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Contribution of Educational Factors in the Capacity to Overcome Adversity

Joaquina Palomar and Sandra Montes de Oca

Abstract

The objective of this study was to identify factors that predict resilience and social mobility in persons living in extreme poverty in Mexico by analyzing an extensive set of school-related variables. A total of 913 adults were surveyed, with 65.2% women and an average age of 43.71 years. Significant correlations were found between the seven educational variables measured and resilience, and only one of them was correlated with social mobility. Regression analysis identifies achievement motivation and a reflexive learning style as predictors of resilience. The results are discussed in terms of their implications for this segment of the population.

KEYWORDS: poverty, resilience, social mobility, educational resources

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INTRODUCTION

Although scientific study of resilience is quite recent, it has been observed for many years that when some human beings are confronted with adversities of existence, they manage to resist and adapt, strengthening their bio-psycho-social development. During the study of this phenomenon, diverse concepts have been incorporated, such as invulnerability, vulnerability (Anthony, 1987), and protective and risk factors (Suárez Ojeda, 1993). Resilience has been understood as overcoming difficult life experiences, pain and scars, and the ability to keep going despite such experiences (Rutter, 1985); and as the process, capacity or result of successful adaptation despite challenging, threatening circumstances (Masten, Garmezy, Tellegen, Pellegrini, Larkin & Larsen, 1988). Resilience is characterized by the capacity to cope effectively with stressful events, to resist destruction and to pick oneself up and keep going despite adversity. It does not refer exclusively to an individual’s capacity for resistance, but also to his/her potentiality for positive construction, for responding adaptively and managing to grow and develop despite difficult circumstances.

It is essential to mention the two approaches that have been useful in this study: a risk approach focused on illness, symptoms and characteristics associated with a high probability of biological, psychological and social damage; and a protective approach that describes genuine shields used against negative forces (expressed in terms of damages or risks) that diminish the effects of these forces, and sometimes transform them into a factor for overcoming difficult situations. Protective factors can be both individual and environmental, and they improve an individual’s response to constitutional risk factors or stressful live events (Masten, Best & Garmezy, 1990).

EDUCATIONAL FACTORS AND RESILIENCE

Students at academic risk generally confront a series of complex problems caused by poverty, poor health and other social conditions that make it difficult for them to be successful in school. It is therefore vitally important to conduct research on the school-related factors that protect and promote resilience, given the subsequent effects of resilience for individuals.

Windfield (1991) and Wang & Kovach (1996) argue: “schools that promote resilience in their students are those concerned about the feelings and emotions of their students; they know their students well; their students feel accepted, respected, supported; and they are clear about what their work is.” Bernard (1993) points out that active participation in decision-making in the daily life of the classroom contributes toward self-directed learning and building responsibility. Students develop intrinsic motivation for future learning and for
developing resilience. In addition, other important points incorporated for promoting resilience in at-risk students from families with low economic resources include the establishment of rigorous academic standards in schools (Sizemore, 1988), that parents are actively involved (Epstein, 1990) and that social services are integrated in school organization and activities (Comer, 1999).

Henderson & Milstein (2003) identify the main educational factors that promote resilience as: the development of a caring environment for students, in which at least one adult knows them well and is concerned about their well-being; when clear, high expectations toward students are maintained, when the necessary support to fulfill these expectations is offered; and when responsibility, cooperation and conflict resolution are promoted. This is similar to what is stated by Wang, Haertel & Walberg (1999), who maintain that the educational institutions that promote resilience among their students are those offering working conditions that are “enjoyable for students,” and “teachers are behavior models and handle groups effectively, they stimulate the development of intrinsic motivation, and they assign them tasks involving trust and responsibility.” The quality and quantity of interactions between teachers and students contribute to the development of learning skills, and to increasing their self-esteem and their sense of belonging. Institutions that foster resilience are founded on the conviction that resilience is an ongoing process and that what is done every day for students is what makes the difference.

It is clear that teachers and counselors are key factors in building resilience in students, because it is necessary to establish changes, develop habits and encourage creativity. Bernard (1993) states that these interactions should promote reflection, critical thinking, analysis of social problems, curriculum planning, shared learning, peer tutoring, and guidance services. According to Borda & Pinzón (1995), having clear, desired goals, a positive mental attitude toward studying, and active participation may produce motivation, and this is one of the key factors for academic performance (Borda & Pinzón, 1995; Entwistle & Entwistle, 1970; Harris, 1940; Rodríguez, 1982).

Other aspects of the initiative factor are the desire for achievement (Coon, 1999) and coping with challenges (Coon, 1999; Werner & Smith, 1982; Wolin & Wolin, 1993), which may also contribute significantly to performance, since persons with a high need for achievement—defined as the desire to achieve an internalized standard of excellence—complete difficult tasks, obtain better grades and tend to excel in their occupations.

According to Werner & Smith (2001), those serving as models for resilient children are not only in their family circles, but may also be favorite teachers who not only provided them with academic skills, but also expressed caring and trust. Teachers must be trained to recognize students who are at risk, and to be sensitive to their needs. At-risk students are benefited by teachers who motivate them to be
academically successful, and who maintain an orderly, disciplined school environment, who model positive values for them, and who gain the trust of their students—in other words, who promote an appropriate school environment. To the contrary, as pointed out by Werner & Smith (1982), one of the main obstacles imposed by teachers on their students is when they have a perspective focused on deficit and risk, which orients them toward detecting problems, weaknesses, risks and deficits, and toward classifying students according to these diagnostic assessments. These signs of deficits attributed to students have a tendency to become self-fulfilling prophecies.

The main resilience-building element for each student is a relationship of trust, which may be developed with only one adult, who may be within or outside the family, and which transmits the message “you’re important to me” (Werner, 1993).

