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Influence of Age and Schooling on the Development of Moral Judgment

Influencia de la edad y de la schooling en el desarrollo del juicio moral

Bonifacio Barba Casillas
jbarba@correo.uaa.mx

Departamento de Educación
Universidad Autónoma de Aguascalientes

Ave. Universidad 940
20100, Aguascalientes, Ags., México

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Abstract

This article presents an evaluation of the moral development of 111 professionals, 84 of which work in basic education. J. Rest's Defining Issues Test was applied, and mean differences were assessed with the t test ($\alpha = 0.05$). A regression analysis was done. Using the arithmetic means of the moral stages and of the postconventional moral index (P index) the moral profile of all the subjects were described in relation to four variables. The relationship of the P index with schooling, age and teaching level was analyzed, and the adults were compared with middle school and high school students.

The professionals have a profile of moral development with a prominence of stage 4 of moral judgment, a feature shared with the students. The former have equilibrium in the use of Rest's moral judgment schematics as well as a greater postconventional moral growth than do the latter. Among the professionals there are significant differences in the P index related with schooling, age and work level. The association between age and postgraduate study is the weightiest factor in postconventional moral growth.

Keywords: Development of moral judgment, professionals, principled moral reasoning, teachers of basic education, Kohlberg

Resumen

Se presenta la evaluación del desarrollo moral de 111 profesionales de los cuales 84 laboran en educación básica. Se aplicó el Defining Issues Test de J. Rest y se valoraron las diferencias de medias con la prueba t ($\alpha = 0.05$) y se hizo un análisis de regresión.

Usando las medias aritméticas de los estadios morales y del índice de moral postconvencional (índice P) se describen los perfiles morales para el total de sujetos y en relación con cuatro variables. Se analiza la relación del índice P con escolaridad, edad y nivel de trabajo docente y se comparan los adultos con estudiantes de secundaria y bachillerato.

Los profesionales tienen un perfil de desarrollo moral con preeminencia del estadio 4 de juicio moral, rasgo compartido con los estudiantes. Los primeros tienen equilibrio en el uso de los esquemas de juicio moral de Rest así como un mayor crecimiento moral postconvencional que los segundos. Entre los profesionales existen diferencias significativas en el índice P relacionadas con escolaridad, edad y niveles de trabajo. La asociación entre edad y posgrado es el factor de mayor peso en el crecimiento moral postconvencional.

Palabras clave: Desarrollo del juicio moral, profesionales, razonamiento moral de principios, docentes de educación básica, Kohlberg.

Introduction

The interest in ethical behavior and people's moral development is increasingly manifested in various fields of the social sphere. Frequently stressed among them is the moral character of education and the necessity for the school to promote

moral education or the formation of certain values with greater efficiency in students of all educational levels. Generally, in educational action more attention has been paid to moral development and to the formation of student values; in Mexico there are few studies on those of the teachers.¹

This text presents information on the moral judgment development of a group of adults, the majority, i.e. 77% of the total, basic education teachers in active service. Our objectives are threefold: first, to assess levels of moral judgment development of various groups of adults; second, to compare the development of moral opinion among groups of adults, depending on some variables; third, to compare the moral judgment development of adult subjects with a group of high school and high school students.²

The information was compiled through the integration of groups of adults according to their formal academic activities, in circumstances specified below. The comparison of adult's moral judgment development with that of middle school and high school students was made with information on the later, taken from another work (Barba, 2001).³ While the group of adults is smaller than those of middle school and high school students, the opportunity to compare the profiles of moral development is relevant, and allows the observation of certain interesting features. The value of the work lies, therefore, in addressing a relevant issue like knowledge about the moral judgment development of groups of adults of different age and education—variables particularly significant in the cognitive-developmental approach to morality because of their association with the moral growth of persons (Rest, 1994, p.15; Rest 1990, p.6; Rest, Narvaez, Bebeau & Thoma, 1999, p.116).

Rationale and study method

The work was done in places where diverse groups of people were carrying out academic activities in their curricula. At the time of compiling the information, each group was starting or had made a certain degree of progress in an academic program. The particular situation of the groups was as follows: two groups composed of primary education teachers were working on the final stage of a Master's Degree in education; two other groups consisting mostly of educators, were halfway through a certificate course in Education for Peace and Human Rights; a group of non-teaching professionals were halfway through a specialty course on human rights; a group of middle-school teachers were starting a certificate course on moral education in the school; finally a group of personas from outside the field of education had finished two-thirds of a program for a B.A. as Advanced Technician in Preventive Policy.

