

The Long-term Impact of Philosophy for Children: A Longitudinal Study (Preliminary Results)

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ABSTRACT: Twenty years ago, the European School of Madrid (ESM) began to implement P4C. Félix García Moriyón trained a group of teachers through an intensive workshop and Elena Morilla coordinated the whole process thereafter. P4C was integrated within the regular curriculum and students attended one class per week since primary school (6 years of age) to the end of high-school (18 years of age). After obtaining informed consent from both the school staff and the students' families, a longitudinal study began in 2002 for investigating the presumed lasting positive impact of P4C over cognitive and non-cognitive factors, and also over academic achievement. To the best of our knowledge this research is unique because there is only one long-term study (Malmhester, 1996) and the remaining research was made in the short-term (one year or less) (García & Cebas, 2004). So far we have been following more than 400 students in the treatment group (P4C) and more than 300 students in a control group. As required, both groups shared closely similar social and cultural backgrounds: both are private schools in a small village, mainly residential, 18 km and 32 km away from Madrid, same highway A-6, etc. Students came from middle-upper class families, and middle-upper social and cultural status. We recruited six cohorts from the P4C school and five cohorts from the control school across the years. Data were collected at three time points: 2nd grade (8 years), 6th grade (11-12 years), and 4th grade of secondary school (16 years). The administered measures tapped cognitive abilities (IGF and EFAI), basic personality traits (EPQ), and academic achievement (school grades and standardized tests). This research tests the hypothesis that "IF P4C improves cognitive and non-cognitive basic psychological traits, THEN the treatment group will show greater scores in the standardized measures of both psychological factors". Here we present a summary of the evidence accumulated in the past 10 years. These were the main results: (1) P4C promotes an average advantage of half a standard deviation in general cognitive ability (≈ 7 IQ points), (2) the average advantage is especially noteworthy in the lowest tail of the cognitive distribution across the years, (3) lower percentages of participants in the training group can be found at the risk area, and (4) P4C children are more prone to pro-social behavior, but they are also a bit more emotionally unstable.

INTRODUCTION

P4C was originally devised for enhancing cognitive and non-cognitive (affective) basic factors. Matthew Lipman reported one study assessing the impact of P4C in the first publication devoted to the program (Lipman, Sharp, Oscanyan, 1980). The main question was: "is P4C educationally significant?"

The answer was mainly positive for three areas: (1) *Reading and mathematics*: the overall impact of philosophy for children on reading and math performance was highly significant. (2) *Reasoning*:

improvements in creative reasoning (the capacity to generate new ideas, to discover feasible alternatives, and to provide reasons) and formal reasoning were also significant. (3) *Academic Readiness*: teachers provided highly positive feedback; students were rated as showing more curiosity, greater orientation towards their tasks, more considerate of one another, and with better reasoning skills (p. 224).

Since this pioneer research, several studies have analyzed the program, not only considering cognitive skills, but also non-cognitive traits (García y Cebas, 2005). The general trend supports a positive impact, but the evidence is largely heterogeneous (García, Rebollo, Colom, 2005; García, Colom, Lora, Rivas y Traver, 2002). It is noteworthy that, generally speaking, cognitive training programs do have a positive impact in the short-term, but the effect vanishes in the medium and long-term (Baumeister & Bacharach, 2000).

Therefore, the core question remains unanswered: is it possible to obtain long-lasting cognitive and non-cognitive improvements by doing P4C? The proper response to this question requires the administration of the program across the school years, not just for a reduced period of time. This was the main goal of the present longitudinal research.

METHOD

OVERVIEW

This longitudinal research is planned for lasting twenty years. We strongly think this is the only way for obtaining a proper answer regarding the question of whether or not it is possible to promote cognitive and non-cognitive basic traits by doing P4C. The main dependent measures were (a) basic cognitive skills, (b) personality traits, and (c) academic achievement. Table 1 shows when these features are measured.

TABLE 1

2nd grade	6th Grade	9th Grade	10th Grade	12th Grade	Post grade
Compulsory education				No compulsory	
Primary School		Secondary Education			University / Working World
Intelligence	Intelligence	Test of Academic achievement	Intelligence	Intelligence	Structured interview and record data
Personality	Personality		Personality	Personality	
Academic achievement	Academic achievement		Academic achievement	Academic achievement	
	Test of academic knowledge			Test of Academic achievement	

455 students were included in the treatment/experimental group (CEM). As noted above, students attend P4C one hour per week across 12 school years (from first year of primary school to the end of high-school). IAPC was the basic material during the compulsory period (10 years) and additional material was employed in the remaining two years.

