

School Performance in Writing, Reading and Mathematics Related to Social Skills

Daniel Bartholomeu*, Jos éM. Montiel, Soraia Neia, Geraldo A. Fiamenghi-Jr, Marjorie C. R. Silva

Postgraduate Department of Educational Psychology, UNIFIEO, Osasco, Brazil

Abstract There is a hypothesis postulating a connection between social skills and writing and mathematics performance, as well as conversational abilities and social confidence being related to academic performance, for girls, whereas assertiveness is more associated with performance in boys. This study assessed 196 primary school children, 8 to 10 year-old, boys and girls in two schools in Sao Paulo State, Brazil. Participants completed the *Test of Social Skills for Primary School Children (THAS-C)* and the *Test of Writing, Reading, and Mathematics Performance*. Generally, associations found in literature between school performance and social skills were confirmed in this study using THAS-C, indicating a validity evidence for the test, as the relations expected for the construct assessed by the test were kept within the measure (convergent assessment). Results showed the need for more information concerning social skills of learning disabled children, as specific difficulties in writing, reading and mathematics are related to some kinds of behaviors, as well as to gender differences.

Keywords School assessment, Academic performance, Social skills

1. Introduction

School failure is persistent in Brazilian education and originates in different factors such as family, emotional, educational and social [1]. Amongst them, social skills are educational, as they represent conditions for acquiring concepts and cognitive strategies that affect social development and learning [2, 3]. Adequate social interactions of children with peers and teachers require a proper social skills repertoire, that means, different sorts of social behaviors to deal with demanding interpersonal situations [4-6].

Problems in social skills are defined as deficits in acquisition or adequate performance in interactions and cultural situations and interfere with the quality of those interactions [6-8].

Amongst psychosocial factors related to school learning, are self-efficacy; motivation to learn; beliefs [9, 10]; affective aspects [11]; school factors; learning environment; teacher's traits; family environment resources; ability to learn with school integration; parents involvement; discipline [12]; as well as socioeconomic variables [13, 14].

Studies also show that children with learning disabilities or difficulties present interpersonal features including tendency to be more aggressive, negative interactions with peers, personality disorders, less elaborate social skills [5, 7,

15]. Parents report remarkable attributes in their children, such as inadequate ways of confronting (irritation, resistance, aggression/attack, anxiety, opposition, withdrawing), maladaptive behaviors (agitation, attachment, lack of organization, social withdrawal), and functional changes in sleep or speech [16]. Studies with peers also showed that children with learning disabilities are less accepted by peers [17-19].

However, there are studies that reported learning disabled children who did not present lack of social skills [20, 7, 21].

According to studies, a detailed assessment and monitoring of interpersonal and academic difficulties in early development is important to planning of effective educational strategies [21-23]. Assessing of social skills in children must be done in a multimodal design, meaning that it should employ different procedures (interviews, inventories, observations), instruments and informers (parents, teachers, children and peers) [6, 24].

The objective of this study was to present relations between social skills and reading, writing, and mathematics performance in children, aiming to providing validity evidence for the Test of Social Skills for Primary School Children and Teenagers (THAS-C). In addition, as social skills are associated to group cohesion indicators, and group cohesion is associated to high school performance, a hypothesis of an association between social skills and writing and mathematics performance was tested.

2. Method

Participants

* Corresponding author:

d_bartholomeu@yahoo.com.br (Daniel Bartholomeu)

Published online at <http://journal.sapub.org/ijpbs>

Copyright © 2015 Scientific & Academic Publishing. All Rights Reserved

A total of 196 children, aged 8 to 10 years ($M=9$ years, $SD=0.834$) from two primary schools, one private ($N=72$), one government ($N=124$), in São Paulo, Brazil, 52% female, mostly 4th year ($N=88$) and 5th year ($N=83$).