The total number of subjects who participated in the evaluation was 111, and in accordance with the objectives of the work, were grouped in the following manner:

Table I. Groups of professionals

Subjects	Number of participants
Master's Degree in Education (M.A.Edu)	19
Specialty: certificate in human rights education (HR)	53
Middle school teacher (MST)	20
Advanced technician in preventive policy (AT)	19
Total	111

The 6-story *Defining Issues Test*, designed by James Rest, was applied to the groups.⁴ This test evaluates levels of moral reasoning according to the theory of Lawrence Kohlberg, who, based on the thought of John Dewey on the development of morality and the work of Jean Piaget on the formation of moral judgments in children, proposed a theory that completed and extended the cognitive-evolutionary focus of morality initially proposed by Piaget (1985). In this perspective of the acquisition of morality proposed by Kohlberg, moral judgment is understood as a component of moral action. (Kohlberg, 1992; Rest, 1983; Bebeau, Rest and Narvaez, 1999).

The vision constructed by Kohlberg is a conceptual structure organized in three levels of moral judgment. Each is composed of two stages. The levels and their stages are epigenetic, represent differentiated sociomoral structures of judgment and perspective which have cognitive development as a necessary, but insufficient condition. The moral development consists in the advance or progressive movement toward higher stages (Kohlberg, 1992, 1974). Summarized, the levels and their stages are defined thus:⁵

Pre-conventional level: concrete individualistic perspective of self-interest.

Stage 1. Heteronomous morality: punishment-obedience orientation and egocentric social perspective.

Stage 2. Individualist morality, with instrumental purpose and interchange; the rules are followed according the one's own interests and needs, allowing others to do the same.

Conventional level: perspective of a member of the society.

Stage 3. Morality of mutual interpersonal expectations, relationships and interpersonal conformity. The social perspective is of the individual in relationship with other individuals.

Stage 4. Morality of social system and conscience motivated to do the accepted duty and uphold the law. The social perspective distinguished between the interpersonal point of view and the social.

Postconventional Level: perspective 'previous to the society', not relative to or based on principled moral reasoning.

Stage 5. Morality of the social contract or of utility and individual rights. The social perspective is that of the rational individual conscious of values and rights prior to the social contract; it considers the moral and legal points of view.

Stage 6. Morality of universal ethical principles. The social perspective consists in the recognition of universal moral principles from which are derived social commitments, since people are ends in themselves, and should be recognized as such.

Rest and his collaborators have proposed—based on many years of research using the DIT and considering some of the criticisms of Kohlberg's theory of stages, and advanced conceptual focus—the neo-kohlbergian approach, in which the rigid six-stage structure is flexibilized and more attention is given to the social nature of morality. Conceptually, the new focus is supported by the theory of the schematics of research on social knowledge (Rest, Narvaez, Thoma and Bebeau, 2000; Rest, Narvaez, Bebeau and Thoma, 1999).

The moral development schematics proposed by Rest and his collaborators in place of Kohlberg's stages, are the following: the schematic of personal interest, derived from Stages 2 and 3, develops in infancy, and stops being central around the age of 12; the schematic of maintaining the norms, derived from Stage 4, represents the 'discovery of society', the greatest sociocognitive advance of adolescence, and in third place, the postconventional schematic derived from Stages 5 and 6, in which "moral obligations must be based on shared ideals, must be fully reciprocal and open to scrutiny" (Rest, Narvaez, Thoma & Bebeau, 2000, p. 389). In the section on analysis of the information, references will be made to the schematics as well as to the stages of moral judgment.

The fundamental variable of the study presented here is moral judgment, which is to say, the type of judgment made "on what is right and just about an action" (Kohlberg, 1974, p. 228). Its development is analyzed in relation to other variables such as age, sex, schooling and educational level of the work performed. This is included because the majority of the study subjects are teachers in different levels of basic education, and because of that, it is interesting to consider the categories of labor variables in the evaluation of moral judgment, given the different pedagogical perspectives assumed in the work of teaching in basic education levels.

The scores obtained on the test are expressed in percentages which indicate the use the subject or group of subjects made of the perspective of each of the stages of moral judgment when facing moral dilemmas and assessing the possible courses of action. With the scores of Stages 5 and 6 relative to the postconventional level of morality, there was produced the P index, or index of

'principled moral reasoning'. This constitutes a measurement that expresses "the relative importance which a subject gave to the consideration of moral principles in making a decision about moral dilemmas" (Rest, 1990, p.17, see also Rest, 1994). The set of scores made for the stages and the P Index, allowed us to create a profile of moral development for the individuals and for each of the groups.

This work presents the profiles based on the medians of Stages 2 to 6 for moral judgments and the medians of the P Index for the *total no. of subjects*, and for each of the four groups integrated depending on the objective number two, i.e. the comparison of the groups of adults derived from the categories of the variables mentioned above.⁶ The 't' test was done with an alpha value of 0.05 to assess the mean differences, and some analyses of regression were done.

Analysis of results

The first data analysis was performed with the *total no. of subjects* and groups for the gender variable. The mean scores in each of the stages and in the P Index are presented in Table II. There it can be seen that the profile of moral development of the set of subjects demonstrates a growth that goes from Stage 2 to Stage 4; this takes precedence, followed by Stage 3. Another element is that the means in Substages 5A and 5B and in Substages 5A and 5B and Stage 6 drop in relation to Stages 3 and 4, which show us, according to the structure of Kohlberg's levels of moral judgment, that the level most used by the set of subjects is that of conventional morality, since the values of their two stages represent a little more than 50% of the judgments made.

