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ARTÍCULOS DE REVISIÓN

School Performance

Sobre el rendimiento escolar

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Notas

Tribute and recognition to Dra. Violeta Tapia Mendieta.

Summary

The school performance study of students is, due to its relevance and complexity, one of the issues of major controversy in the educational research, and it has been given special attention in the last decades. This study is intended to show a conceptual approach to the school performance construct, contextualizing the reality in the regular basic education classrooms. The construct of learning approaches is presented as one of the factors that influences the school performance of students. Besides, an outlook of the empirical research works related to variables that are presented as relevant when explaining the reason for a specific performance in students is shown. Finally, some models and techniques allowing an appropriate study of school performance are presented.

Keywords: School performance, factors, indicators, evaluation.

Resumen

El estudio del rendimiento académico de los estudiantes es, por su relevancia y complejidad, uno de los temas de mayor controversia en la investigación educativa, y se le ha dedicado especial atención en las últimas décadas. En este artículo se trata de presentar una aproximación conceptual al constructo del rendimiento escolar, contextualizándolo con la realidad que acontece en las aulas de la educación básica regular. Se presenta el constructo de los enfoques de aprendizaje como uno de los factores que incide en el rendimiento escolar de los estudiantes. Asimismo, se presenta un panorama resumido de investigaciones empíricas relacionadas con variables que se han presentado como relevantes a la hora de explicar el porqué de un determinado rendimiento en los estudiantes. También se trata sobre la evaluación del rendimiento escolar y las variables que lo acercan a tener una mayor objetividad. Por último, se presentan algunos modelos y técnicas que han permitido un adecuado estudio del rendimiento escolar.

Palabras clave: Rendimiento académico, factores, indicadores, evaluación.

Introduction

School performance is an issue that deeply concerns students, parents, teachers and authorities not only in our country, but also in many other Latin American countries and continents.

The complexity of the academic performance starts from its conceptualization. Sometimes it is known as school readiness, academic achievement and school performance, but generally the difference in concepts are only explained by semantics as they are used as synonyms. Conventionally, it has been agreed that academic performance should be used in university populations and school performance in regular and alternative basic education populations. We will point out just a few because there is a diversity of definitions.

Several authors agree that academic performance is the result of learning, prompted by the teaching activity by the teacher and produced by the student. From a humanistic approach, Martinez (2007) states that academic performance is "the product given by the students and it is usually expressed through school grades" (p. 34). Fifteen years ago, Pizarro (1985) referred to academic performance as a measure of the indicative and responsive abilities that express, in an estimated way, what a person has learned as a result of a process of education or training.

For Caballero et al. (2007), academic performance involves meeting goals, achievements and objectives set in the program or course that a student attends. These are expressed through grades which are the result of an assessment that involves passing or not certain tests, subjects or courses. On their part, Torres and Rodríguez (2006 quoted by Willcox, 2011) define academic performance as the level of knowledge shown in an area or subject compared to the norm, and it is generally measured using the grade point average.

The purpose of the school or academic performance is to achieve an educational goal, learning. In this regard there are several components of the complex unit called performance. They are learning processes promoted by the school that involve the transformation of a given state, into a new state, and they are achieved with the integrity in a different unit with cognitive and structural elements. Performance varies according to circumstances, organic and environmental conditions that determine skills and experiences.

The academic performance involves factors such as the intellectual level, personality, motivation, skills, interests, study habits, self-esteem or the teacher-student relationship. When a gap between the academic performance and the student's expected performance occurs, it refers to a diverging performance. An unsatisfactory academic performance is the one that is below the expected performance. Sometimes it can be related to teaching methods. (Marti, 2003, p. 376).

To the present, the expansion of educational opportunities in Latin America has not helped to compensate for the inequalities of a socioeconomic and cultural background. Although it is true, today millions of children and young people, previously excluded from education, enter the educational process K-12 (which term includes preschool, primary and secondary education), on average of one half does not complete it, and the other half continues highly dissimilar paths from the point of view of educational quality. In fact, among those who complete secondary education - a condition to avoid the risk of falling below the poverty line in Latin America - at age 15 an average of 50% have failed to achieve a minimum proficiency in learning skills defined by the PISA assessment (Brunner, 2013).

