

AN EXPLORATION OF THE DEVELOPMENT OF VIETNAMESE CHILDREN'S SELF-CONTROL ABILITY

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Abstract

The purpose of the present research is to explore the development of self-control ability during childhood. A group of 360 children (185 boys and 175 girls from grades 2, 4, and 6) participated in the survey. They completed the Children's Perceived Self-Control Scale (CPSC) which included the interpersonal self-control (ISC), the personal self-control (PSC), and the self-evaluation (SE) subscales. Results showed significant differences in ISC, SE and total scores among the second, fourth and sixth graders. On the total scores, the fourth graders had higher scores than the second and the sixth graders. Moreover, the scores of ISC of the fourth graders were higher than those of the sixth grades. There was no gender difference and interaction of gender and grade found. The results suggested that the development of self-control following a quadratic pattern increased and reached a peak in the fourth grade and then decreased during sixth grade time.

Keywords: *academic performance, self-control, self-ratings, Vietnamese children.*

Introduction

Children's self-control is critical for their development. It has a profound and lasting effect on one's life in adulthood. Research indicates that different self-control is generally predictive of academic performance in children (Job, Friese, & Bernecker, 2015). However, previous research has suggested that the influence of self-control may vary across cultures (Tangney, Baumeister, & Boone, 2004; Vazsonyi, Pickering, Junger, & Hessing, 2001; Vazsonyi, Wittekind, Belliston, & Van Loh, 2004; Rebellon, Straus, & Medeiros, 2008). The aim of the current research was to explore the development of self-control ability during childhood. The research examined children's self-control of students in the primary and middle school located in Southern Vietnam.

A substantial body of research has reported significant associations between children's levels of self-control and a variety of academic performance. One teacher used ratings of first graders' self-control found that higher levels of self-control were related to early and later academic achievement (Matthews, Ponitz, & Morrison, 2009). Another research found that children who were better able to self-control scored higher on assessments of reading, math, and language abilities (NICHD Early Child Care Research Network, 2003). A third research, focusing particularly on children from low-income families, found that self-control was associated with both improved academic achievement and improved social skills (August, Egan, Realmuto, & Hektner, 2003).

Other studies have followed children over time, revealing that higher levels of self-control predict more positive outcomes years later. Higher teacher ratings of self-control in preschool are related to stronger math and language skills in kindergarten (Blair & Razza, 2007). And, self-control in low grade is related to reading achievement in high grade (Liew, McTigue, Barrois, & Hughes, 2008; Komarraju, & Nadler, 2013). In middle school, self-control has been associated with higher levels of academic achievement overall (Barber, Munz,

Bagsby, & Grawitch, 2009). Research has also found that adults with higher levels of self-control have better grades in college and are more emotionally stable and self-esteem and have better interpersonal skills and relationships (Tangney, Baumeister, & Boone, 2004).

Research has examined a variety of child academic performance related to self-control. Studies have shown that different children's self-control is related to academic development in children. Specifically, studies have shown that self-control behavior varies as a function of age (Logue, Forzano, & Ackerman, 1996), self-control increases with age (Gottfredson & Hirschi, 1990; Vazsonyi & Jiskrova, 2017), and girls children had higher levels of self-regulation than boys children (Logue et al., 1996). Although research has established results for children's self-control and academic performance in various regions including Asian countries (Liu et al., 2017; Tangney et al., 2004; Wang, Zauszniewski, & Burant, 2016; Zauszniewski, Bekhet, & Bonham, 2010). However, the application of such scale in measuring self-control in Vietnamese children is still limited. To fill this gap, our research is conducted to empirically explore children's self-control in Vietnam. The aims of this research are to measure perceived self-control among Vietnamese children.

The research starts with reviewing the empirical literature of children's self-control. A simple analytical framework is introduced in the second section, which is followed by research methodology of research, results of research, and discussion. The last section is conclusions.

Methodology of Research

Research Hypotheses

The following null hypotheses were tested:

Ho₁ (main effect): There is no significant difference between grade two, grade four and grade six groups of children when they are compared simultaneously on the Children's Perceived Self-Control Scale, the Interpersonal Self-control, the Personal Self-control, and the Self-evaluation.

Ho₂ (main effect): There is no significant difference between boy and girl groups of children when they are compared simultaneously on the Children's Perceived Self-Control Scale, the Interpersonal Self-control, the Personal Self-control, and the Self-evaluation.