On the other hand, the control group was composed of 321 students recruited in Colegio Parque de Galapagar (CPG). As seen above, these students mirror those recruited in the treatment group for the majority of the relevant socio-demographic variables. For obvious reasons, these students were not submitted to P4C. The recruitment process began in 2005. Table 2 shows the number of students recruited in both schools across the years.

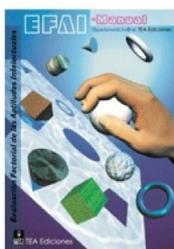
TABLE 2

<u>School</u>	<u>Cohort</u>						<u>Total</u>
EUROPEO (P4C)	2002	2003	2004	2005	2006	2007	
N	65	82	83	77	79	69	455
PARQUE (Control)	2005	2006	2007	2008	2009		
N	83	57	54	76	51		321

STANDARDIZED MEASURES

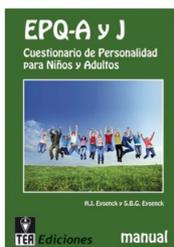
Cognitive abilities were measured by two closely related standardized batteries: EFAI and IGF (Figure 1). These batteries comprise a set of subtests tapping verbal ability, numerical ability, spatial relations, and abstract reasoning. These four subtests are collapsed in a verbal (Gc) and a non-verbal (Gf) index. Furthermore, these indexes are collapsed in a general ability score (g).

FIGURE 1



COGNITIVE ABILITY (*Intelligence*):

- GENERAL (G)
 - VERBAL (Gc)
 - Language
 - Math
 - NON-VERBAL (Gf)
 - Reasoning
 - Spatial



PERSONALITY:

- Psychoticism (P)
- Extraversion (E)
- Neuroticism (N)
- Honesty (S)

Non-cognitive traits were measured by the EPQ-A and the EPQ-J. Both batteries measure four basic personality traits: Neuroticism (N), Extraversion (E), Psychoticism (P), and honesty (S) (Eysenck & Eysenck, 1989) (Figure 1).

Finally, academic achievement was measured by obtained school grades and performance in standardized tests of academic skills. The main assessed school topics were language and mathematics.

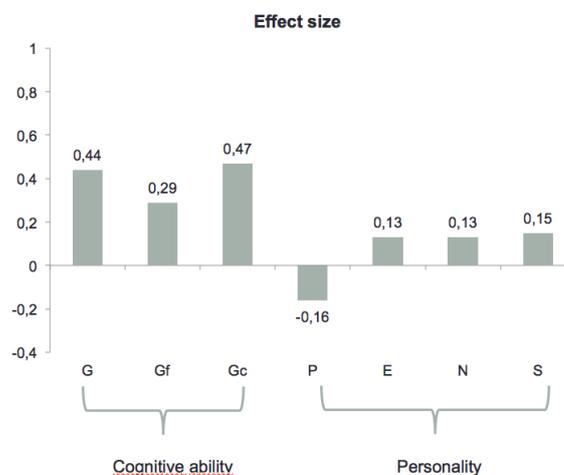
RESULTS

Here we show preliminary results obtained at two time points: 2nd and 6th of primary school. Therefore, 281 students from the treatment group (P4C) and 146 students from the control group were considered in the present analyses.

GLOBAL FINDINGS

FIGURE 2

Figure 2 shows the effect size (d) for cognitive ability (g , Gf , and Gc) and personality (P , E , N , and S).



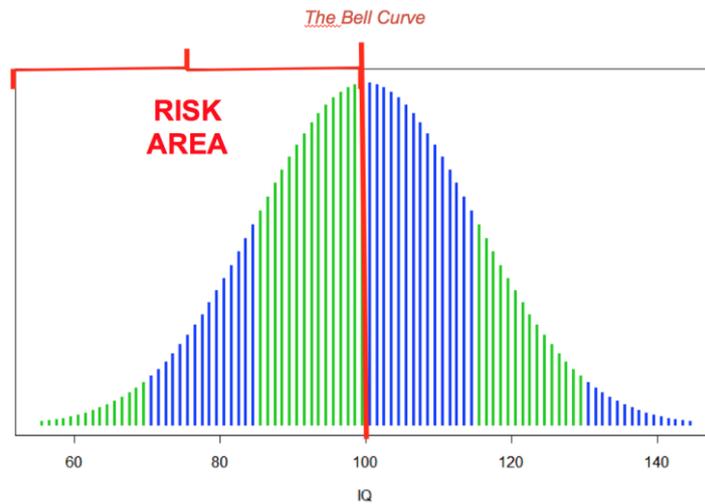
It can be seen that the treatment group outperforms (positive d value) the control group in g (general cognitive ability), Gf (fluid or abstract ability), and Gc (crystallized or verbal ability). The values are relatively large, because values greater than 0,2 are usually considered significant from an applied perspective (Cohen, 1980).