The Organization for Economic Cooperation and Development (OECD) has published the results of the international PISA 2012 with the participation of Peru among other 65 countries or territories.

PISA (acronym for *Program for International Student Assessment*) is held every three years. It tests 15-year-old's competencies in mathematics, reading and science.

PISA 2012 focused on mathematics, that is, the assessment presented more questions in this area, along with Reading and Science questions. In Peru, a nationally representative sample was assessed. This sample included 6035 15-year-old students, from 240 secondary schools or similar institutions in all regions of the country. Public, private, urban and rural institutions were included. While it is true that international comparisons make a significant contribution to the debate on quality of education, they should not be considered only as the final study on educational accomplishments.

The results achieved by Peru in PISA 2012 in Mathematics are low. Peru's average score was 368 points. According to performance levels, PISA places students in 6 levels. On average, the assessed Peruvian students are located at Level 1, although a significant percentage (47%) is below level 1. In Science, the situation of Peruvian students is similar to that in mathematics. A score of 373 was obtained and, on average, students are also at Level 1 (Peruvian Ministry of Education (MINEDU) - Measurement Unit of Educational Quality (UMC), 2012).

Regarding reading competencies, while our students showed low results in PISA 2012 compared to other Latin American countries participating in PISA, an steadily progress over the last 11 years is reported in this area. Between 2001 and 2012 the Peruvian average has increased from 327 to 384 points. In the previous cycle, PISA 2009, we have increased in 14 points which is the highest progress among Latin American countries participating in PISA (MINEDU-UMC, 2012).

We share the findings of Llorente (2013) formulated in *PISA School failure and educational reforms*. He states that it is a falsehood that the PISA

report evaluates competencies. The truth is that this assessment does not evaluate, but it examines based on a competency-based model which is no longer reduced to three subjects, but to certain aspects of these three subjects. For instance: language tests do not imply that the student writes a minimum text at any time. Students only have to choose between options, that is: objective tests of text type, which can often be guessed by chance. These are a tests taken out of context that do not even measure what they say they measure, and these tests are performed in samples of population that are not representative of the group, since there is no group as such. The diversity of students, teachers, families, educational centers, autonomous communities and countries is so large that it invalidates these types of very standardized tests that do not really say anything, no matter how many experts persist in using them to explain the same thing that they could argue without them. Actually, they do not contribute to education and its improvement, especially when what is published in the media is entirely superficial and it lacks of intellectual rigor.

In this vein, Inzunza (2009, quoted by Llorente, 2013) points out, referring to SIMCE (System for Measuring the Quality of Education, Mexico), that this type of tests "don't not measure the complexity of human learning, but the behaviors of training in issues that become the foundation of the curriculum content. This creed which involves tests like SIMCE do nothing but accept a poor and distorted understanding of students' progress." (p. 5).

"School failure" is not tackled with exams and school systems do not improve by taking tests nonstop. Failure and success are market concepts which have never been considered in the educational world and we have to avoid the strong negative component they both imply. We observed a positivist bias that Marin (2013) describes with these words: "It is studied what fits best in the method, which is best measured, while what it is not so easily quantifiable is invisible." In this case, PISA has the positive aspect

of explicitly stating its approach, and thus it doesn't intend to evaluate education as a whole, it doesn't even intend to make of it assessment the most important fact in education.

What is really important and useful is to define the educational goals we want to achieve, to analyze the contexts and difficulties we encounter, and to create proposals and mechanisms of action that will allow us to achieve these goals.

It is known that during adolescence remarkable physical and psychological transformations occur, especially in personality. These transformations could affect school performance; therefore, teachers must be prepared to positively channel these changes; otherwise, they might take an adverse course. Similarly, we should go for flexible teaching interactions and methods, capable of adapting to students with very different personalities.

We should also consider that if impulsivity affects the ability to learn, it may only affect the individual's crystallized intelligence, not his/her fluid intelligence. This is because first one depends more on teaching-learning processes, while the fluid intelligence refers to the ability to establish relationships regardless of prior knowledge acquired.