Another variable of particular interest in the present study, in addition to those already described, is social mobility and its relationship with resilience, as well as with the elements that define resilience in the educational context. To further develop what has already been written here, it is important to mention that one of the factors that most clearly determines the role of resilience in an individual’s adaptation to his/her environment, and even more so, in the individual’s reconstruction implied in the phenomenon under study, is a factor associated with aspirations for a fuller, more comfortable life that, simultaneously, produces goods and products that facilitate such a life, and implies in some way an individual’s self-realization in the social sphere of life. This is especially the case in a country such as ours, in which poverty has a long history, and in which a significant portion of the population lives in conditions that are far from satisfactory. Education has been historically considered to be one of the main mechanisms for social mobility, and therefore, one of the ideal instruments for fighting inequality (Saavedra, 1997; Rodríguez & Valdevieso, 2004). The same is true in Mexico, where it is considered that school activity, especially in contexts characterized by high marginalization, seems to be viewed as an automatic mechanism for improving living conditions. School thus becomes one of the primary places on which families’ expectations for improving their socioeconomic situation are focused, and it is believed that school promises to serve as a safety net. Fathers and mothers with a low educational level trust that education will provide their children with the resources to live better than they have been able to. We can therefore see the importance of further study of educational elements or variables associated with resilience, and also of the relationship between this construct and social mobility—both objectives of the current study.

Therefore, the goal of this study is to identify and explore educational factors associated with the phenomenon of resilience and its relationship with
social mobility—which will contribute to a broader understanding of the factors that appear to be most clearly associated with the probabilities of overcoming poverty in Mexico.

**METHOD**

The present study is a transversal predictive study conducted with women admitted into the Oportunidades Human Development Program in Mexico. Oportunidades is the largest social program in Mexico’s history.¹ The study described in this paper is part of a much larger study evaluating the impact from individual, educational, family and social variables or attributes on the resilience and social mobility of the beneficiaries of this program.

**STUDY VARIABLES**

**Socio-Demographic Variables Associated with the School Context**

The socio-demographic variables related to the school environment that were measured in this study were: the educational level of the person surveyed, of his/her mother, father and spouse; the academic average obtained in the educational levels completed; whether or not he/she took technical courses; whether or not he/she had been suspended from school, and if so, how many times; if he/she repeated a grade in school, and the number of times this occurred; the number of days he/she attended school; how much time was dedicated to doing homework; if he/she attended classes outside the regular school day; if he/she participated in extracurricular activities; and lastly, the age at which he/she stopped attending school.

**Independent Variables**

*Home-school involvement* is defined as the participation by the student's parents and whether or not they attend school activities, parent's communication with the teachers at the school attended by their children, and how much they help their children with homework.

¹ The Oportunidades Human Development Program is a federal government initiative aimed at assisting families living in extreme poverty to move out of this situation. The actions of this program are directed toward promoting and strengthening the development of the individual and collective capacities of the beneficiary population. By way of income transfers and investment in health, nutrition and education, the program seeks to break the inter-generational circle of poverty in Mexico. The program benefits approximately five million households, and in all cases those who are admitted into the program and who receive the economic assistance are women (there are only rare exceptions, as in the case of disabilities).
Satisfaction with school is defined as students’ enjoyment of school, and the study and work carried out there (Ang, Chong, Huan, Quek & Lay, 2003). Significant relationships with a teacher in the school is defined as the quality of the relationship established between teachers and students, and the emotional support and advice provided by teachers to students (Ang et al., 2003). Being accompanied by a mentor is defined as the student’s relationship with an individual involved in a process of accompanying him/her at different moments in time and in different situations confronted in the course of his/her academic education (Ehlers & Wibrowsky, 2007). Teaching styles are defined, according to Acosta (2001), as a teacher’s way of approaching students: whether or not he/she is assertive, uses a suggestive/directive style, and whether or not he/she can effectively manage the class. Extracurricular activities refer to the opportunities for students to use their time in a positive manner by becoming involved in clubs, sports, hobbies, etc. (Pisapia & Westfall, 1994). Learning styles are defined as cognitive and affective features that serve as relatively stable indicators of the ways in which students perceive, interact and respond to their learning environments (Alonso, Gallegos & Honey, 1999). Achievement motivation is understood as a multidimensional concept of competence associated with standards of excellence, or as a desire of individuals to establish and fulfill their own objectives (Clark, Varadarajan & Pride, 1994). Capacity for solving problems is defined as the ability to think reflexively and flexibly in the abstract, and the possibility for attempting new solutions to problems that are both genitive and social in nature (Munist, Santos, Kotliarenco, Infante & Grotberg, 1998).

Dependent Variables

Resilience is characterized by effectively coping with stressful events and the capacity to recuperate from adverse experiences. This variable does not refer exclusively to the individual’s capacity for resistance, but also to his/her potentiality for positive construction, for responding adaptively, and for growing and developing despite difficult circumstances (Grotberg, 1996).

The social mobility variable will be obtained by subtracting two scores from the Single Score Model (Modelo Único de Puntajes) provided by the Oportunidades social program. Measurements for this index are taken when beneficiaries are admitted into the program (enrollment index) and three years after being admitted into the program (recertification index). The Single Score Model summarizes socioeconomic information on the program’s beneficiaries.
PARTICIPANTS

A total of 602 households participated in the study. The households included in the study sample entered the *Oportunidades* program between 2002 and the date of the survey. The study sample was selected from a universe of 5,512 households.

Criteria for inclusion in the sample specified that beneficiaries were active in the program, that they lived in urban areas in the states neighboring Mexico City (Federal District), that they were not indigenous, and that there were at least two measurements of the socioeconomic level of their families (one upon enrollment into the program, and the other three years later, through the Singe Score Model).

The Singe Score Model is an index calculated by *Oportunidades* and based on a model that summarizes socioeconomic characteristics in order to distinguish between those who are extremely poor and those who are not, thus identifying the families eligible for becoming program beneficiaries. These characteristics include the level of crowding, number of children under the age of twelve, if the home has dirt floors, if household furnishings (refrigerator, gas stove, vehicle, washing machine) are lacking, if household members have access to social security, sex (men favored), age (adults and young adults favored), and head of household’s level of schooling, if household has access to a bathroom (with or without water), type of locality and region inhabited (level of marginalization), and demographic dependency (number of dependents in household). Differences found between the enrollment index and the recertification index makes it possible to observe whether or not families experienced social mobility, and the direction and magnitude of such mobility, from the time they were admitted into the program until the time of recertification (*Programa de Desarrollo Humano Oportunidades*, 2008).