If the schematics proposed by Rest and collaborators are analyzed from another angle, it turns out that there is a balance between the three schematics of moral reasoning, since the sum of the scores of Stages 2 and 3—represent or give rise to the schematic of personal interest—equals 29.95; the mean of the maintenance schematic of the rules—derived from Stage 4—rises to 30.26, and finally, that of the postconventional schematic expressed in the P Index equals 30.88. In sum, the set of subjects uses the three schematics of moral reasoning in equal proportions.

The moral growth profiles of the groups of men (mean = 42) and women (mean = 69) have the same features as the set of persons. The mean difference between the men and the women in Stages 2 to 6 are not statistically significant, which indicates that the pattern of their moral development is similar. Neither group has an advantage over the other in either of the stages.

Table II. Average grades by stage and in the P index of the *total no. of subjects* and by gender

Stages	Total no. of subjects	Men	Women
Stage 2	7.08	7.25	6.97
Stage 3	22.87	22.37	23.17
Stage 4	30.26	31.86	29.29
Stage 5A	16.07	16.50	15.80
Stage 5B	8.70	7.45	9.46
Stage 6	6.39	6.14	6.53
P Index	30.88	29.40	31.78

In the principled moral reasoning, as expressed in the P Index, there is a small difference between the means of the men and those of the women in favor of the latter, but it is not significant. The use of principled moral reasoning is similar in both genders.

As for the P Index of all adult subjects that have a mean value of 30.88, for the moment only two relevant questions are discussed, since on analyzing below the relation between schooling and the morality of principles there are presented additional data, and some pertinent comparisons are made relative to moral development. The first question concerns the fact that the adult subjects gathered in this study have a mean of principled moral reasoning a little more than 12 percentage points above the mean of a group of middle school and high school students evaluated in another work with the same instrument (Barba, 2001). This shows a greater moral growth in adults, as compared with middle school and high school students, that is, in younger subjects with less schooling. There is a positive effect of these two variables on moral development.

The second issue consists in noting that the mean of reasoning of principles of the adults in this study is lower than that of similar groups in schooling belonging to other sociocultural contexts.

After considering this basic profile of adults' moral development, we can ask about the evolutionary significance of their scores. In order to have a broader assessment of the moral development of the groups of professionals here evaluated, these groups can be compared with other subjects, for which reason Table III presents information about the groups of students from middle school and high school mentioned previously. The moral profile which has been identified in the set of adult persons is configured also in the middle school and high school students both in the sample and in the groups derived by educational level and by gender.

Table III. Median scores by stage and in the P Index for all subjects, by educational level and by gender

Stages	Total no. of subjects	Middle school	High school	Men	Women
Stage 2	8.99	8.93	9.068	9.07	8.91
Stage 3	29.89	30.78	28.88	30.21	29.64
Stage 4	32.74	31.95	33.63	32.53	32.97
Stage 5A	12.83	12.50	13.20	12.55	13.05
Stage 5B	3.01	2.82	3.23	2.90	3.12
Stage 6	3.29	3.57	2.96	3.09	3.44
P Index	19.13	18.13	18.92	18.54	19.62

Source: Barba (2001).

Despite the fact that the profile is similar as regards the general trend of moral growth, the dominance of Stage 4 and the place occupied by Stage 3, there are important differences to consider. First, whether the students are considered by middle school or high school educational level, or whether they are grouped by gender, the means for Stage 3 are greater than those of the group of professionals presented in Table II. This means that the professionals have overcome the conventional moral perspective to a greater extent, sustained by the advance in the following level, the postconventional.

Viewed in terms of schematics, the middle school and high school students have an average value in the schematic of personal interest—Stages 2 and 3—greater than the schematic of maintaining standards and greater than the average value of the postconventional schematic. The adults, on the other hand, as affirmed previously, have a balance between the schematics of moral reasoning.

On the average, adults have reached a higher level of moral growth than middle school or high school students. However, none of the schematics of moral reasoning is dominant in their cognitive-moral structure.

The second difference is that the means for Stage 4 in middle school and high school students are slightly high than the mean for adults, which shows that on the average they use the conventional perspective more. However, there is still an important evolutionary feature to be made clear the differences in the means for Stages 3 and 4 between middle school and high school students are significant. This indicates that the high schoolers have advanced more toward Stage 4, as compared with the middle school students, but they use this moral perspective more than the adults who have advanced significantly in postconventional reasoning. Thus it can be seen that moral development is associated with age and schooling.

Third, the scores for the postconventional stages are perceptively lower in the middle school and high school groups, which demonstrates that their index of principled moral reasoning is lower than that of the adults. As well, an important evolutionary trait can again be seen: mean differences are significant in Stages 5B and 6 between middle school and high school students; they indicate that the high schoolers use the perspective of Stage 5B more, although in Stage 6 they are

outnumbered by the middle school students.⁷ All in all, the moral growth of the adults, on the basis of the decline of the judgments belonging to Stages 2, 3, and 4, clearly shows an increase in the use of the level-three moral perspective, or the postconventional schematic.

