16	.979	1.040	-1.169
Item 3	4.35	.902	2.504	-1.553
Item 4	4.38	.938	2.871	-1.720
Item 5	4.06	1.027	.724	-1.074
Item 6	4.49	.929	3.903	-2.038
Item 7	2.64	1.391	-1.137	.284
Item 8	2.73	1.322	-1.025	.209
Item 9	2.66	1.384	-1.139	.268
Item 10	3.02	1.363	-1.126	-.051
Item 11	4.13	1.071	.503	-1.132
Item 12	3.91	1.232	-.132	-.927
Item 13	3.83	1.252	-.389	-.810
Item 14	3.94	1.180	.074	-.957
Item 15	3.85	1.325	-.310	-.934
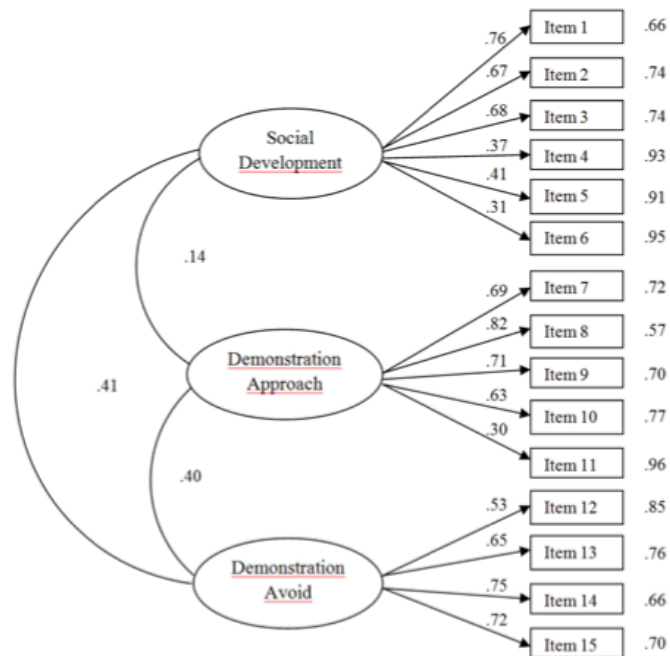
Figure 4. Normalized CFA coefficients in the Social Goals Scale items.

had an inverse influence. Peer perception also had a direct influence on social competence ($\beta= .56$; $p <.05$), while peer support had an inverse influence ($\beta= -.14$; $p >.05$).

As regards the social competence model measured according to the scale of Harter (1985) and based on the same relations of influence, acceptable indices were obtained: SBχ^2= 987.034; NNFI= .927; CFI= .932; RMSEA= .041; 90% confidence interval of RMSEA: .036-.46; SRMR= .064 (see Figure 6). The R^2 value for the dependent variable was .94.

The model shows that demonstration goals directly influenced social competence (β= .44; p < .05). Avoidance goals (β= -.47, p <.05) and development goals (β= -.01; p >.05) showed the inverse influence. Peer support also had a direct influence on social competence (β= .86; p <.05), while peer perception had an inverse influence (β= -.01; p >.05).

A new model was developed in which the relationship between peer perception and development goals were omitted in the dependent variable due to their low value. The indices were similar to the original model: SBχ^2= 983.383; NNFI= .928; CFI= .932; RMSEA= .041; 90% confidence interval of RMSEA: .036-.46; SRMR= .064 and an R^2 value of the dependent variable of .92.