Only 1,257 households from the universe considered met the criteria for inclusion in the current study. Of this list of households, 700 households were selected randomly, 100 of them as a replacement sample. A total of 602 women admitted into the program, plus 311 husbands, were surveyed. It was possible to survey only slightly over 50% of the spouses, since some of them work away from the locality, some of the women were widows, separated or single mothers, and in some cases, the husbands had migrated to other locations to seek better working conditions.

The Mexican states in which the beneficiaries lived were Guanajuato, the state of Mexico, Morelos, Tlaxcala, Guerrero, Michoacan, Veracruz and Puebla. From the sample studied, 65.2% were women and 34.8% were husbands of women admitted into the program. The average age was 43.71 (DE=12.58) years. According to their place of origin, 58.7% were from a town, 32.5% were from a
small city, and only 3.6% were from the nation’s capital. Of those who were not originally from the place where they were living, the average number of years living in their current residence was 22.02 ($DE=11.59)$ years.

The average amount of the monetary transfer received bimonthly per household from Oportunidades was $740.74 Mexican pesos (59 usd) ($DE=$548.57 Mexican pesos, 44 usd).

The average monthly personal income was $1,285 Mexican pesos (103.79 usd) ($DE=1,321$ Mexican pesos, 106.70 usd), while the average monthly family income was $2,284 Mexican pesos (184.50 usd) ($DE=1,408$ Mexican pesos, 113.73 usd) per household. In terms of savings capacity, the average amount that beneficiaries were able to save each month was $65 Mexican pesos (5.25 usd) ($DE=210$ Mexican pesos, 16.96 usd) per household. The average number of individuals living on the family income was 4.62 ($DE=1.87$) individuals per household, while the average number of minors living on the family income was 1.67 ($DE=1.56$) per household. Regarding the occupations of the persons surveyed and their parents, it was observed that of those surveyed who have a job, most of them have a non-technical position, while the majority of their fathers and a significant portion of their mothers worked as subsistence farmers. In relation to level of schooling, it was found that the majority, of both those surveyed and their parents, had not attended school or had attended but not completed elementary school.

**INSTRUMENTS**

The instruments used in the present study were taken from their original sources, translated into Spanish and then re-translated into English. Then they were tested with a population similar to the one in the present study. The psychometric properties (reliability and validity) were analyzed, and some pertinent adjustments were made, specifically some reactives that were not useful were eliminated and some modifications were made to the meaning of some phrases with the aim of adapting the items to the Mexican culture. Some of the instruments were taken from several sources. Information associated with the original instruments and with the properties of the definitive instruments used in the study is presented in Annex 1.

**Procedures**

After the survey was developed, two days of training were provided to a team of survey workers hired expressly for this purpose, and meetings were held with the persons in charge of the Oportunidades social program, to plan the logistics for applying the instrument. The heads of the Centers for Attention and Registration...
(Centros de Atención y Registro) of the Oportunidades program in the seven Mexican states where the questionnaires were applied were contacted, and they scheduled a time and day for the beneficiaries to come in. The survey workers attended a meeting to schedule appointments with each of the individuals selected for responding to the questionnaire. The survey workers went to the homes of the beneficiaries, where the survey was applied. In the case of women who had been married or living with a common-law husband for more than six months, the same survey was also given to their husbands or partners. The survey was completed in a single session lasting approximately between two and two-and-a-half hours.

**RESULTS**

In this section we will first describe the demographic and socio-demographic characteristics of the study sample and of some of the variables related to the school setting. Then we will report the correlations found between the independent educational variables and the dependent variables (resilience and social mobility). Finally, using the multivariate technique of multiple regression, we will identify the school-related variables that best explain resilience.

**Descriptive Statistics of the Demographic and Socio-Demographic Characteristics of the Sample**

Regarding the demographic and socio-demographic variables, the average age of those in the study sample was found to be 43.71 years. The average number of years since they left their household of origin to marry or live independently was 22.91 years. As for the marital status of those surveyed, it was found that 52.4% were married, 24.2% lived with their common-law spouses, and 10.6% were divorced or separated. The average amount received every two months from the Oportunidades program was 747.65 Mexican pesos (60.40 usd), with a standard deviation of 559.186 (45.16 usd). The average monthly personal income was 1,285.45 Mexican pesos (103.83 usd) and the average monthly family income was 2,403.68 Mexican pesos (194.15 usd). The mean number of persons living on this income was 4.60 (with a standard deviation of 1,846), of whom 1.73 were minors.

Regarding school-related socio-demographic variables, it was observed that the school averages in elementary, junior high and senior high school were 77.54, 77.89 and 79.94, with standard deviations of 8.491, 7.169 and 10.079, respectively. It is also important to mention that the number of subjects reporting having studied at these levels were 599 in elementary school, 180 in junior high school, and only 18 in senior high school. Only 65 individuals surveyed reported having taken technical education courses, with an average of 1.34 courses, and a standard deviation of .815.
Another variable considered is the number of years repeated in school, with a mean of 1.41 years among the 202 individuals who reported having to repeat a school year, and a standard deviation of .889. The mean number of days of school attendance was 4.86 days, with a standard deviation of 5.24; the mean number of hours dedicated to homework was 4.90 hours, with a standard deviation of 3.622 hours; the mean number of hours dedicated to extracurricular activities was .83, with a standard deviation of 3.133. Of the 631 individuals who dropped out of school, the mean number of times they did so was .63, with a standard deviation of .836; and the mean age at which they left school definitively was 13.39 years of age, with a standard deviation of 3.597.

In terms of the level of schooling reported by those in the study sample, it was found that the highest percentage of program beneficiaries corresponded to those with no schooling at all (29.1%), followed by those who had attended but not completed elementary school (28%). The same was true for the fathers and mothers of program beneficiaries, although with higher percentages (64% and 26% respectively for fathers, and 76.3% and 17.3% respectively for mothers). Regarding the educational level of their partners, the highest percentage corresponded to those who had attended but not completed elementary school (30.8%), followed by those with no schooling at all (24.9%).

