



Does School Mentoring Enhance School Grades? Results of an Experimental Study

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1. Introduction

For the past decade, school mentoring has become widely popular all across western countries and Portugal is no exception. The diffusion of school mentoring programs is essentially based on the premise that it provides children and adolescents, who have experienced adversities in their lives, an opportunity to readjust their internal working models and to compensate losses in previous relationships with adults [1]. School mentoring in particular has been presented as a rather inexpensive and supposedly effective intervention to promote school achievement of students considered at-risk [2]. However, on the one hand, previous findings reveal mixed effects, with some studies demonstrating that students who benefited from school mentoring interventions improved their school grades [3] while others suggest opposite conclusions [4]. On the other hand, meta-analytical reviews on this topic show that school mentoring provides positive but marginal improvements of academic or educational outcomes ($d=0.13$) [1]. Considering the state of the art, the scope of this study is to better understand if students raise their school grades due to the fact that they were enrolled in a particular school mentoring program. This goal is all the more relevant because the mentoring program under study, called Metodologia TUTAL, is innovative. In this program, mentors are also teachers of the mentees. That is not common in school-based mentoring approaches in other countries, although previous findings have shown that having experience in educational roles might promote better outcomes for this sort of programs [1]. The central hypothesis tested is that the mentees improve their grades on Mathematics and Portuguese Language, as well as their average grade when compared to an equivalent group of students that did not benefit from a mentoring program. This comparison was made between the end of 2009/2010 school year as the pretest and the end of 2010/2011 school year as the posttest.

2. Method

2.1. Participants

The sample of this study consisted of 498 students from 27 classes of 7 Portuguese public schools that implemented Metodologia TUTAL. Of the 498 participants, 288 (57.8%), were boys and 210 (42.2%) were girls. By the time the implementation of the project began, their ages ranged from 9 to 18 years old ($M=12.68$, $SD=1.74$). Three hundred and one of the students (60.4%) were attending the second level of the Portuguese Basic Education (grades 5th or 6th) while the other 197 participants (39.6%) were attending classes at the third level (grades 7th, 8th or 9th).

The experimental group involved 257 students that were included in a mentoring program for the first time. One hundred and forty-eight (57.6%) were male and 109 (42.4%) female. One hundred and seventy three (67.3%) of them were attending second level of Basic Education and 84 (32.7%) were attending third level. The age of this group ranged from nine to 16 years old. ($M=12.80$, $SD=1.66$). Two hundred and forty-one participants (49.7%) were included in the control group. One hundred and forty (58.1%) were male and 101 (41.9%) were female. The age in this group ranged from nine to 18 years old. ($M=12.56$, $SD=1.88$). One hundred and twenty were attending the second level (53.1%) while 113 (46.9%) were attending the third level of Basic Education.

The participants were selected according to four non-cumulative criteria documented by the individual school record: a) indication for supplementary classes because of underachievement problems; b) a record of, at least, one prior retention; c) history of school absenteeism; d) a record of disciplinary problems. These criteria were considered the most adequate, because they considered educational risk as well as behavioral risk.

2.2. Metodologia TUTAL

Metodologia TUTAL is a school mentoring program designed to endorse school achievement and to contribute to the reduction of school drop-out rates. It was developed by local non-profit-organizations, schools and policy makers of The Azores Islands, in Portugal, under a grant of the European Social Fund. Metodologia TUTAL is based on three main assumptions. First, mentoring is conceptualized as a means of support and orientation provided by a more experienced element (the mentor) to an adolescent (the mentee), throughout a long period of time (at least one school year). This process is aimed at enabling the accomplishment of the adolescent's potential in a co-responsible way [5]. Secondly, the program assumes that teachers are in a privileged position to be school mentors. Teachers were invited to participate in the program only if they met the two following criteria: a) being part of the schools' permanent staff, meaning that the mentoring relationship could last more than one school year, if necessary; b) having experience of informal mentoring in school or of some sort of social intervention in the community. The third assumption of Metodologia TUTAL is that school mentoring may represent an opportunity to add informality to educational relations, by setting a complementary relational context to the usual interpersonal framework between teachers and students.