Another aspect that differentiates the middle school and high school students from the professional groups lies in the morality of principles in relation to the gender variable. In the former, the P difference is significant in favor of women, but not in adults, according to the means test and the regression analysis. Analyzing all the subjects, that is, adults plus middle school and high school, the difference by gender is indeed significant, specifically for the values of Substage 5B and Stage 6. Speaking of the relation between gender and the P Index, the research done with the DIT over a period of several years shows that the differences by gender in principled moral reasoning does not crop up with much frequency, and when it occurs, the figures usually favor women. This fact was identified by Rest right from the years the DIT was first used (Rest, 1979), and in general, it has been demonstrated that schooling is a more powerful variable than gender for explaining the variance in postconventional morality.⁸

In a word, the older and better-educated group of professionals compared with middle school and high school students shows a positive effect on the moral growth of the first, since the preconventional and conventional perspectives decrease, and the postconventional viewpoints increase. This greater moral development of the professionals is not homogenous; subsequent analyses will show the differences that exist when the groups of professionals are compared among themselves.

To continue the analysis of the moral development of the professionals, the information was broken down according to the four groups identified in describing the methodology. In this way, in Table IV the mean scores are presented in the stages and in the P Index for each of the groups; that is, the Master's of Education (M.A.Edu) group, the group attending specialty programs or certificate programs related with Human Rights (HR), the middle school teachers (MST), and the Advanced Technicians (AT).

The moral growth pattern is similar to that observed earlier in the total number of students: the means increase from Stage 2 to 4, and from this last the scores descend successively to Substages 5A and 5B and Stage 6. In all the groups, Stage 4 is highest in the moral profile: this feature is clearer in the HR and AT groups. This general moral profile is shown in all the groups, with a small variation: in the AT group, the mean of Stage 6 is slightly higher than that of Stage 5B. However, the difference is not statistically significant. The subjects of this group show no more growth in Stage 6 than in 5B.

Table IV. Median scores by stage and in the P Index by groups

Stages	M.A.Edu	HR	MST	AT
Stage 2	6.31	6.78	5.74	10.08
Stage 3	21.22	23.50	22.09	23.59
Stage 4	26.13	31.75	23.74	37.10
Stage 5A	15.92	15.65	20.49	12.71
Stage 5B	11.22	8.86	10.16	4.20
Stage 6	11.11	5.18	5.66	5.78
P Index	38.15	29.71	36.33	21.13

Despite the general similarity of the profiles, there are important differences between the groups. The following can be conspicuous:

1. The minimum and maximum values of the means by stage among the groups have different variations. When these are compared, the smallest difference between the groups (2.37 percentage points between M.A.Edu and AT) appears in Stage 3; or in other words, the groups are more homogeneous in the use of the moral perspective of Stage 3, with which they make a little more than 20% of their moral judgments. In contrast, in Stage 4 the groups appear more heterogeneous (13.36 points of difference between MST and AT). The AT students—those younger among the adults, and having had less schooling—are the ones who use the Stage-4 perspective more, in particular, and that of conventional morality in general. In Stages 2, 3, and 4, the AT group is the one that reasons with more frequency in each moral perspective, and the differences in Stages 2 and 4 concerning the other groups are significant. In a word, the AT group has greater moral growth: it has evolved less toward postconventional morality; the differences in its P Index as compared with that of other groups are significant.
2. If we observe the scores in the stages from the point of view of the schematics of moral reasoning, in the groups HR and AT, the schematic of personal interest is less than that of maintaining the norms, and this is, in turn, greater than the postconventional schematic in which both groups have greater development in comparison with the other two groups of professionals. In the groups M.A.Edu and MST, the third schematic has the highest percentage.
3. Although Stage 4 is primary in all the groups, the postconventional development is different. In the stages of this level of morality, the greatest difference is shown in Substage 5. The MST group has greater development than the AT, the group with the greatest growth in the stage and in postconventional morality in general. As Table IV shows, in the P Index, the M.A.Edu group surpasses the AT by 17 percentage points.
4. The profile differences between groups are not similar at all stages. The MST groups surpass the perspective of Stage 2, and show greater growth in Substage 5; however, in Stage 6 and in the index of principled moral reasoning it is outstripped by the M.A.Edu group, which outdoes all the others as well.
5. The groups that have gone beyond the perspective of Stage 4, the M.A.Edu and the MST, are those showing greater growth in postconventional morality. The HR group, in turn, has exceeded in greater proportion the perspective of

Stage 4 in comparison with the AT group and gone beyond it, therefore, in the principled moral reasoning. The advance in postconventional morality is sustained evolutionally in the superseding of the earlier schematics.