In terms of the means and standard deviations of the independent variables in the study (see Table 1), only 406 of the 917 Oportunidades beneficiaries surveyed reported having had a mentor and considered that they had motivated them, and helped them to become more independent, more sure of themselves and to have confidence in their capacities. In terms of the teacher-student relationship and satisfaction with school, the mean obtained in the first factor (emotional support and advice) was 2.2503, with a low standard deviation (.82123), suggesting that students generally felt their teachers supported them and listened to them, and that they enjoyed attending school. Lastly, in reference to the type of relationship that those surveyed maintained with their teachers (third and fourth factors, positive and negative relationships, respectively), it was found that most of them reported having established a close relationship based on trust with their teachers, and that they considered them to be fair. Regarding the third independent variable, home-school involvement, the means obtained with a minimal standard deviation by the 620 subjects who responded to the two factors defining this variable in the survey (parents’ involvement, 2.5567; and help with homework, 2.0761), suggest that parents rarely helped their children do their homework, they were not very capable of providing their children with support to resolve the doubts that emerged when doing homework, and that at times, they talked with their children’s teachers and attended activities organized by the school.
Regarding the teaching styles that, according to those surveyed, were used by their teachers, the means indicate that the beneficiaries considered them to be assertive (first factor, mean of 2.90 and a low standard deviation of .71), or in other words, they permitted their students to express their opinions and feelings, and they encouraged them to state their viewpoints in class and to identify the pros and cons of the different ways of resolving a problem; that they used a suggestive/directive style, meaning that they set an example to be followed in resolving the exercises and problems proposed in class (second factor, mean of 2.99 and a low standard deviation of .64); and that they were able to effective manage the class (third factor, mean of 3.02 and a low standard deviation of .75), which signified that among other things, they were able to identify and motivate the students considered to be the most difficult in the classroom.

Regarding the learning styles of those surveyed, the means obtained in the four factors were: reflexive style (X=3.05), pragmatic style (X=3.06), theoretical style (X=2.85) and active style (X=3.1). This suggests that the learning style most used is the active style in which individuals seek new experiences, become bored with long time periods, and prefer to work in a group; and the style least used is the theoretical style, in which individuals resolve problems in stages, are perfectionists, prefer to analyze and synthesize problems, and are rational and objective.

With respect to the independent variable of achievement motivation, Oportunidades beneficiaries reported that most of the time they were capable of continuing a task until its completion, and doing it increasingly better; of working hard when carrying out a task; of completing a task even when it is difficult; and of feeling satisfied when they do a good job. All of this refers to the first factor (mastery, for which a mean of 3.34 was obtained, with a standard deviation of .55), and to a lesser degree they compete to do better than others (second factor, competition, with a mean of 2.6 and a standard deviation of .87). Lastly, it was found that with regard to the problem-solving variable, those surveyed used a rational manner to a greater degree when resolving problems (first factor, mean of 2.93, with a low standard deviation of .57), or in other words, they considered what was good or bad, considered the short and long-term consequences, and attempted to find sufficient information during the resolution process. The style used least is the evasive style (fourth factor, with a mean of 2.17 and a standard deviation of .73), or in other words, they do not think about solutions to a specific problem, they resolve the problem when it is already very late, or they “go round and round” trying to solve the problem.
### Table 1. Descriptive Statistics of Independent Variables

<table>
<thead>
<tr>
<th>Name of Variable</th>
<th>Number of Factor</th>
<th>Name of Factor</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationship with a mentor</td>
<td>1</td>
<td>Relationship with a mentor</td>
<td>406</td>
<td>3.00</td>
<td>.747</td>
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<tr>
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<td>Emotional support and advice</td>
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<td>2</td>
<td>Satisfaction with school</td>
<td>609</td>
<td>3.22</td>
<td>.772</td>
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<td>3</td>
<td>Positive relationship with teacher</td>
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<td>3.00</td>
<td>.805</td>
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<tr>
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<td>4</td>
<td>Negative relationship with teacher</td>
<td>535</td>
<td>1.82</td>
<td>.732</td>
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<tr>
<td>Home-school involvement</td>
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<td>Home-school involvement</td>
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<tr>
<td>Home-school involvement</td>
<td>2</td>
<td>Help with homework</td>
<td>623</td>
<td>2.07</td>
<td>.938</td>
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<tr>
<td>Teaching styles</td>
<td>1</td>
<td>Assertiveness</td>
<td>609</td>
<td>2.90</td>
<td>.713</td>
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<tr>
<td>Teaching styles</td>
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<td>Suggestive / directive</td>
<td>614</td>
<td>2.99</td>
<td>.649</td>
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<td>Teaching styles</td>
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<td>Effective management of class</td>
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<tr>
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<td>Theoretical</td>
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<td>.701</td>
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<td>Achievement motivation</td>
<td>1</td>
<td>Mastery</td>
<td>873</td>
<td>3.34</td>
<td>.550</td>
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<tr>
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<td>Competition</td>
<td>873</td>
<td>2.63</td>
<td>.871</td>
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<tr>
<td>Problem-solving</td>
<td>1</td>
<td>Rational</td>
<td>866</td>
<td>2.93</td>
<td>.571</td>
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<tr>
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<td>Emotional / impulsive</td>
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<td>4</td>
<td>Evasive</td>
<td>892</td>
<td>2.17</td>
<td>.734</td>
</tr>
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</table>

**Correlations Found between Independent Educational Variables and Dependent Variables (Resilience and Social Mobility)**