In this regard Llorente states that improving the educational situation implies to implement, strengthen and apply in all the educational centers, all the various measures that have been proven useful when dealing with diversity: such as splitting, individualized tutoring, the Initial Professional Qualification Program (IPQP), school activities programs, interdisciplinary and/or globalizing methodological proposals such as working in areas or projects, intervention of two teachers in a classroom at the same time, classroom organization in cooperative groups, mediation, negotiation and commitments, coordinating support teams, banks of resources and material, the lack of concentration of disadvantaged students in the same classroom or educational center.Also, a good educational monitoring system should promote a change in attitudes in teachers from certain sectors, beginning

with awareness and conviction, rather than imposition. These are attitudes aimed at improving educational practices in the classroom or verification of the curriculum compliance.

Approaches to Learning and Academic Performance.

Approaches in the study of learning have been grouped around two orientations: Quantitative (behavioral and cognitive) and qualitative. Within the qualitative orientation there are two research lines: Styles and learning approaches. The latter are within the paradigm of information processing, but with a different phenomenological approach.

Learning approaches have a predisposing character or orientation to learn in a particular way. This gives them a similarity with learning styles which are "specific and relatively stable ways to process information." Learning styles are predispositions, relatively general and constant, responding to a subject's trend. They derive from the willingness of an individual to adopt the same strategy in different situations, regardless of the specific demands of the task. However, the approaches are more flexible than the styles since they modulate according to the context and needs using the necessary strategies to achieve the intended objectives, which are more specific or particular. (Gargallo, Garfela & Pérez, 2006).

Barca, Peralbo, Brenlla, Seijas, and Santa María Muñoz (2003) point out the learning approaches as the key determinants of academic performance. A learning approach describes the combination of an intention and a strategy when addressing a specific task, at a particular time. Thus, when there is a surface approach, there is an intention of getting high grades applying appropriate memorization techniques, then the student will have an adequate performance. As for the deep approach it involves a self-determined motivation, which involves effort and pleasure for what is been studied. In this regard the student has a high probability of obtaining a high performance in his/her studies.

It is important to remember that learning approaches are not something stable in the student, that is, they are not an immutable personal characteristic. On the contrary, a student is able to adopt either learning approach (surface or deep) depending on the academic task. In other words, learning approaches are based on both: The students' individual characteristics and the teaching context. For this reason, "*a learning approach describes the nature of the relationship between student, context and task*" (Biggs et al., 2001, p. 137).

Deep approach. It is based on an intrinsic motivation; the student has an interest on the subject and learning has personal significance for him. Strategies are used to achieve understanding and to satisfy a personal curiosity. Regarding processes, the student interacts with the learning content, relates ideas with prior knowledge and experience, uses organizing principles to integrate ideas, relates evidence to findings and examines the logic of the arguments used. Regarding results, a deep level of understanding is obtained by integrating well the fundamental principles and facts. Students with a deep approach usually achieve a good academic performance. However, an exclusively deep approach may not be as good for attainment as the predominantly deep approach. According to Biggs (1987) students using the first one define their own goals and try to achieve them their way. If it turns out that these are not academic goals, it gives the impression that the student is doing it wrong in the "official" sense of the term, no matter how satisfying it can be learning from his/her point of view.

Surface approach. It is based on an extrinsic motivation; the student tries to "achieve something" and avoid failure. The student's intent is to comply with the evaluation requirements by reproduction. Strategies are used in a rote learning. The processes are oriented to rote learning by repetition, so that facts and ideas are barely interrelated. The student accepts ideas and information passively and concentrates only on a test or exam. The result is a rote memorization, without recognizing principles or guidelines, and a zero or superficial understanding level. These students have a poor performance with respect to the objectives and they think about leaving school early.

Therefore, learning approaches are learning processes performed by a student when undertaking an academic task. These processes come from both his/her perceptions of the task as well as from the characteristics of the individual (Entwistle & Peterson, 2004).

This concept has both situational and personal elements (Biggs, 1988 and 1993): When a student faces a task he formulates two fundamental questions: what do I get from this? And how do I get it? The first questions refers to goals and motives, and the second question refers to strategies and resources to achieve those goals (McCune & Entwistle, 2011). Thus, learning approaches are based on motives and use certain strategies.

In this context, teaching performance, as described by Tejedor (2003), changes based on the learning results to be achieved. It is also necessary to spend more time preparing materials, designing activities, helping students to actively build knowledge and being aware of their ways of learning. This involves giving them control of their own learning, preparing questions to promote discussions, planning activities that require the students' active participation.