6. The AT group has the highest score in Stage 4, which is understandable because of its lower age and education, possibly because training emphasizes the perspective of “law and order”, the schematic of maintaining the rules— although in their curriculum there are elements of the morality of principles which when the questionnaire was applied, they had not finished studying. It is striking than the HR group, with the same level of schooling as the MST groups (B.A. or B.S. degrees), uses more the perspective of Stage 4 than the latter. Farther along, other analyses will help with the understanding of this face.

If these are the fundamental features observed in the mean scores of the stages, what happens when we consider the index of the principled moral reasoning for the different groups of adult persons? The relevant data in Table IV indicate that there are important differences in the means, some of which we have alluded to above. The greatest discrepancy is between the scores of the M.A.Edu and the AT groups, which are the groups with the greatest difference in schooling. The difference in this second group is significant when compared to the other three which share the features of greater age and greater schooling. The difference between the M.A.Edu and MST groups is not significant, but that of both compared with the HR group, is.

If we compare the median of the P Index of all the groups (a value of 30.88) with that of the sample of middle school and high school students (18.50, as registered in Table III), we can confirm a great difference that favors the groups of professional and is attributable to their greater age and schooling. Even the AT group slightly tops the middle and high-school sample, since it has a mean value of 21.13 in the P Index.

In the sections that follow there are more specific comparative analyses between levels of moral development in general and of the morality of principles in particular, and the variables of the schooling, age, and educational level of the teaching profession.

Education and moral development

In the analysis conducted to this point several references have been made to the schooling of the groups without mentioning specifics. The categories of this variable permit us to have another vision of the levels of moral judgment development, and to make important comparisons. For that purpose, there is presented below the distribution of the subjects, except for two who did not indicate their schooling.⁹

Table V. Maximum Schooling of the Subjects

Schooling	Total no. of subjects
High school	19
B.A. or B.S.	64
Specialty	3
Master's degree	23

The profiles of moral development according to schooling are presented in Table VI. As in other provisions of the mean scores by stage, the profiles also show the progression from stage 2 to 4, which is prominent at all levels of schooling. Outstanding is the fact that the highest mean of the stage is that of the group whose highest education was high school. The mean score of the stage in other groups tends to decrease with increasing education. In the group whose maximum education is high school, it is clear that the schematic of maintaining standards predominates. In the group with BAs and BSSs, there is balance between the schematics of moral judgment, and in the groups with Master's Degrees the postconventional schematic of morality predominates.

Table VI. Average scores by stage and in the P index for schooling

Stages	High school	B.A. or B.S.	Specialty	Master's degree
Stage 2	10.08	6.63	6.66	6.01
Stage 3	23.59	22.72	28.33	21.59
Stage 4	37.10	29.52	28.33	26.59
Stage 5A	12.71	17.34	8.88	16.63
Stage 5B	4.20	9.26	12.77	10.72
Stage 6	5.78	5.23	3.88	10.48
P index	21.13	31.84	25.55	37.75

Already outstanding in the data distribution in Table IV was the fact that the AT group had the highest mean in Stage 2, with a value of 10.08. There is a significant difference between it and the other groups that among themselves are equal in the use of Stage 2. Now, with the means calculated in terms of schooling, concerning the position of the high school group, containing all the AT groups, we can see that the lower schooling corresponds to less moral growth; these subjects make their own moral judgments from the perspective of Stages 2 and 4 in greater proportion than the rest. It is important to note that no group of adults has fully gone beyond the individualist moral perspective or that of Stage 2's instrumental purpose. On the other hand, the subjects of all the categories of schooling use the schematic of personal interest—derived from Kohlberg's Stages 2 and 3—in a significant percentage of moral judgments.

In Stage 4 the highest mean belongs to the high school group, and the lowest to the Master's Degree group.¹⁰ This datum indicates that more schooling associated with greater age—the average age of the Master's Degree group is 32.95 years; that of the high school group is 22.74—has a positive influence on moral growth,

as may be seen in the P Index below. An advance in the morality of the third level assumes a proportional improvement in preconventional and conventional perspectives.

In Substages 5A and 5B there are differences in the mean scores of the groups. The Bachelor's and Master's Degree groups clearly are the highest in Stage 5A, and only the Master's Degree group lags behind the rest in Stage 6. As for the high school group, it has the lowest mean in Stage 5B.

On relating the principled moral reasoning—P Index—with schooling, we observe that the highest mean belongs to the Master's Degree group, and the lowest to the AT group, whose maximum schooling is high school. The differences in the P Index between the group with a maximum of high school education, on the one hand, and those with a Bachelor's and Master's Degrees, on the other, are significant. Similarly, there is an outstanding difference between the Bachelor's Degree group and that with a Master's Degree. Thus, it can be seen that more schooling, again linked with greater age, decisively influences in the achievement of greater growth in postconventional morality. On calculating the deciles of the P Index, we find that the highest decile is composed only of subjects who have a Master's Degree.

If there are only three groups or categories of schooling made up of the subjects with postgraduate degrees (23 with a Master's Degree and 3 with specialties) their mean P Index score is 36.34. With this grouping, the mean difference is significant only for that of the group with a maximum of a high school education.