2.3.Data collection and analysis

The data was gathered between March and September of 2011, through the examination of the complete personal record of each of the participants, after undertaking the necessary procedures to obtain the informed consent of their legal representatives. Whenever these records were incomplete, the school's computerized database was screened. After combining both methods of data collection, in 110 cases (22.1%), it was not possible to calculate an average school grade for the 2009/2010 or 2010/2011 school years or both, because the students were not evaluated, mainly because of absenteeism. The differences between the groups considering pre and posttest were calculated through unvaried variance analysis (ANOVA). The normal distribution of the variables was verified through the Kolmogorov-Smirnov test, with Lilliefors correction, while the homogeneity of variances was screened using the Levene's test. All of the statistical, descriptive and inferential analyses were conducted using PAWS 18 software. The p-value effects lower or equal to 0.05 were considered statistically significant. The data analysis also included the verification of the magnitude of the effects on the dependent variables explained by the independent variable, by calculating the eta partial square (ηp^2) as well as the magnitude of the differences between the experimental group and the control group by calculating Cohen's d.

3.Results

The results of this research show that the students enrolled in Metodologia TUTAL improved their grades compared with the control group and that the difference between the groups is statistically significant in Mathematics ($F(1,385)=15.348$; $p=0.000$), Portuguese Language ($F(1,385)=13.131$; $p=0.000$; $\eta p^2 =0.033$) and average grade ($F(1, 387)=38.244$; $p=0.000$; $\eta p^2 =0.210$). The results also show that the impact of the independent variable (to be included in Metodologia TUTAL or not) varies from marginal effects in Mathematics ($\eta p^2 =0.038$) and Portuguese Language ($\eta p^2 =0.033$) to a moderate effect in the case of the average grade ($\eta p^2 =0.210$). The dimension of the difference between the groups was also calculated. In the case of Mathematics ($d=0.39$) and Portuguese Language ($d=0.36$) the difference between the groups is moderate. In the case of the average grade the difference between the groups is considered high ($d=0.61$) [6]. In other words, the difference between the average result of a student enrolled in Metodologia TUTAL and a student of the control group is 27.7% higher in the case of the Mathematics grade, 25.6% higher for Portuguese Language grade and 38.3% higher in the case of the average grade.

4.Discussion

The present study compared the evolution of school grades of a group of students that were integrated in Metodologia TUTAL with the evolution of school grades of an equivalent group that were not enrolled in a school mentoring program. This comparison was made between the end of 2009/2010 school year and the end of 2010/2011 school year, considering it, respectively, as the pretest and the posttest. The results point out that the difference between the Mathematics, the Portuguese Language and the average school grades of these groups was statistically significant with the grades of the students that took part of Metodologia TUTAL being consistently higher compared to the grades of the control group. The effect of independent variable in the set of dependent variables is small for Mathematics and Portuguese Language grades and moderate, in the case of the average grade. Concomitantly, the magnitude of the differences between the groups is moderate for Mathematics and Portuguese Language and high for average school grade. These results generally show that school mentoring delivered by Metodologia TUTAL seems effective in improving school achievement. Compared to other mentoring programs, Metodologia TUTAL seems more effective in promoting better educational outcomes [1] [2]. This is probably due to the fact that this particular school mentoring program is ran by teachers, while in other programs, mentoring activities are organized by volunteer adults coming from the community. This may have made mentors in Metodologia TUTAL more prone to support the mentees' instrumental needs, based on their background and knowledge. The fact that school mentoring seems more effective in raising the average school grade of the students is also an important feature of this study, because composite measures of school achievement are more reliable better indicators of educational efficacy. This means that besides being effective in raising the achievement of the students in particular subjects, Metodologia TUTAL seemed more important as a context to nurture educational success in general. In our view, the major implication of this study is to claim for a more detailed attention to the selection of mentors. It seems especially relevant that programs provide mentoring relationships based on the educational skills of the mentors, as well as on their knowledge of the schools' routines and norms. Nevertheless, school mentoring must not be transformed in a context focused only on academic or other instrumental goals. Mentoring relationships have to balance the support given to the different needs of the students [7]. Although this study provides these contributions, some methodological limitations must be addressed in future research projects. Longitudinal studies that target the evolution of school mentoring outcomes throughout longer periods of time, as well as qualitative studies that identify the relational processes that enabled the improvement of school achievement are among the most prominent research recommendations.



5. Conclusion

School mentoring has been presented as a way to fulfill the needs of children and youth at-risk. The instrumental effectiveness of mentoring seems to be marginal and inconsistent according to previous findings. The present study highlights that probably the marginal impact of school mentoring in school outcomes can be, in part, due to the mentor's profile. The general improvements in Mathematics, Portuguese and average grades made by students enrolled in Metodologia TUTAL compared to the control group underline the instrumental focus of Metodologia TUTAL and how teachers can be effective in promoting better educational outcomes when they are also mentors.

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