In this section we will present the Pearson table of correlations obtained between the independent variables (mentor, teacher-student relationship, and satisfaction with school, home-school involvement, teaching styles of teachers, learning styles of those surveyed, achievement motivation and problem-solving) and the dependent variables (resilience and social mobility).
<table>
<thead>
<tr>
<th>Name of Variable</th>
<th>No. of Factor</th>
<th>Name of Factor</th>
<th>RESILIENCE FACTORS</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Emotional support and advice</td>
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</tr>
<tr>
<td>Teacher-student relationship</td>
<td>2</td>
<td>Satisfaction with school</td>
<td>.306 .000 .155 .000 .334 .000 .259 .000 .184 .000 .281</td>
</tr>
<tr>
<td>Teacher-student relationship</td>
<td>3</td>
<td>Positive relationship with teacher</td>
<td>.245 .000 .154 .000 .273 .000 .210 .000 .161 .000 .255</td>
</tr>
<tr>
<td>Teacher-student relationship</td>
<td>4</td>
<td>Negative relationship with teacher</td>
<td>-.121 .006 .511</td>
</tr>
<tr>
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<td>1</td>
<td>Home-school involvement</td>
<td>.153 .000 .175 .000 .222 .000 .193 .000 .151 .000 .256</td>
</tr>
<tr>
<td>Home-school involvement</td>
<td>2</td>
<td>Help with homework</td>
<td>.161 .000 .000 .605</td>
</tr>
<tr>
<td>Teaching styles</td>
<td>1</td>
<td>Assertiveness</td>
<td>.263 .000 .212 .000 .262 .000 .262 .000 .224 .000 .282</td>
</tr>
<tr>
<td>Teaching styles</td>
<td>2</td>
<td>Suggestive / directive</td>
<td>.330 .000 .233 .000 .320 .000 .324 .000 .261 .000 .355</td>
</tr>
<tr>
<td>Teaching styles</td>
<td>3</td>
<td>Effective management of class</td>
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</tr>
<tr>
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</tr>
<tr>
<td>Learning styles</td>
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<td>Pragmatic</td>
<td>.592 .000 .396 .000 .428 .000 .411 .000 .504 .000 .553</td>
</tr>
<tr>
<td>Learning styles</td>
<td>3</td>
<td>Theoretical</td>
<td>.528 .000 .341 .000 .381 .000 .351 .000 .467 .000 .492</td>
</tr>
<tr>
<td>Learning styles</td>
<td>4</td>
<td>Active</td>
<td>.631 .000 .384 .000 .476 .000 .406 .000 .480 .000 .565</td>
</tr>
<tr>
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<td>1</td>
<td>Mastery</td>
<td>.655 .000 .555 .000 .552 .000 .473 .000 .457 .000 .602</td>
</tr>
<tr>
<td>Achievement motivation</td>
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<td>Competition</td>
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</tr>
<tr>
<td>Problem-solving</td>
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<td>Rational</td>
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</tr>
<tr>
<td>Problem-solving</td>
<td>4</td>
<td>Evasive</td>
<td>-.126 .000 .850</td>
</tr>
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</table>

As evident in Table 2, low and moderate correlations were obtained between the independent variables and resilience, however this was not the case with the second dependent variable studied, social mobility, and in contrast, only the variable for a negative relationship with teachers correlated negatively with this variable. A very plausible explanation is that the social mobility in the group studied is very low and there is little variability.

The variables not demonstrating any relationship with resilience, even though the literature indicates the opposite to be true, were two of the problem-solving factors (emotional/impulsive and frustration/discouragement).

Table 3 below presents the information obtained from the multivariate technique of multiple regression, and identifies the variables that best explain the behavior of the dependent variables. Through step-by-step multiple regression analysis, it was observed (Table 3) that the independent variables that best predict resilience are the first achievement motivation factor (mastery) and the first learning style factor (reflexive), both explaining 58.5% of the dependent variable. This suggests that those who may turn out to be more resilient are capable of continuing tasks until completing them, doing so increasingly well; of working hard when carrying out tasks, of completing tasks even when they are difficult, of seeking the information necessary to carry them out, and of feeling satisfied when they do a good job. These individuals also like to observe from different perspectives and to bring together data to reach conclusions, they are prudent, considering all the alternatives before speaking, and they listen to others, or in other words, their preferred style is reflexive learning.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Overall Resilience</th>
<th>1st Variable entered in</th>
<th>2nd Variable entered in</th>
<th>Regression Model</th>
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<td>Constant</td>
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<td>0.104</td>
<td></td>
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<tr>
<td>Change in R2</td>
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<td>0.531</td>
<td>0.374</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>0.915</td>
<td>0.000</td>
<td>0.029</td>
<td></td>
</tr>
<tr>
<td>Signif. F</td>
<td>0.004</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DISCUSSION

Most scholars who study resilience highlight the following variables as important in explaining this phenomenon: certain socio-demographic variables (sex, age, marital status); family environment (parents’ education, family income); social or cultural context; and school setting, since children spend many hours of their lives
in school—which becomes a fundamental agent of socialization and a space for transmitting the culture and for acquiring certain basic life skills.

While it is clear that school should be a key aspect in the promotion of resilience, there are some school-related factors that make it difficult for this to occur in the best way possible.

It is important to mention first of all that in the case of Oportunidades beneficiaries, very few of them completed elementary school, and even less likely attended junior or senior high school. Also, only 65 of those surveyed reported having taken technical education courses. At the same time, the average age at which they definitively dropped out of school was 13.39 years of age.

In terms of the characteristics of schools and teachers, some authors such as Schmelkes (2005) state that schools may seriously limit the school activities carried out. For example, the size of the school and classroom is often insufficient for providing adequate attention to the number of students. And the lack of basic infrastructure, the absence of teaching strategies used by teachers, the way schools and classrooms are organized (with often more than one grade per classroom), and the fact that traditional curriculums are limited to “transmitting knowledge” do not promote “constructive processes of resilience” (Schmelkes, 2005).

Regarding the above, it was found in the current study that the greatest percentage of those surveyed reported having attended elementary schools located in small towns that can only be reached by unpaved roads. The characteristics of these schools are described by Ezpeleta and Weiss (1996), who refer to the poor attendance rates and frequent changes in teachers, and by Schmelkes (2005), who reports on a study conducted in the Mexican state of Puebla with regard to the unequal quality of education in Mexico’s elementary schools. The latter reports that 75% of the urban, rural and marginalized schools investigated had more than one grade in each classroom, and had a very serious problem in terms of the quality of education, as evidenced by the following: students who were about to complete elementary school had not reached the required levels of functional literacy, there was no supervision by education authorities, the parents of the children attending these schools did not have the necessary knowledge to help their children with homework due to their low socioeconomic level, and frequently, parents needed help from their children in order to improve the family income.