With regard to the variable *schooling* and its relation with the P Index, we should take into account the information offered by Rest. According to the developmentalist proposal of Kohlberg's theory and as a result of many years of research using the DIT, mostly in the United States, there has been established a set of parameters for the means of the P Index in terms of individuals' schooling. The mean scores established are set out below (Rest, 1994, p.14):

Table VII. P-Median by level of schooling and of adults in general

Schooling	P-median
Middle school students	21.9
High school students	31.8
Adults in general	40.0
Undergraduate students in general	42.3
Postgraduate students in Business	42.8
Law students	52.2
Postgraduate students in Moral Philosophy	65.2

A look at the P mean (30.88) of the subjects in this study shows it to be below that of undergraduate students in general, and is similar to that of the high school students. The subjects of this study who have a Bachelor's degree (mean value 31.84) are also lower than the parameter for their educational level (mean value 42.30), and have a mean equal to that of high school in Rest's data. The M.A.Edu

group, which has the highest mean in principled moral reasoning (38.15), approaches the mean for “adults in general”, the same as that of the MST group (36.33).

Based on other information from a review of studies with basic education teachers, using Kohlberg’s interview, in which the interviewee constructs his/her moral argument, it was concluded that many of them reasoned only on the conventional level. In contrast, in studies that used the DIT, in which the subjects carry out a task assessing the importance of the statements and expressing their preferences about them or hierarchizing them, many teachers in training and in service reached P ratings in the range of 40. This means, Chang concludes, that many teachers “can recognize, but cannot produce, postconventional thought” (Chang, 1994, p. 72).¹¹

Summarizing this comparison, the groups of this study show less development of postconventional morality than groups with similar schooling in other sociocultural contexts. One conclusion derived from the comparison between the results of this study and those presented by Rest is that it is necessary to promote more systematically the cognitive and moral development of people in the formal educational processes, including those for teacher training. Rest himself affirms that it is usual to see growth in moral judgment with age, but it has also been found that education is a much more powerful predictor than mere chronological age per se (Rest, 1994, p. 15).

To close the analysis of the relationship between principled moral reasoning and schooling, there are presented below two elements: the first is a comparison of five categories of schooling; the second an analysis of regression.

Bringing together the study subjects for middle school and high school (Barba, 2001) and professionals, the education variable was categorized in five groups defined as “maximum schooling” achieved. Their scores on the P Index are shown a little farther on.¹²

The mean differences between the first three categories are small, but between them and the last two, the difference clearly increases. The only significant differences are those between the categories of primary school, middle school and high school; and those of college undergraduates and postgraduates, respectively.

Table VIII. Groups by maximum schooling and P-median

Maximum schooling	Medians of P Index
Primary school	18.89
Middle school	19.40
High school	21.13
University undergraduate	31.84
Postgraduate	36.34

On making three categories of maximum schooling—primary school, middle school and higher education—it turns out that the differences between primary (18.89) and secondary (19.40) for higher education (5.31) are statistically significant. For their part, the subjects of primary school and middle school are equal in post-conventional morality. Higher education is a factor positively correlated with the development of principled moral reasoning.

The regression analysis confirms the above: only the levels of undergraduate and graduate education are positively correlated with the rate of post-conventional morality; the graduate school contributes to an explanation of 14.2% of the P index, double that of the Bachelor's, with a correlation coefficient of 0.337 for postgraduates and 0.276 for undergraduates.

Age and morality of principles

In addition to analyzing the variable schooling, it is important to observe the relationship between age and the development reached by the subjects in principled moral reasoning. To this end, the subjects were grouped, taking as reference for the first group their age for the regular years of higher education. (Three persons did not state their age).

Table IX. Groups by age and P-median

Age groups	Subjects	Medians of P Index
18 to 23 years	16	24.05
24 to 30 years	39	29.95
31 to 40 years	44	33.74
41+	9	33.51

In the group from 18-23 years there are included thirteen children whose maximum education is high school, that is to say, they are students of upper technical level. When the means are compared, the differences existing between the group of 18 to 23 years, that of 31 to 40, and that of 41 years and above, are significant. It follows then, that the subjects 31 years of age or more have achieved greater development in principled moral reasoning.

The average age of the AT group is the lowest of all the groups of adults (22.74) considering both the original assignment of the subjects, and their grouping by schooling. In contrast, the mean age of the Bachelor's group is 31.25, and that of the Master's Degree group is 32.95. It must be remembered, as noted previously, that the Master's Degree group has the highest mean of principled moral reasoning of the four categories of schooling; or of the three, if all the subjects with postgraduate studies are included in the same group. This reinforces the conclusion that age and schooling have a positive effect on the development of moral judgment.

If in the light of these last data we go back to the information in Table III which mentions the middle school and high school students, there is another element that confirms the decisive influence of age and schooling on the development of people's moral judgment.¹³ Table X presents the median values for postconventional morality of the different age groups. The first and the second have to do with the age ranges of the middle school and high school students, respectively.