Instruments

1. Test of Social Skills for Primary School Children and Teenagers – THAS-C [25]

The test presents 23 items to be answered in a 3-point Likert scale (never=1, sometimes=2, always=3). Some items are inversely scored, as the socially desired skill is defined as the opposite of the statement. Because items' difficulty is hierarchized, it is possible to identify conducts in the course of social interactions, making it possible to plan interventions to low social skills children.

2. Test of Writing, Reading, and Mathematics Performance [26].

The test was developed aiming to assess the ability of reading and interpreting short texts, writing of dictated word

and executing of arithmetic operations in the form of expressions, and problem solutions. As a result, it is possible to investigate pupils' learning levels, indicating areas needing more attention.

Procedures

Tests were completed in collective form, in pupils' classrooms, after parents and institutions signed a term of consent. All the questions were read loud by the researchers in each group.

Research was approved by the Ethic Committee, number 424-2010.

3. Results and Discussion

Correlation coefficients between school performance in reading, writing and mathematics and social skills assessed by THAS-C, globally and by subgroups (age, gender, year) are shown in Tables 1, 2, 3.

Table 1. Pearson's Correlation Coefficient in Performance Tasks and THAS-C

Performance Task	Altruism	Conversation & Social Development	Assertiveness	General Social Skills
Dictation Writing	r 0,396** p 0,000	-0,143 0,168	0,194 0,062	0,315(**) 0,002
Figure Writing	r 0,376(**) p 0,000	-0,119 0,281	0,224(*) 0,040	0,310(**) 0,004
Number Order	r 0,088 p 0,388	-0,089 0,385	-0,007 0,942	0,022 0,827
Arithmetic Operations	r 0,343 p 0,074	0,073 0,713	0,113 0,566	0,363 0,057
Arithmetic Problems	r 0,170 p 0,345	-0,084 0,644	0,439(*) 0,011	0,230 0,198

Table 2. Pearson's Correlation Coefficient in Performance Tasks and THAS-C related to School Years

Year	Performance Task	Altruism	Conversation & Social Development	Assertiveness	General Social Skills
4th	Dictation Writing	r 0,421(**) p 0,004	-0,100 0,513	0,145 0,341	0,341(*) 0,022
		r 0,449(**) p 0,003	-0,037 0,817	0,163 0,303	0,405(**) 0,008
	Figure Writing	r 0,262 p 0,072	-0,109 0,460	-0,034 0,820	0,142 0,335
		r 0,419 p 0,135	0,087 0,767	-0,095 0,747	0,410 0,145
	Number Order	r 0,153 p 0,617	0,310 0,303	0,611(*) 0,026	0,561(*) 0,046
		r 0,411(**) p 0,006	-0,190 0,216	0,352(*) 0,019	0,350(*) 0,020
	Figure Writing	r 0,328(*) p 0,044	-0,336(*) 0,039	0,413(**) 0,010	0,194 0,243
		r -0,042 p 0,789	-0,090 0,564	0,203 0,192	-0,025 0,873
	Arithmetic Operations	r 0,772(**) p 0,005	-0,295 0,378	0,681(*) 0,021	0,642(*) 0,033
		r 0,395 p 0,105	-0,233 0,352	0,459 0,056	0,356 0,148
5th	Dictation Writing	r 0,421(**) p 0,004	-0,100 0,513	0,145 0,341	0,341(*) 0,022
		r 0,449(**) p 0,003	-0,037 0,817	0,163 0,303	0,405(**) 0,008
	Figure Writing	r 0,262 p 0,072	-0,109 0,460	-0,034 0,820	0,142 0,335
		r 0,419 p 0,135	0,087 0,767	-0,095 0,747	0,410 0,145
	Number Order	r 0,153 p 0,617	0,310 0,303	0,611(*) 0,026	0,561(*) 0,046
		r 0,411(**) p 0,006	-0,190 0,216	0,352(*) 0,019	0,350(*) 0,020
	Figure Writing	r 0,328(*) p 0,044	-0,336(*) 0,039	0,413(**) 0,010	0,194 0,243
		r -0,042 p 0,789	-0,090 0,564	0,203 0,192	-0,025 0,873
	Arithmetic Operations	r 0,772(**) p 0,005	-0,295 0,378	0,681(*) 0,021	0,642(*) 0,033
		r 0,395 p 0,105	-0,233 0,352	0,459 0,056	0,356 0,148