Research on Academic Performance.

Among the studies made in Latin America and Spain it is possible to distinguish some whose aim have been to conceptualize the inequalities in the distribution of education as well as the opportunities to receive it. A second group of studies focuses on measuring and finding these inequalities. A third group consists of studies dedicated to examine the trends that over time have been following the distribution of educational opportunities (relationship between different social groups and quantity as well as quality of education received (Gutierrez & Montanez, 2012).

From the psychological point of view, school grades have been used as a performance criterion and these have been related to different cognitive,

behavioral and self-control variables. They have also been related to study habits, student's personality, professional interests, school and family environment, school and gender (Bertrams and Dickhauser, 2009; Steinmayr & Spinath, 2009).

As pointed out by Willcox (2011), besides the critics and the debatable aspects about grades, most researches refer to this measure as the reflection of performance. It is also taken into consideration for scholarship requirements, promotion to higher education levels and getting a job, and it is the main indicator of the student's school results. There are studies that seek to calculate some reliability and validity indices of the most used academic performance criteria: school grades.

Cascón (2000a) attributes the importance of this issue to two main reasons: 1) One of the social problems, and not just academic problems concerning political leaders, professional educators, parents of students and citizens in general, is the achievement of an efficient and effective education system that provides students with a suitable framework where they can develop their potential; 2) On the other hand, school grades are and will probably continue to be the indicator of the education level acquired in this state and in almost all developed and developing countries. At the same time, school grades are a reflection of assessments and/or exams in which the student must demonstrate his/her knowledge on different areas or subjects. Subjects that the system considers necessary and sufficient for the student's development as an active member of society.

Cascón (2000b) concludes that "the psychopedagogical factor that is more important in predicting academic performance is intelligence, and therefore, it seems reasonable to use standardized intelligence instruments (test) in order to detect possible risk groups of school failure".

Intelligence and aptitudes are variables frequently used as predictors of academic performance since tasks and academic activities require the use of

cognitive processes. Most studies on intelligence and school performance confirmed their relationship range between .40 and .60. However, to a lesser degree, mental aptitudes appear to relate to performance. In general, according to Gonzalez-Pienda (1996), available data only allows ensuring that intelligence explains no more than 33% of the variance in performance.

In this regard, when talking about intelligence variable in relation to the academic performance, we should point out a study by Pizarro and Crespo 2000 on multiple intelligences and school learning. In this study they state that:

> Human intelligence is not an easily identifiable reality. It is a construct used to estimate, explain or assess some behavioral differences between people: academic success/failure, ways of interacting with others, projections of life, talent development, educational grades, cognitive test results, etc. Scientists, however, have been unable to strongly agree about what to call intelligent behavior (Rojas, 2005, p. 18).

Barchard (2003) found that cognitive abilities and personality traits predict, with statistical significance, the academic performance.

Gonzalez (1997) performed a study were 1124 students, from secondary education in the Autonomous Community of Galicia, were given the intelligence test D-48 and their academic grades were collected. It was found that the students with a high IQ obtain higher academic achievements than the students with a low IQ in the subjects of Natural Sciences (49.6; p <.001), Language and Literature (F = 47.03; p <.001), Mathematics (F = 82.57; p <.001), Plastic and Visual Education (F = 18.68, p <.05), Technology F = 25.26; p <.001) and the overall performance (F = 46.26; p <.001).

The study of Laidra, Pullmann and Allik (2007), compares the correlation between intelligence and performance to the correlation between personality

and performance. The average correlation between IQ and performance is about .50, varying according to measures used, and descending with age, being higher in primary school and lower in secondary school and university. The decrease appears to be due to the restriction of the range that occurs as a result of the decrease in student enrollment in the highest levels of the education system (Laidra, Pullmann & Allik 2007). In the investigation of Muelas (2011) we observed the same thing, since in the 4th grade of the Obligatory Secondary Education (ESO) there is a higher correlation than in the first year of high school. This pattern is reproduced in relation to personality, as discussed below.

It is necessary to consider other variables, regardless of grades and level of students' intelligence, which influence their school performance. Here, we will refer to factors related to personality. We are leaving other variables out for reasons of space.