Schmelkes (2005) also reports that the majority of the schools studied were in poor condition; teachers continually failed to report to work and their teaching capacities were deficient; also, the schools were poorly equipped and lacked a formal director. Schmelkes concludes that the quality of school inputs and the everyday functioning of schools tend to be limited to the conditions characterizing those on the “demand” side: if the people are poor, the quality of the school and its human and material resources will also be poor. This reveals the
characteristics of the education received by the individuals surveyed in the current study.

With respect to the school-related variables measured in the current study, the results obtained are discussed in the following section:

**Presence of a Mentor and the Relationship with Dependent Variables**  
* (Resilience and Social Mobility)

One of the variables with more bibliographical references is the role played by mentors in students’ education and the relationship between mentors and resilience. Werner & Smith (1982) report that resilient children have, in addition to their family circle, a favorite teacher who serves as a model and who not only assists them in acquiring academic skills, but also shows them caring and trust. Also, Bernard (1993) identifies one of the protective factors that can promote and strengthen resilience as a caring relationship with at least one person who loves a child despite his/her difficulties, who doesn’t judge him/her and who believes in his/her potential, while offering the necessary support for healthy growth and development and for learning.

In the initial stages of development, the resilient person (mentor) is a model with the ability to facilitate capacity-building, enhance strengths and increase the availability of appropriate resources to be used when it is necessary to confront adversity (Grotberg, 2006). During adolescence, having a relationship with a resilient person who is not a member of the family (may be a teacher or a distant relative) can be a very important positive factor. Brooks & Goldstein (2004) believe that adolescents who have this emotional support obtain better school results than their peers who do not. The presence of these resilient persons motivates adolescents to seek appropriate companions, thus avoiding delinquent-type behaviors.

Data obtained in the current study support the findings reported in the literature. Only just under half of the study sample reported having a mentor, however they remember mentors as being individuals who motivated them and who helped them to become more independent, to feel more sure of themselves, to trust their abilities, to be more optimistic, and to view life differently. They also helped them feel better about school, and provided them with a good example to follow.

Lastly, and supporting what has been reported by Manciaux (2003), Martínez & Vásquez-Bronfman (2006), Ryan & Patrick (2001) and Werner & Smith (1982), a moderate correlation was found between the mentor variable and the five factors on the resilience scale (strength and self-confidence, social competence, family support, social support and structure)—and therefore, global resilience—suggesting that the presence of someone who offers support, who
motivates and helps students become more responsible and more independent in school works in favor of developing resilience.

Teacher-Student Relationship and Its Relationship with Dependent Variables (Resilience and Social Mobility)

As mentioned earlier, the variable encompassing the teacher-student relationship and satisfaction with school is composed of four factors: 1) emotional support and advice, 2) satisfaction with school, 3) positive relationship with teachers, and 4) negative relationship with teachers.

With regard to the relationship between teachers and resilience, Henderson & Milstein (2003) report that in order for students to be resilient, they need teachers who serve as models for them, who believe that students have intellectual capacities, who make students feel independent and autonomous, and who help them develop high self-esteem. This coincides with the data obtained in the current study, specifically that the more emotional support students receive and the more they are listened to by their teachers, the more confidence they have in their own abilities to successfully resolve problems, the more they believe in themselves and the more they trust that better times lie ahead. In research conducted by González & Padilla (1997), the factors contributing to the development of resilience were reviewed, and it was found that resilient students have a significantly better perception of family and peer support, of feedback provided by their teachers and of commitment to school, in comparison with less resilient students. This coincides with the data obtained in the current study that suggests a relationship between the teacher-student relationship and resilience factors, on the one hand, and the negative relationship with teachers and social mobility; on the other (the correlation is negative). Satisfaction with school has also been extensively studied in terms of its relationship with successful, resilient students (see Reyes & Jason, 1993).

Home-School Involvement and Its Relationship with Dependent Variables (Resilience and Social Mobility)

Jones (1989) highlights the importance of parents being involved in the school life of their children, helping them with and reviewing their homework, communicating frequently with their teachers, attending meetings at school, and providing their children with certain times of the day for studying in an appropriate environment. Another important aspect mentioned by Jones is the importance of parents providing their children with the necessary educational resources, modeling appropriate strategies and behaviors toward studying, talking with them about their educational goals, visiting their children’s schools and
giving them positive feedback on their academic skills. In addition, Wang et al. (1999) reported in their study that children are resilient when their parents offer them academic support consisting of meeting with their teachers, becoming familiar with the difficulties they have, supporting them in resolving these difficulties and supervising their homework.

It was found in the current study that the first factor (home-school involvement) has a low significant relationship with the five resilience factors, and the third factor (family support) is the one with a higher correlation, signifying that the more communication between parents and schools, and the more parents attend the events organized at school, the more resilient their children are.

The second factor making up home-school involvement is helping with homework. Researchers such as Greenberg, Weissberg, O’Brien, Zins, Fredericks, Resnik & Elias (2003), Jones (1989), Tolan, Gorman-Smith & Henry (2004) and Wang et al. (1999) indicate the importance of parents helping their children with their homework, and how this is associated with resilient behavior. The data obtained in the current study shows that 65% of the subjects surveyed do not receive any type of assistance when they do their homework, and for those who have some assistance, 14% were assisted by other family members, 11% received assistance from mothers, and only 7% from fathers. This data is corroborated with the mean obtained by the subjects in this factor, indicating that the parents of those interviewed seldom help their children with their homework, were not very able to offer them assistance in resolving doubts they had when doing their homework, and only on rare occasions, spoke with their children’s teachers or attended the activities organized by the school. This factor (help with homework) demonstrated a low correlation with the second, fourth and fifth resilience factors (social competence, social support and structure), and with global resilience, indicating that the more help from parents in completing homework, and the more parents are able to resolve the doubts their children have when doing homework, the more confidence these children will have in establishing new relationships with other persons and in adapting to new situations and conversations. Also, they will have more social support, and they will have clear goals that facilitate following routines and schedules—in other words, they will be more resilient.