Table X. Groups by age and P-medians

Ages	11-16	14-19	18-23	24-30	31-40	41+
P Index	18.13	18.92	24.05	29.95	33.74	33.51

Among middle school and high school students there is no difference in postconventional moral development. The AT group has an average age of 22.74; they are older than the high school students, and lead them, moreover, in schooling derived from their advance in the curriculum of the university's Advanced Technician program. Their average of principled moral reasoning is 21.13.

The regression analysis done only for the adult sample confirmed that age is positively correlated ($r = 0.207$) with the principled moral reasoning, but its contribution is low—only 4.3%.

If for the regression analysis of age as an independent variable one works once more with middle school and high school students together with the adults, as was done with schooling, it is observed that the contribution of age to the P Index is higher, 11.3% ($r = 0.338$), but if in the analysis the categories of schooling and gender are introduced, the age variable is excluded, which means that age alone is not sufficient for the growth of postconventional morality. Upper-level schooling—the levels of undergraduate and postgraduate work—is the decisive influence (Rest, 1994, 1988).

If age is taken into account, and if independent analyses are done, this, associated with the postgraduate, has a greater weight, and together contribute 12.4% of the explanation ($r = 0.352$). If the variables of age, postgraduate and undergraduate are taken together, the percentage of explanation only goes up to 14.4% ($r = 0.380$), but the confidence level drops to 91.4%. To sum it up, the association between age and postgraduate carries the most weight in the growth of postconventional morality.

If we recategorize age in order to make the groups more homogeneous, they will be as follows:

Table XI. Groups by age in middle school and high school, and P Index

Age	Subjects	P Index
11-13	372	19.02
14-15	394	18.88
16-17	305	19.04
18+	192	26.90

In the middle school and high school years there is, on the average, practically no moral growth on the postconventional level. Only the differences between the first three groups and the fourth are significant.

Regression analysis with age recoded shows that this variable contributes only to an explanation of 4.6% of the P Index. By introducing the categories of maximum schooling achieved, age is no longer significant, which confirms the first analysis.

Level of work and morality of principles

As mentioned above, only the AT students and six other adults were not engaged in teaching. For that reason, it is interesting to analyze the development of postconventional morality according to the level of education in which teachers perform their work. The distribution of subjects is as follows:

Table XII. Educational level of work and P-median

Educational level of work	Subjects	Medians of P Index
Preschool	36	26.89
Primary school	27	36.34
Middle school	21	37.58
Upper level	2	29.16
No educational work	25	26.46
Total	111	

It can be seen that there are important differences between the groups. The difference between the P Index between those who work at the preschool level and those of elementary and middle school is significant. That is, the former have developed less in postconventional morality, in spite of being older than those that work in primary school. The mean age of those working in preschool is 29.36 years, and that of those working in elementary school is 31.16 years. However, an important difference lies in the fact that the majority of those who work in elementary school have a Master's Degree, and those in the preschool, a Bachelor's Degree. This indicates the influence of schooling on growth toward postconventional morality.

At the same level of morality, those who work in preschool have the same development as people who are not involved in teaching: the AT group and the six people of the HR group. Their average age is 25.12 years, i.e. younger than those

who work in preschool. The elementary school and middle school groups are equal to each other in principled moral reasoning, and they have a greater development as compared with those who do not teach.

All told, the AT group has a moral development similar to those who teach in the preschool in spite of the fact that these persons are ahead of the majority of the former in age and schooling. Here appears an element that needs more study, for with the available data it is impossible to clarify the reason for the similarity of moral development. If the group working in preschool have the advantage in schooling and in the average age, the question can be raised of whether the professional socialization or the work environment does not present opportunities for moral growth similar to those of the other groups of teachers. If, as Rest says, age per se is not enough to promote moral growth, that data of this study leads us to ask whether the lesser amount of growth of the group working in preschool is due to the focus of the teacher training or to the work environment, or to both factors. As Lind, Hartmann and Wackenhut (1985) postulated, the ability to make moral judgments on socialization and the historical development of social system (Kohlberg, 1992.)

Conclusions

This study shows that the subjects of the groups of adults share a general profile of moral growth with a prominence of Stage 4, but observation of the three schematics of morality shows a balanced development. The schematic of maintaining the standards—derived from Stage 4—does not predominate over the other schematics.

There are no differences in general moral development, i.e. between Stages 2 to 6 and in postconventional morality, as regards the gender variable.

Among the various groups of adults there are significant differences in the means of the P index; the differences are related to age, education and the level of education in which teachers perform their work. In the M.A.Edu and MST groups, the postconventional schematic predominates, while in the HR group there is a balance, and in the AT group the schematic of maintaining standards predominates. In no group is the schematic of personal interest predominant. In contrast, in the sample from middle school and high school, and the groups by educational level and gender of these students, there predominates the schematic of personal interest, followed by the schematic of maintaining standards.