Etymologically the word personality comes from the word person which in Greek is *prosopon* meaning "mask". Human beings are different but also equal. A fundamental task is to achieve a balance between what unites us and what differentiates us. (Muelas, 2013). Personality can be synthetically defined as: The set of characteristics or pattern of feelings, emotions and thoughts related to behavior, that is, thoughts, feelings, attitudes, habits and behavior of each individual that persist over time in different situations, distinguishing one individual from another and making him/her different from others.

Among the most relevant personality traits, we can mention the following: First, it *doesn't* have a real existence, it is inferred from the individual's behavior. It is an abstraction that allows us to organize experiences and predict behavior in special situations. Second, it is the usual behavior of each individual, including both its overt behavior as well as his/her private experience. It doesn't consist of a sum of isolated behaviors, but includes behavior in its entirety. Third, it is produced by the interaction

of the individual's genetic inheritance and environment and by the social learning and personal experiences. It develops and changes throughout life. Finally, personality is individual and social.

From the moment we were born all of us begin to form our personality. Everything contributes to form the individual and to establish his/her first conceptual frameworks. The way to receive, process, code, store and retrieve information is going to be influenced by different characteristics of the individual and social agents such as: family, school and environment. Based on Personality Psychology, we consider that an evaluation of the different ways of feeling, thinking and acting is needed to educate taking into account these differences (Toro Garcia-Forero, Pont & Tous, 2007).

The research of Barbaranelli, Caprara, Rabasca and Pastorelli (2003) suggests a negative correlation between academic performance (measured by grade point average) and questionnaire scores for children (Big Five), as well as positive correlations between grade point average and openness and responsibility in primary and secondary school. Likewise, Hair and Graziano (2003) analyzed the relationship between the average grade of secondary school students and Big Five traits assessed based on bipolar adjective scales, finding a positive and significant correlation for all personality factors except for emotional stability that was not significantly related to the grade point average.

In a study conducted by Castro and Casullo (2001) using the BFI questionnaire (Big Five Inventory: Extraversion, agreeableness, conscientiousness, neuroticism and openness) in a sample of 337 Argentinian adolescents aged 13 to 19 who were attending secondary public and private schools; they found that the personality dimensions studied seem to differentiate between profiles of good and poor performance in school. Teenagers who are organized, conscientious, less impulsive, and aimed at achieving goals are also those who are the best ones suited to school routine.

They get the highest grades and self-perceive a greater satisfaction derived from their academic performance. Also, to a lesser degree, these young people are the most sensitive, nice, cooperative and affectionate students. They also perceive more satisfaction regarding their family ties than those with poorer performance at school.

By contrast, young people at risk likely to show behaviors of school failure are irresponsible, careless, informal and forgetful. They get poor performance at school and feel dissatisfied with their family ties. They are more hostile and less friendly than the group with high academic performance (Castro & Casullo, 2001).

Moreover, information provided years ago by Cattell and Kline (1982) and Eysenck and Eysenck (1987) is confirmed. According to this information during secondary school students, who are somewhat introverted, often get higher grades than extroverted students, perhaps because they concentrate better. From the UK, Crozier (2001, p.41) points out that several studies show that extroverted primary school students have a slightly higher performance, while in secondary school this advantage disappears and the trend is reversed. The results found cannot be considered as absolute propositions, since they may be influenced or mediated by variables such as sex, age, teaching style, type of school activity, other personality traits, specific learning situation, etc.

Rothstein, Paunonen, Rush and King (1994) argue that some characteristic modes of behavior in students such as extroversion and introversion may be related to the academic field. The personality of an introverted individual generally focuses more on his/her inner thoughts and feelings, and the personality of an extroverted individual is generally focused on external things, such as social life; and not so much on his/her internal aspects.

In mechanical tasks, extroverted people have a high performance, but in detailed tasks they perform poorly since they are impulsive. Meanwhile, in

detailed tasks, introverted people have a high performance, since they think more. Tasks and learning at this stage are deeper and require perseverance, organization and they are perfect for an introverted personality. (Reyes Gomez & Gonzalez, 2012, pp. 11-12).