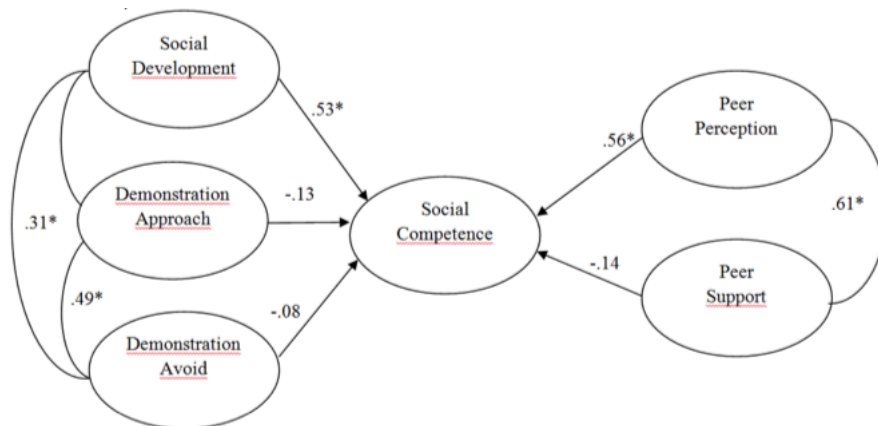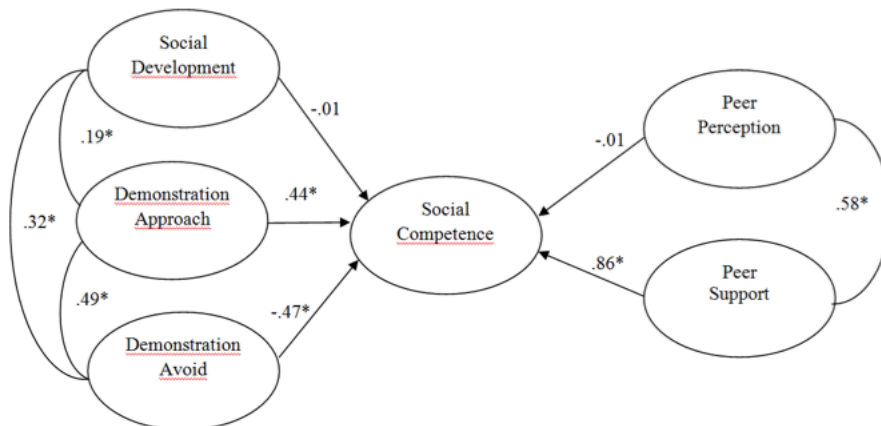*Figure 5.* Model for PSCS-II (*p <.05).

Figure 6. Model for SCS (Harter, 2012) (*p < .05).

Discussion

To achieve the first objective, the psychometric properties of the Spanish adaptations of the scales developed by Harter (1985) and Anderson-Butcher *et alii* (2014) were analyzed. Both scales share common measurement features: they capture the development of socially competent behaviors through self-reports, they are short, and they obtain highly reliable and valid results in their original study samples. In the validation, both scales showed suitable indices with reliability values similar to the original scales.

The second aim of this study was to examine the social competence construct and measurement in further depth in order to show that instruments with identical names actually have important conceptual nuances. Two explanatory models of social competence using variables recognized as influencing the quality of interpersonal peer relationships revealed some inconsistencies.

The model using the PSCS-II showed that development goals have a direct influence, thus indicating that a motivational pattern aimed at improving peer interactions fosters respectful attitudes and prosocial behaviors, which are the basis for engaging in positive relationships (Herrera López, Romera, Gómez Ortiz, & Ortega Ruiz, 2016). A direct influence was also observed for peer perception, which could indicate that when children perceive that their classmates are sincere, reliable and respectful, they are more likely to develop socially competent behaviors. Moreover, this peer perception was found to be related to perceived social support. Thus, children who feel they have social support will in turn have a positive perception of their peers and this interaction will influence their social competence, in line with the theory of relational schema (Baldwin, 1992; Holmes, 2000). The results of the model based on Harter's (1985) social competence measure revealed variability in the relationship between the social cognition variables. It seems that the search for social prestige and peer support leads children to engage in socially competent behavior.

The analysis suggests that we may actually be measuring two different constructs, although both are defined as social competence. Harter's scale appears to include a concept that involves the development of skills to attain social acceptance, popularity and friendship, which, in line with Rose-Krasnor (1997), is not an ideal criterion for defining social competence, as this approach seems to depend on the conventions of the child's intimate or close context, which does not always ensure that positive skills for dealing with social situations will be implemented (Pozzoli, Gini, & Vieno, 2012). In addition, attaining and maintaining popularity is related to proactive aggression (Stoltz, Cillessen, van den Berg, & Gommans, 2016) and risk behaviors (Agan *et alii*, 2015). In contrast, the scale of Arderson-Butcher, which was designed to assess prosocial behaviors, takes into account the perspective of the other (Eisenberg & Fabes, 1998), thus explaining why development goals and the positive perception of others lead children to engage in this type of behavior.

These results open a critical debate on the social competence construct and the need for universal concepts and instruments to measure the factors involved in this complex concept. Following the theoretical advances regarding the conceptualization of this construct, it should consider positive social and emotional skills, the efficiency associated with them and the perspective of the other (Rose-Krasnor, 1997). But the construct should also include an ethical component (Arsenio & Lemerise, 2001) that associates social competence with moral behaviors related to respect among peers.

Progress in this line would permit reaching consensus on the degree to which social competence explains involvement in phenomena such as bullying and the response to the victimization of peers (Gómez Ortiz, Romera, & Ortega Ruiz, 2017).

This paper has certain limitations regarding the sample size, the method and the exclusive use of self-reports. In further research, it would be interesting to have a larger number of participants, explore the model with a longitudinal study, take into account the perception of other stakeholders such as teachers, and use measurement instruments that allow exploring social competence from a multidimensional perspective that includes a moral criterion.

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