We converted these d values to the IQ scale (mean = 100, SD = 15) for comparative purposes. The results indicate that there is an advantage favouring the treatment group equivalent to 7 IQ points in general cognitive ability (g), 4 IQ points in fluid-abstract intelligence (Gf), and 7 IQ points in crystallized intelligence (Gc).

Regarding the measured personality traits, the obtained *d* values were substantially lower. The treatment group displayed higher levels of extraversion, neuroticism, and honesty along with lower levels of psychoticism. Therefore, there is one small trend suggesting that P4C students are more extraverted, more honest, more emotionally oriented, but also less emotionally stable.

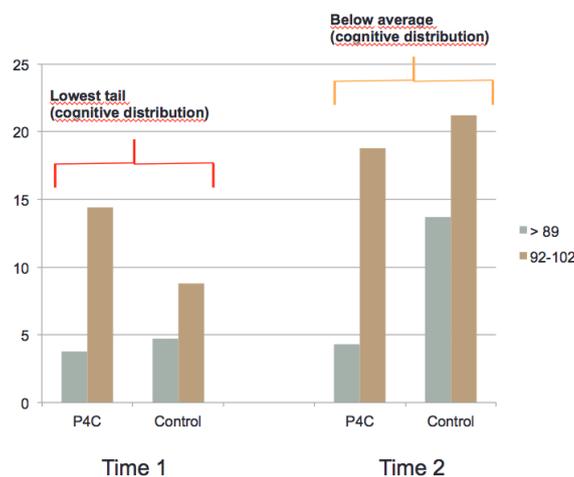
FURTHER ANALYSES

FIGURE 3



In addition to these global analyses, we also focused our attention in the lower trail of the ability distribution (80-90 and 90-100, Figure 3). Obtained results can be seen in figure 4.

FIGURE 4



The percent of students within the risk area is increased across the school years, as expected. Students with lower cognitive ability scores in first grade face greater challenges in successive years. However, it is important to note that this accumulation is substantially less visible for the treatment group (P4C). In ‘Time 2’, P4C students in the lowest tail of the cognitive ability distribution remain almost in the same range as in ‘Time 1’, whereas there is a great increment

for the control group. These are really interesting results, because they imply that P4C is especially positive for the more disadvantaged students.

DISCUSSION

To date, P4C seems to evoke an average advantage of half a standard deviation in general cognitive ability (≈ 7 IQ points). The ABECEDARIAN PROJECT, one of the best and most ambitious educational strategies aimed at fostering cognitive skills and coping with educational school failure, improves ≈ 5 IQ points (Craig et alia, 2012). We suggest that P4C is much more efficient because it requires much less investment (in terms of time, money, and effort) and it is naturally integrated within the school curriculum. P4C focuses on training teachers to conduct a philosophical inquiry, transforming the class room into a community of philosophical dialogue pursuing rigorous reasoning procedures.

The positive impact of P4C seems especially noteworthy in the lowest tail of the cognitive distribution, meaning that fewer participants from the training group are found within the so-called 'risk area'. Compulsory education usually favors those with higher cognitive skills and students with lower cognitive skills (particularly those under $IQ = 89$) fail in school with a high probability (Neisser et al., 1996, Nisbett et al., 2012). Improving their cognitive skills may enhance relevant copying strategies, and, therefore, could keep them outside the risk area.

With respect to the considered basic personality traits, P4C children seem more prone to pro-social behavior (lower levels of psychoticism and higher levels of extraversion and honesty). This might be a consequence of converting the class room into a community of philosophical inquiry: empathy, agreeableness, cooperation, attentiveness, and so forth, become non-cognitive factors systematically fostered (Garcia et al. 2002). Nevertheless, they also show higher levels of emotional instability. This latter finding may be related with a key characteristic of the program: participants are always asked to make questions and avoid absolute evaluations with respect to our world. Denying absolute truth is a philosophical approach opening children's minds and inviting them to explore novel approaches.

In closing, P4C seems to have a positive impact over basic cognitive abilities, namely, fluid-abstract and crystallized-verbal abilities. The impact over the considered non-cognitive traits is less clear, but a trend may be highlighted. We acknowledge that these are preliminary results and it may happen that, at the end of the day, the observed positive trends fade away. There is still a lot of work remaining (for instance, scholastic achievement measures must be incorporated into the whole picture). Finally, we note that cognitive training programs raise serious doubts among scientists. Their presumed positive impact is frequently questioned. Nevertheless, most of these programs depart from the main features characterizing our research. Many of these programs are administered during short periods of time, lasting from four weeks to 24 months. It is really difficult to find cognitive training programs administered across the entire school curriculum and this is what we are doing in the present longitudinal research.

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