**Teaching Styles and Their Relationship with Dependent Variables (Resilience and Social Mobility)**

The first factor making up the variable for teaching styles is assertiveness. Weissberg & O’Brien (2004) state that teaching activities and styles should be designed to help students develop abilities that will allow them to learn to
cooperate, to resist negative pressure from their peers and to use negotiation as a way to avoid conflicts.

The results obtained in the current study suggest that the teaching style most used by the teachers of those surveyed was the assertive style. This means that the teachers allowed their students to express their opinions and feelings, and encouraged them to state their viewpoints in class and identify the pros and cons of different ways of resolving problems. All of this coincides with the literature mentioned in the previous paragraphs.

In addition, an analysis of the results obtained suggests there is a relationship between the first factor of the teaching styles variable and resilience, in line with what has been reported from a number of studies (Phillips, Boutle, Zigler & Finn-Stevenson, 2004; Waxman, Padron & Arnold, 2001; Weissberg & O’Brien, 2004). The above is reinforced by the fact that the highest mean obtained for this factor was in the high resilience group.

The second factor making up the teaching styles variable is the suggestive/directive factor. Borman & Overman (2004) suggest that for students at risk of having to repeat a grade at school, it is absolutely necessary to establish a clear structure and realistic expectations for their behavior at school. Brooks (2006) adds to the above by pointing to the need for teachers to be constantly communicating the rules and responsibilities corresponding to their students. Reinke & Herman (2002) propose that through discussion and problem-solving, students and all members of schools can arrive at mutual understandings of school rules and expectations. When consistent limits are maintained and logical consequences are implemented, students’ sense of determination and autonomy improves. With respect to the results obtained in the current study, it was in this factor that the highest correlations were obtained with the five resilience factors and global resilience, suggesting that when teachers teach what they know and set an example for their students, in terms of ways to resolve exercises in class, and to resolve the problems that arise there, the possibility of becoming resilient is enhanced, and this is consistent with what has been reported by Henderson & Milstein (2003) and by Borman & Overman (2004).

The third factor making up the teaching styles variable is teachers’ effective management of their classes. In their research, Waxman, Huang & Wang, (1997) found that resilient students perceived their classrooms as being more structured and satisfying than non-resilient students found theirs to be. Rutter (1979), for his part, states that positive experiences in the classroom might diminish the effects from the considerable stress experienced in the home. This scholar maintains that among the characteristics of the most successful schools are: an appropriate physical environment, affective feedback from the teacher toward students, frequent use of praise, good models of behavior from teachers, and providing students with tasks demonstrating responsibility and attitudes of
trust. The author observed that children who attended such schools had few or no emotional or behavior problems, despite the considerable deprivation and conflicts characterizing their homes (Masten, 2001). The results from the current study reveal a relationship between this factor and resilience, consistent with what was reported by Blum, McNeely & Nonermaker (2002), Borman & Overman (2004), Brooks (2006), Waxman, Huang & Wang (1997) and Werner, (1989).

Learning Styles and Their Relationship with Dependent Variables (Resilience and Social Mobility)

The variable for the learning styles refers to students’ different manners or preferences for perceiving and organizing new information. The results obtained for the learning styles factors of those surveyed suggest a relationship between the four learning styles and the five resilience factors and global resilience. This means that individuals, who like to observe from different perspectives, bring information together to reach conclusions, consider all the alternatives before speaking, and listen to others (reflective style), are resilient. Individuals who like to practically apply ideas, act rapidly, are impatient when there are problems to be theorized, and believe that if it works it’s good (pragmatic style), those who believe that logical and complex theories are the best, who resolve problems in stages, are perfectionists, prefer to analyze and synthesize problems, and are rational and objective (theoretical style), are resilient. The results obtained in the current study indicate that the learning style most used by those surveyed is the active learning style. These are individuals who seek new experiences, have open minds, their days are full of activities, they become bored over long periods, and prefer to work in groups. In addition, a relationship was found between the fourth factor of the variable for the learning styles of those surveyed and the five factors of resilience (strength and self-confidence, social competence, family support, social support and structure). It is important to mention that the greatest relationship of all was between the fourth factor of the variable for the learning styles of those surveyed (active learning style) and the first resilience factor (strength and self-confidence). In relation to global resilience, the factors with the greatest correlation were, first of all, the active style, then pragmatic, then reflexive and lastly, theoretical.

Achievement Motivation and Its Relationship with Dependent Variables (Resilience and Social Mobility)

There is a great deal of literature pointing to a relationship between achievement motivation and resilience. For example, Werner & Smith (1982) report that a sense of self-efficacy and achievement motivation are both associated with
resilience. Waxman & Huang (1996), in an initial study in which they compared resilient students (defined as students who obtained higher scores in mathematics performance tests for two consecutive years) and non-resilient students, found that the first group had significantly a higher mean than the second group in the variables of perception of school involvement, help with homework, feedback from teachers, social and school self-concept, and success motivation. The data obtained in the current study indicates that the majority of the subjects surveyed reported that they are able to continue a task until its completion, doing it increasingly better; able to work hard on a task and complete it even when difficult; able to seek the necessary information to carry out the task; and to obtain satisfaction from doing a good job.

As expected, the results indicate a correlation between this factor and the five resilience factors as well as global resilience, and this is totally consistent with the literature already mentioned here. It was this factor that demonstrated the highest correlation with both the first resilience factor (strength and self-confidence) and global resilience. This suggests that individuals who are able to continue a task until its completion, doing it increasingly better; able to work hard while completing a task, and complete it even when difficult; able to seek the necessary information to complete the task; and able to obtain satisfaction from doing a good job are resilient. This is consistent with the data obtained by Geary (1988), Masten (1994), McMillan & Reed (1993) and Wang, Haertel & Walberg (1999).