Table 3. Pearson's Correlation Coefficient in Performance Tasks and THAS-C considering Gender

Gender	Performance Task		Altruism	Conversation & Social Development	Assertiveness	General Social Skills
Male	Dictation Writing	<i>r</i>	0,482(**)	-0,038	0,363(*)	0,488(**)
		<i>p</i>	0,001	0,808	0,015	0,001
	Figure Writing	<i>r</i>	0,392(*)	-0,071	0,388(*)	0,411(**)
		<i>p</i>	0,012	0,663	0,013	0,008
	Number Order	<i>r</i>	0,192	-0,278	0,293	0,114
		<i>p</i>	0,206	0,065	0,051	0,455
	Arithmetic Operations	<i>r</i>	0,597(*)	0,030	0,764(**)	0,642(*)
		<i>p</i>	0,041	0,927	0,004	0,025
	Arithmetic Problems	<i>r</i>	0,453	0,313	0,398	0,545(*)
		<i>p</i>	0,078	0,238	0,127	0,029
Female	Dictation Writing	<i>r</i>	0,265	-0,207	0,054	0,113
		<i>p</i>	0,063	0,148	0,710	0,436
	Figure Writing	<i>r</i>	0,354(*)	-0,137	0,068	0,222
		<i>p</i>	0,018	0,374	0,661	0,147
	Number Order	<i>r</i>	0,035	-0,013	-0,245	-0,057
		<i>p</i>	0,806	0,928	0,078	0,687
	Arithmetic Operations	<i>r</i>	0,255	0,052	-0,224	0,170
		<i>p</i>	0,340	0,848	0,405	0,530
	Arithmetic Problems	<i>r</i>	-0,017	-0,379	0,452	-0,111
		<i>p</i>	0,949	0,133	0,068	0,671

Data revealed that writing via dictation and figures is moderately and positively associated with altruism and general social skills, confirming other studies [27]. Apparently, abilities related to altruism and politeness tend to improve writing learning, and interventions focused in those difficulties could benefit of those factors.

Assertiveness was positively associated with figure writing and solving of mathematics problems, showing that more assertive children tend to perform better in those tasks, confirming other studies [5, 7, 26].

The relation between social skills and performance in each school year was tested and results are shown in Table 2. Também foi testada a relação entre habilidades sociais e desempenho, separadamente por série

It can be observed that 4th year pupils' performance in dictation and figure writing is positive and significantly associated with altruism and general social skills. In the 5th year, there were positive and significant associations between dictation writing and mathematics with altruism, assertiveness and general social skills. It is interesting to observe that a greater amount of social skills were associated with performance in that school year, suggesting that more social skills tend to be accessed in further school years and seem to ease the performance in different areas, as suggested by various researchers [5, 15, 17-19, 27].

Another analysis was related to a gender variation, as diverse social attitudes tend to be differently associated in group cohesion in dissimilar groups [28]. Results are present in Table 3.

Results show more positive and significant associations for male participants, meaning that the better the

performance in writing and mathematics operations, the higher the abilities of altruism, assertiveness and general social skills.

It must be stated that boys tend to show more learning disabilities than girls and associations between social skills and learning have been already identified [29]. Emotional problems tend to increase learning difficulties in boys, than in girls [15]. Therefore, those factors must be taken in account when planning interventions considering socioemotional aspects in learning disabled children.

4. Conclusions

Results of this study are in accordance with suggestions that indicate the need to amplify information on social skills repertoire in children with different learning difficulties. Apparently, specific difficulties in writing, reading and mathematics, as well their course vary with gender and age.

Therefore, it would be worthwhile to investigate correlations between school performance with peer acceptance and rejection.

Politeness and altruism appear to be more associated to writing, and assertiveness to mathematics performance. Those relations are enlarged in further school years and in male participants, indicating specific intervention issues, aiming to improve school performance.