Ho₃ (interaction effect): There is no significant interaction between grades and gender groups of children when they are compared simultaneously on the Children's Perceived Self-Control Scale, the Interpersonal Self-control, the Personal Self-control, and the Self-evaluation.

Participants

The research participants were 360 Vietnamese children. Participants were selected randomly from students of 11 primary and middle schools located in southern Vietnam. All participants provided informed consent after receiving an explanation of the purpose of the research. The research was approved by the ethics committee of the Ho Chi Minh City University of Education. There were more boys (51.4%) than girls (48.6%) among the 360 Vietnamese children who were surveyed. Of these, 197 (54.7%) were primary school students, and 163 (45.3%) were middle school students. 71 of these students were in grade 2, 126 were in grade 4 and 163 were grade 6 students. Table 1 shows the distribution of participants in the age by gender groups.

Table 1. Number of participants in grade by gender groups.

Grade	Grade Group		Total
	Boy	Girl	
Grade 2	28	46	74
Grade 4	70	47	117
Grade 6	88	81	169

Questionnaires

The Children's Perceived Self-Control Scale (CPSC) based on the original Humphrey (1982) including 11 questions total in the interpersonal self-control (ISC), the personal self-control (PSC), and the self-evaluation (SE) subscales. The scale was translated into Vietnamese. It is designed for children from 8 to 12 years of age. Children are presented with the scale under the title of "Usually That's Me," and asked to respond either "Usually Yes" or "Usually No" according to how well the questions describe them. Reliability estimates, yielded a correlation of .71 for the total scale with subscale correlations of .63 for ISC, .63 for PSC, and .56 for SE (Humphrey, 1984). The internal consistency reliability estimate for this sample was .66. Then calculated the scores for scale, as well as the sum of all questions on the Children's Perceived Self-Control Scale.

Procedure

A 3×2 factorial design was used. The independent variables were two children characteristics: grades (2, 4 and 6) and gender (boy and girl). Four dependent variables were measured: Children's Perceived Self-Control Scale (CPSC), Interpersonal Self-control (ISC), Personal Self-control (PSC), Self-evaluation (SE). Participants and their parents were given consent forms and informed of their right to refuse participation in the program without consequence. They were asked to complete the following questionnaire: the Vietnamese versions of the Children's Perceived Self-Control Scale (CPSC) based on the original Humphrey (1982) during the school day, in the classrooms, with research assistants reading the questions aloud. All participants were instructed to read the questionnaire questions carefully and choose the responses that best described themselves. None of the participants refused to answer the questionnaire and they were asked to select the option which best corresponded to their beliefs, by circling the number in front of the selected option.

Statistical Analysis

Statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS 22.0). Descriptive statistics was used to analyze the data collected. A two-way MANOVA was performed with two independent variables (gender and grade) and subscales of the CPSC as dependent variables. The average item mean, average standard deviation, F values and effect sizes from MANOVA were calculated for each of the scales of the CPSC Questionnaire. These analyses were used to investigate differences in interpersonal self-control, the personal self-control, and the self-evaluation of primary and middle students according to grade level, and gender.

Results of Research

Descriptive Analysis

According to the norms from the CPSC (Humphrey, 1984), the participants scored in the average range on the self-control measure. The mean score for the sample on the CPSC (total score) was 6.04 (SD = 1.71). The mean score for the ISC subscale was 1.67 (SD = .86). The mean score on the PSC subscale was 2.07 (SD = .81). The mean score on the SE subscale was .98 (SD = .64). Table 2 presents descriptive statistics of dependent variables including CPSC, ISC, PSC and SE results by gender and grade groups.

Table 2. Number of participants in grade by gender groups.