The adult groups have evolved morally, and have reached a higher postconventional moral development than the middle school and high school students of Aguascalientes, but if they are compared with groups having schooling similar to their own in other sociocultural contexts, they show a lesser degree of postconventional moral development.

The ST group has the lowest moral development among the groups of adults, and following it in ascending order are those of HR, MST and M.A.Edu. When the P Index values are analyzed according to the educational level in which the teachers work, the preschool group shows a lower development of postconventional morality than other groups of teachers, equal to the set of adults who are not involved in teaching.

An increase in age and schooling shows a positive relationship in the development of the principled moral reasoning, since the subjects with a Master's Degree outperform the other groups in all the variables.

The lower postconventional moral development of the group that works in preschool raises the question of why in these individuals age and schooling do not have the same influence they have in the other groups. Further research is required, but it is possible to raise the question of why the professional socialization of the work environment, or both elements do not promote the development of moral judgment in the same way as they do in other groups of teachers.

According to the levels and stages set out by Kohlberg, the sample of adults shares with middle and high school students the structure of their profile of moral development, including the predominance of the conventional level of morality. However, the adults have gone beyond the perspective of Stage 3, and have advanced farther in the stages of postconventional morality. Age has little influence on the P Index, and college undergraduate and postgraduate studies are the categories having greater explanatory force; the latter outstrips the former.

The conclusions of this study lead to two important considerations. The first is to recognize the need for further, in-depth studies concerning the development of moral judgment in educational workers and other professional groups. Certainly, a larger sample is needed, preferably using a test design integrating the moral dilemmas of professional activity in education, rather than the DIT, which is a general test.

The second consideration has to do with a need within the educational environment; specifically in teacher training it is necessary to promote organizational settings and pedagogical styles which, on the one hand, are oriented with more efficacy toward the teacher's moral development; and on the other, would help in understanding the moral nature of educational action and would fully prepare the teacher to carry out a teaching practice for the encouragement of students' moral development.

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Links with information sources related with the theme of this article:

Special Interest Group of Moral Development and Education (University of Konstanz) <http://www.uni-konstanz.de/SIG-MDE/>

Association for Moral Education <http://www4.wittenberg.edu/ame/>

Translator: Lessie Evona York-Weatherman

UABC Mexicali

¹ A review of the research in this field in the last decade can be seen in Hirsch (Coord.) (2001), Maggi (Coord.) (2001) and Yuren (Coord.) (2001). Yuren reports that there is a clear influence of constructivism in general and especially of Jean Piaget, Lawrence Kohlberg and James Rest, but also reports that no studies were found on the moral development of teachers. Maggi says that the number of papers found shows greater interest on the subject of values and moral development in comparison with the previous decade, but also reports that there are no works on the moral development of basic education teachers. In relation to teachers of higher education it is also stated that there is an increase in the amount of work on the issue of values (Hirsch, 2001; the diversity of the concept "value" is outstanding. There is no work reported on the moral development of teachers.

² For more information on high school and middle school students, see Barba, 2001, in press.

³ For the project "Levels of moral reasoning in middle school, high school and university undergraduate students from the state of Aguascalientes" see Beard (1999). This research received financial support from CONACYT.

⁴ The test can be applied in versions of three or of six stories.

⁵ An ample presentation can be seen in Kohlberg (1992) and in Hersh, Paolito y Reimer (1984).

⁶ The DIT, designed for individuals 12 years or more of age, does not include Stage 1 because it is generally exceeded at these ages. The difference in Substages 5^a and 5B was not made by Kohlberg, although it is contained in the definition of the stage. In the DIT, Rest distinguished two perspectives in Stage 5; that of Substage A belongs to a moral judgment based on a reasoned and critically-accepted social contract (the general will of the people); the perspective of Substage B indicated an individual and humanist-type judgment that guarantees certain basic rights to every person, such as life, liberty and the pursuit of happiness.

⁷ The Works of Barba (2001 and in press) permit making a broad comparison between both subject samples; here only certain references are made.

⁸ For this aspect, see Rest, 1990; Rest, Narvaez, Bebeau & Thoma, 1999.

⁹ We are considering here the maximum schooling achieved. In Mexico, the term *Bachillerato* (Bachelor's) refers to high school students, whereas here it means the group that is studying an upper-level university program (B.A., B.S.) For that reason, it differs from the high school group whose scores of moral development are used in the first part of the analysis, together with that of the middle school, to make some comparisons with the professional subjects.

¹⁰ Of the 23 subjects with a Master's degree, 4 now have the title, and 19 are studying for it. The latter group were assigned this category of schooling because they are beginning the last course in the program.

¹¹ On the characteristics of carrying out the interview of Kohlberg and of the DIT, see Rest, Narvaez, Bebeau & Thoma, 1999, pp. 47.

¹² In postgraduate there are included 23 subjects with a Master's Degree as well as the three who have a specialty.

¹³ In the work of Barba (in press) results are presented for a study on the moral development of middle school and high school students during the three school years.