Generally, associations found in literature between school performance and social skills were confirmed in this study using THAS-C, indicating a validity evidence for the test, as the relations expected for the construct assessed by the test were kept within the measure (convergent assessment).

Limits of this study refer to the number of participants in some of the measures, causing impact in the correlation level of significance. Studies with larger samples are recommended.

REFERENCES

- [1] Almeida, S. F. C., Rabelo, L. de M., Cabral, V. S., Moura, E. R. de O., Barreto, M. de S. F., Barbosa, H., 1995, Conceções e práticas de psicólogos escolares acerca das dificuldades de aprendizagem, *Psicologia: Teoria e Pesquisa*, 11(2), 117-134.
- [2] Coll, C., and Sole, I., 1995, A interação professor/aluno no processo de ensino aprendizagem. In: C. Coll, J. Palacios, A. Marchesi (Eds), *Desenvolvimento psicológico e educação: Necessidades educativas especiais e aprendizagem escolar*. Porto Alegre: Artes Médicas.
- [3] Del Prette, A., and Del Prette, Z. A. P., 1997, Habilidades sociais e construção de conhecimento em contexto escolar, In D. R. Zamignani (Ed), *Sobre comportamento e cognição: a aplicação da análise do comportamento e da terapia cognitivo-comportamental no hospital geral e nos transtornos psiquiátricos*, Santo André Arbytes.
- [4] Del Prette, A., Del Prette, Z. A. P., 2001, *Psicologia das relações interpessoais: Vivências para o trabalho em grupo*, Petrópolis: Vozes.
- [5] Gresham, F. M., Lane, K. L., MacMillan, D. L., Bocian, K., Ward, S., 2000, Effects of positive and negative illusory biases: Comparisons across social and academic self-concept domains, *Journal of School Psychology*, 38, 151-175.
- [6] Gresham, F. M., 1992, Social skills and learning disabilities: Causal, concomitant or correlational?, *School Psychological Review*, 21(3), 348-360.
- [7] Gresham, F. M., Lane, L. K., McMillan, D. L., Bocian, K.M., 1999, Social and academic profiles of externalizing and internalizing groups: Risk factors for emotional and behavioral disorders, *Behavioral Disorders*, 24(3), 231-245.
- [8] McClelland, M. M., Morrison, F. J., Holmes, D. L., 2000, Children at risk for early academic problems: The role of learning-related social skills, *Early Childhood Research Quarterly*, 15, 307-329.
- [9] Medeiros, P. C., Loureiro, S. R., Linhares, M. B. M., Marturano, E. M., 2000, A auto-eficácia e os aspectos comportamentais de crianças com dificuldade de aprendizagem, *Psicologia: Reflexão e Crítica*, 13, 327-336.
- [10] Medeiros, P. C., Loureiro, S. R., Linhares, M. B. M., Marturano, E. M., 2003, O senso de e o comportamento orientado para aprendizagem em crianças com queixa de dificuldade de aprendizagem, *Estudos de Psicologia*, 8, 93-105.
- [11] Loureiro, S. R., Marturano, E. M., Linhares, M. B. M., Machado, V. L. S., Silva, R. A., 1994, Crianças com queixa de dificuldade escolar: Avaliação psicológica através de técnica gráfica, *Arquivos Brasileiros de Psicologia Aplicada*, 46, 161-182.
- [12] Marturano, E. M., 1999, Recursos no ambiente familiar e dificuldades de aprendizagem na escola, *Psicologia: Teoria e Pesquisa*, 15, 153-162.
- [13] Leybaert, J., Alégria, J., Deltour, J., Skinkel, R., 1997, Aprender a ler: O papel da linguagem, da consciência fonológica e da escola. In J. Grégoire, and B. Piéart (Eds), *Avaliação dos problemas de leitura: Os novos modelos teóricos e suas implicações diagnósticas*, Porto Alegre: Artes Médicas.