With regard to the second factor of achievement motivation, specifically competition, the majority of the subjects surveyed reported that they feel satisfied to a lesser extent when they compete with or do better than others. This is different than for the first factor of this variable. Even so, the results indicate a correlation between this factor and the five resilience factors, specifically moderate correlations with the first two resilience factors (strength and self-confidence, and social competence) and low correlations with the last three factors (family support, social support, and structure), and with global resilience.

**Problem-Solving and Its Relationship with Dependent Variables (Resilience and Social Mobility)**

First of all, it is important to mention that Dubow & Tisack (1989) indicate that both social support and social problem-solving skills improve children’s functioning, minimizing the detrimental effects of stressful ways of living. Parker, Cowen, Work & Wyman (1990) and Kotliarenco (1995) identify effective skills in problem-solving as a psychological attribute associated with resilience. According to Löesel (1992), the most important resources characterizing resilient children include: an educational environment that is open, secure and with clear
limits; having social models who encourage constructive coping; having specific social responsibilities; and at the same time, the demand for achievement, cognitive competencies and at least an average intellectual level, plus temperamental characteristics favoring appropriate problem-solving; having had experiences of self-efficacy, self-confidence and having a positive self-image; active coping as a response to stressful situations or factors; and assigning a positive meaning to stress and coping, while contextualizing it in line with the characteristics of development.

Márquez & Anzola (2008) point to intelligence and problem-solving ability as two factors that act as protectors, that can protect or mitigate the effects from early hardships, and promote resilient behaviors in children and adolescents living in environments considered to be high risk. The first factor of this variable (rational problem-solving) was the only one correlating with overall resilience, consistent with what has been reported by Dubow & Tisack (1989), Kotliarenco (1995), Löesel (1992) and Parker et al. (1990). The other problem-solving factors (impulsive, frustration/discouragement, and evasive) do not correlate with the global resilience factor. The problem-solving style used the least was the evasive. There was a low negative correlation between this factor and the first resilience factor (strength and self-confidence), as expected. This signifies that the more strength and self-confidence a child has, the less he/she avoids finding a solution to a specific problem, or resolves the problem very late or only after “going round and round.” This corroborates what has been expressed by Dubow & Tisack (1989).

In the following section we will discuss the results obtained from the multivariate multiple regression technique in relation to the dependent variable resilience, allowing us to identify the independent variables that best predict resilience.

One of the most important findings in this study was the identification of the two independent variables that best predict resilient behavior, specifically: the first factor (mastery) of achievement motivation, which has already been extensively identified in the literature in this regard (Bernard, 1993; Dass-Brailsford, 2005; Geary, 1988; Masten, 1994; McMillan & Reed, 1993; Pisapia & Westfall, 1994; Wang et al., 1999, Werner, 1993), and the first factor (reflexive) of the learning styles of those surveyed. The latter is considered to be one of the most important contributions to resilience research from this study, since although some characteristics of the individuals who use this learning style have been previously identified as indispensable elements for resilience (considering various alternatives before acting and resolving problems), they had not been grouped and defined as a preferred style in the construction of learning, as in the current study.

This suggests that individuals with the capacity to become more resilient are able to continue a task until its completion, doing it increasingly better; work
hard during a task and complete it even when difficult; seek the necessary information to carry out a task; and obtain satisfaction from doing a good job. These individuals also like to observe from different perspectives and to bring information together to reach conclusions, and they are prudent, considering all the alternatives and listening to others—in other words, their preferred learning style is reflexive.

**Social Mobility and Its Relationship with Independent Variables**

Education has been considered to be one of the primary mechanisms for social mobility, and therefore, one of the ideal instruments for fighting inequality (Rodríguez & Valdevieso, 2004; Saavedra, 1997). The same is true in Mexico, where especially in contexts of high levels of marginalization, school activity appears to be an automatic mechanism for improving living conditions. Thus, families place some of their highest expectations on school in relation to improving their socioeconomic situation, and school promises to serve as a safety net. Most research has consistently found a strong relationship between educational level and social mobility. Specifically, the individuals who move up the socioeconomic ladder are those who have achieved higher educational levels than those individuals who move down or remain at the same level on the ladder (Dahan & Gaviria, 2001; Dyhouse, 2001).

What can be observed in general is that beneficiaries of the Oportunidades Social Program are characterized by historically low educational levels for parents, spouses and those surveyed, and most of them have dropped out of school early. The assistance offered through this program is not enough to lead to significant social and educational mobility. Thus, the mobility in this population is very low, together with the already-described precarious conditions in the schools attended by both the beneficiaries of this program and their parents. This explains to some degree the results obtained from the current study in which no relationship was found between social mobility and the socio-demographic, independent school-related variables.

In conclusion, it is important to state that for those working in the area of poverty, at both theoretical and practical levels, the concept of resilience and related concepts (protective mechanisms and factors) open up a range of possibilities, since the strengths and positive aspects of human beings are emphasized. This approach is interesting especially in comparison to the approach that prevailed during the 1960s in which the deficiencies or deficits of children living in poverty were highlighted. Programs based on the latter approach were of a compensatory nature, since their objective was to compensate for what children in low-income sectors lacked. The focus on resilience, for its part, underscores the positive aspects of persons living in poverty (Kotliarenco, Cáceres & Álvarez,
1996) and points to the possibilities that this opens up for overcoming poverty. This in turn points to the importance of research such as the study reported here, in which the Oportunidades Social Program offers resources to its beneficiaries in order, in part, to resolve deficiencies, however it encourages children to attend school, and helps them to eat adequately and receive the necessary medical attention to be healthy.

Lastly, resilience is important because it is possible to design intervention policies on the basis of this phenomenon. According to Werner (1989), this may take place by diminishing exposure to living situations that provoke stress and that negatively affect mental health, or by increasing or strengthening the number of protective factors that may be present in a given situation. Some examples include strengthening sources of support and caring, and enhancing communication and problem-solving abilities.

To the extent that we are capable of more profoundly establishing the conditions under which resilient behaviors occur, it will be possible to generate interventions that work to promote and support these practices.

REFERENCES


Palomar and Montes de Oca: Educational Factors and Overcoming Adversity