Gender	Grade Group			
	Grade 2	Grade 4	Grade 6	Combined
Boy(M)	28	70	88	186
CPSC				
M	5.679	6.643	5.739	6.020
SD	.317	.201	.179	.139
ISC				
M	1.571	1.843	1.636	1.684
SD	.163	.103	.092	.071
PSC				
M	2.000	2.257	1.943	2.067
SD	.154	.097	.087	.067
SE				
M	1.107	1.071	.841	1.006
SD	.118	.075	.067	.052
Girl(M)	46	47	81	174
CPSC				
M	6.043	6.553	5.704	6.100
SD	.248	.245	.187	.132
ISC				
M	1.804	1.830	1.444	1.693
SD	.127	.126	.096	.068
PSC				
M	1.957	2.149	2.123	2.076
SD	.120	.119	.090	.064
SE				
M	1.174	1.170	.802	1.049
SD	.092	.091	.070	.049

Inferential Analysis

The null hypotheses were tested using a two-way multivariate analysis of variance (MANOVA). To use MANOVA, the multiple dependent variables should be related to each other at a low to moderate level (Pallant, 2016). More specifically, high correlation (.50 to 1) among dependent variables shows multicollinearity and small correlation (.10 to .29) among dependent variables show singularity. Table 3 revealed that all values were more than .10 which provides controlling singularity assumption. Besides, Pallant (2016) stated that correlations around .8 or .9 cause violation of multicollinearity assumption. Since all values were under .8, multicollinearity the assumption was also checked.

Table 3. Correlation matrix.

	CPSC	ISC	PSC	SE
CPSC	1	.597**	.615**	.443**
ISC	-	1	.024	.105*
PSC	-	-	1	.045
SE	-	-	-	1

** . Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

MANOVA is robust to violations of homogeneity of variance/covariance matrices if the sizes of groups are nearly equal or if the size of the largest group is less than about 1.5 times the size of the smallest group (Leech, Barrett, & Morgan, 2005). Although the largest group in this research ($n = 88$) was about 3.14 times larger than the smallest group ($n = 28$), the multivariate homogeneity of covariance matrices tested with Box's M test revealed that the M value of 49.700 was not significant ($p = .554$). Therefore, the assumption of homogeneity of covariance matrices was satisfied.

The MANOVA revealed a significant multivariate effect for grade group, Wilks' lambda = .891, $F_{(8, 702)} = 5.21$, $p < .01$, partial $\eta^2 = .056$, and a non-significant multivariate effect for gender, Wilks' lambda = .999, $F_{(4, 351)} = .10$, $p > .05$, partial $\eta^2 = .001$. A non-significant multivariate effect for interaction was also found, Wilks' lambda = .981, $F_{(8, 702)} = .85$, $p > .05$, partial $\eta^2 = .010$. Therefore, the results suggested that the first hypothesis (Ho1) was rejected, but the second hypothesis (Ho2) and third hypothesis (Ho3) were not rejected.

Based on the significant effects found from the MANOVA, a separate two-way univariate analysis of variance (ANOVA) for each of the dependent variables was conducted without undue inflation of the experiment wise Type I error (Grimm & Yarnold, 1995). The Levene's test revealed that the assumption of homogeneity of variances was met for CPSC [$F_{(5, 354)} = .95$, $p > .05$], ISC [$F_{(5, 354)} = .94$, $p > .05$], PSC [$F_{(5, 354)} = .37$, $p > .05$] and for SE [$F_{(5, 354)} = .41$, $p > .05$].

The ANOVA results as shown in Table 4 revealed significant grade effects on ISC [$F_{(2, 354)} = 4.01$, $MSE = .74$, $p < .05$], SE [$F_{(2, 354)} = 10.49$, $MSE = .39$, $p < .01$] and total scores [$F_{(2, 354)} = 9.64$, $MSE = 2.81$, $p < .01$] among the second, fourth and sixth graders (2nd grade: $M_{ISC} = 1.71$, $M_{SE} = 1.14$, $M_{total} = 5.90$; 4th grade: $M_{ISC} = 1.83$, $M_{SE} = 1.11$, $M_{total} = 6.60$; 6th grade: $M_{ISC} = 1.54$, $M_{SE} = .82$, $M_{total} = 5.72$).

Table 4. Combined univariate ANOVA table.