- [14] Yavas, F., and Haase, V. G., 1988, Consciência fonêmica em crianças na fase de alfabetização, *Letras de Hoje*, 23(4), 31-55.
- [15] Bartholomeu, D., Bartholomeu, L. L., Machado, A. A., Cozza, H. F. P., Berberian, A. A., Montiel, J. M., 2009, Dificuldades de aprendizagem, personalidade, emoções e características psicossociais de crianças: Revisando a literatura e sugerindo modelos. In: J. M. Montiel; and F. C. Capovilla (Ed), *Atualização em transtornos de aprendizagem*, 1ed, São Paulo: Artes Médicas.
- [16] Marturano, E. M., Linhares, M. B. M., Parreira, V. L. C., 1993, Problemas emocionais e comportamentais associados a dificuldades na aprendizagem escolar, *Medicina Ribeirão Preto*, 26(2), 161-175.
- [17] Stone, W. L., and La Greca, A. M., 1990, The social status of children with LD: A reexamination, *Journal of Learning Disabilities*, 23, 32-37.
- [18] Vaughn, S., McIntosh, R., Spencer-Rowe, J., 1991, Peer rejection is a stubborn thing: Increasing peer acceptance of rejected students with learning disabilities, *Learning Disabilities Research, Practice*, 6, 83-88.
- [19] Bartholomeu, D., Montiel, J. M., Pessotto, F., 2011, Sociometria e habilidades sociais em alunos do ensino médio, *Estudos Interdisciplinares em Psicologia*, 2(2), 211-228.
- [20] Elliott C., Pring, T., Bunning K., 2002, Social skills training for adolescents with intellectual disabilities: A cautionary note, *Journal of Applied Research in Intellectual Disabilities*, 15, 91-96.
- [21] Swanson, H. L., and Malone, S., 1992, Social Skills and Learning disabilities: A meta-analysis of the literature, *School Psychology Review*, 21(3), 427-443.
- [22] Kavale, K. A., Forness, S. R., 1996, Social Skills deficits and learning disabilities: A meta-analysis, *Journal of Learning Disabilities*, 29(3), 226-237.
- [23] Medeiros, C. P., and Loureiro, S.R., 2004, Observação clínica do comportamento de crianças com queixa de dificuldade de aprendizagem, In E. M. Marturano, M. B.M. Linhares, S. R. Loureiro (Eds), *Vulnerabilidade e Proteção: Indicadores na trajetória do desenvolvimento escolar*, São Paulo: Casa do Psicólogo.
- [24] Gresham, F. M., and Elliott, S. N., 2008, *Social skills improvement system: Rating scales*, Bloomington: Pearson Assessments.
- [25] Bartholomeu, D., Silva, M. C. R., Montiel, J. M., 2014, *Teste de Habilidades Sociais para Crianças e Adolescentes em Situação Escolar: THAS-C*, São Paulo: Memnon.
- [26] Silva, M. C. R., Montiel, J. M., Pires, S. D., Bartholomeu, D., 2010, *Avaliação dos problemas de aprendizagem em leitura, escrita e matemática*. Laboratório de Psicodiagnóstico e Neurociências Cognitivas, Unisal, Americana.

- [27] Montiel, J. M., Bartholomeu, D., Lima, F. F., Guidetti, A. A., Machado, A. A., 2011, Dificuldades de aprendizagem na escrita e habilidades sociais em crianças do ensino Fundamental, Revista Portuguesa de Dificuldades de Aprendizagem (RPDA), 1, 23-32.
- [28] Gifford-Smith, M. E., and Brownell, C. A., 2003, Childhood peer relationships: Social acceptance, friendships, and peer networks, Journal of School Psychology, 41, 235-284.
- [29] Bandeira, M., Rocha, S. S., Pires, L. G., Del Prette, Z. A. P., Del Prette, A., 2006, Competência acadêmica de crianças no ensino fundamental: Características sociodemográficas e relação com habilidades sociais, Interação em Psicologia, 10(1), 53-62.