Source	Dependent Variable	Sum of Squares	df	Mean Square	F	p	Partial η^2
Corrected Model	CPSCS	58.611 ^a	5	11.722	4.160	.001	.055
	ISC	8.605 ^b	5	1.721	2.322	.043	.032
	PSC	5.099 ^c	5	1.020	1.538	.177	.021
	SE	8.719 ^d	5	1.744	4.435	.001	.059
Intercept	CPSCS	11326.460	1	11326.460	4019.269	.001	.919
	ISC	879.000	1	879.000	1185.983	.001	.770
	PSC	1323.503	1	1323.503	1996.054	.001	.849
	SE	325.727	1	325.727	828.472	.001	.701
Gender	CPSCS	.495	1	.495	.176	.675	.000
	ISC	.007	1	.007	.009	.924	.000
	PSC	.007	1	.007	.011	.918	.000
	SE	.138	1	.138	.352	.553	.001
Grade	CPSCS	54.370	2	27.185	9.647	.001	.052
	ISC	5.957	2	2.978	4.019	.019	.022
	PSC	2.787	2	1.394	2.102	.124	.012
	SE	8.253	2	4.126	10.495	.000	.056
Gender * Grade	CPSCS	2.532	2	1.266	.449	.638	.003
	ISC	2.281	2	1.141	1.539	.216	.009
	PSC	1.568	2	.784	1.182	.308	.007
	SE	.353	2	.177	.449	.639	.003
Error	CPSCS	997.586	354	2.818			
	ISC	262.370	354	.741			
	PSC	234.723	354	.663			
	SE	139.181	354	.393			
Total	CPSCS	14221.000	360				
	ISC	1281.000	360				
	PSC	1794.000	360				
	SE	496.000	360				
Corrected Total	CPSCS	1056.197	359				
	ISC	270.975	359				
	PSC	239.822	359				
	SE	147.900	359				

a. R Squared = .055 (Adjusted R Squared = .042)

b. R Squared = .032 (Adjusted R Squared = .018)

c. R Squared = .021 (Adjusted R Squared = .007)

d. R Squared = .059 (Adjusted R Squared = .046)

On the total scores, the fourth graders were found higher than those children of the second and the sixth graders. Moreover, the fourth graders were higher than those of the sixth grades on the scores of ISC and SE. The results suggested that the development of self-control was with a quadratic pattern which increased to reach a high point in the fourth grade and then decreased in older childhood.

Discussion

This research revealed significant effects of grade on the ISC, SE and total scores among the second, fourth and sixth graders. Though the effect sizes for the significant results were smaller than typical (.022, .056, and .052, respectively), the sensible importance of the results is noted as they assist teachers in understanding their students' characteristics and behaviors and regulating their teaching accordingly.

Results from this research support Gottfredson and Hirschi (1990) hypothesis that self-control, in the main, develops throughout childhood (3 to 11 years old or kindergarten to grade 5). This prediction was supported by many studies. Hay and Forrest (2006) investigation, the bulk of youngsters between the ages of 7 and 15 (grade 1 to grade 9), showed extensive stability in self-control. Similarly, based on Coyne and Wright (2014) found that rank-ordering of people with respect to their level of self-control remained stable in a sample of children between kindergarten and fifth grade. On the other hand, our result is in line with earlier studies from Nevada (Perkins & Gelfer, 1995), Ohio (Parker, 2013), and Pennsylvania (Duckworth, Kim, & Tsukayama, 2013).

It is during early adolescence that children transition from primary to middle school occurs. During this transition, some serious changes in the living environment (e.g., parents divorcing, losing their jobs, close friends moving away, greater emphasis on teacher control and fewer opportunities for student decision making in classroom) are at odds with developmentally normative psychological changes (e.g., self-perceptions as autonomous, independent decision makers). The misfit between educational environment and psychological needs makes early adolescence a vulnerable period during which even temporary decreases in self-control might have a particularly detrimental impact on academic performance (Duckworth et al., 2013; Parker, 2013; Perkins & Gelfer, 1995).

Conclusions

Results from the current research support Gottfredson and Hirschi's (1990) hypothesis that self-control principally develops during childhood, followed by stabilization in late childhood, around the age of 10 (grade 4), at the point of transition into early adolescence. We also found declines in self-control between ages 10 to 12 (grade 4 to grade 6), which was supported by the result of Winfree et al.'s (2006) research. Similarly, Na and Paternoster (2012) found changes in self-control that might occur at least for some individuals even during adolescence. The Vietnamese children's development of self-control was with a quadratic pattern which increased to reach a high point in the middle childhood and then decreased in early adolescence.

To the best of the authors' knowledge, this is the first research to describe these differences in self-control among Vietnam children. The results of this research are necessary for Vietnamese teachers to have better understanding about children's self-control characteristics at this stage in order to achieve a better educational efficiency. Further research is recommended to identify the underlying reasons for no gender differences in self-control ability among students in Southern Vietnam. It is also suggested that research can be conducted involving students from the different area in Vietnam so that the outcomes can be generalized.

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