An extroverted personality benefits the student until adolescence. It is beneficial during early school stages, in childhood and in primary school. It helps them to be more successful and to have a better performance. But at secondary school is no longer an advantage to be an extroverted student. The differences between extroverted and introverted, do not influence the results of the students' abilities (Reyes Gomez & González, 2012). The extraversion predicts high grades in secondary school and lower grades in university (Eysenck, 1997).

Heaven, Mak, Barry and Ciarrochi (2002) also studied how personality variables measured by the *Junior Eysenck Personality Questionnaire* (JEPQ) and adjective scales for kindness and responsibility were associated with self-assessed academic performance in adolescents 14-16 years of age. They found a negative correlation with psychoticism and positive correlation with kindness and responsibility.

Another study, (Maqsood, 1993) using the JEPQ in adolescents 14-15 years of age, reported a negative relationship between psychoticism and academic performance in language, but performance was also significantly and negatively related to extraversion and neuroticism.

In a study, Muelas (2011) focuses on the last year of the Obligatory Secondary Education (ESO) and the first year of high school close to reach college level, he noted that regarding sociability, a variable related to extraversion, there are no significant correlations regarding the students' performance. In 4th grade of ESO, such correlation is -.040 and in the first year of high school is .024.

In the specific case of children and adolescents, impulsivity and aggressiveness are associated with numerous disorders with significant consequences. First, impulsiveness affects academic performance and it is involved in various disorders that affect learning, such as hyperactivity disorder and attention deficit favoring school failure (Fink & McCown, 1993).

It seems that impulsivity acts as a moderating variable in the relationship between intelligence and academic performance. Individuals with high impulsivity and high academic skills get worse academic results than those with low impulsivity and high academic skills (Helmers, Young & Pihl, 1995; Zeidner, 1995). One possible explanation is that students with poor academic performance tend to have a way of solving problems in an impulsive and careless way, giving the first answer that comes to their minds, when the answer to the problem is not immediately obvious.

In this regard, with respect to traditional teaching-learning perspectives that focus on learning based on memorization which is linked to crystallized intelligence, results show that there is no relationship between dysfunctional impulsivity and the individual's innate intellectual potential. However, dysfunctional impulsivity affects learning which allows developing such potential and which is manifested in the crystallized intelligence. This is because the dysfunctional impulsivity has presented significant correlations with the intellectual abilities related to crystallized intelligence but not to fluid intelligence. Therefore, dysfunctional impulsivity also affects the academic results, leading to higher failure rates (Morales, 2007).

The study of Manay (2009) in a sample of 300 students from 3rd, 4th and 5th grade of secondary school in San Juan de Lurigancho, found a significant relationship between anxiety and academic performance.

Aliaga, Ponce, Bernaola and Pecho (2001) investigated the students' performance in subjects such as mathematics and statistics and their

relationship with psychological variables such as self-concept and personality traits - among others - in a sample of 1096 students of 3rd, 4th and 5th grade of secondary school in Lima. They found a correlation between performance in these subjects and animation features (F-), respect for norms (G +) and sensitivity (I +) measured by the 16 PF Cattell - Form A. They verified that personality, considered as a main independent variable, significantly affects global study habits.

In their study, Cominetti and Ruiz (1997 quoted by Edel, 2003) report that it is necessary to know which variables influence or explain the distribution level of learning. The result of their study suggest the following:

Expectations from family, teachers and students, regarding learning achievements, are of particular interest because they reveal the effect of a set of prejudices, attitudes and behaviors that may be beneficial or detrimental to homework and results (p. 14).

Also that: "the student's performance is better when teachers express to them their positive expectations and this is completed by an adequate environment in class"

The study of Toro Garcia and Tous and Pont (2009) suggests a possible link between the personality of adolescent students with a learning disorder and school harassment (or bullying), due to patterns of vulnerable and manipulative personality, along with a poor school performance shown by these students. This leaves open a line of research for future studies based on this area to confirm whether this link exists or not.

When researching about school supplies in secondary education and their effect on the students' academic performance, Piñeiros and Rodriguez (1998) postulate that:

Wealth of student's context (measured as a socioeconomic status) has positive effects on academic performance. This result confirms that

sociocultural wealth of context (correlated with a socioeconomic status, but not limited to it) has a positive effect on the students' school performance. This emphasizes the importance of shared responsibility among family, community and school in the educational process. (p. 34).

Omar Uribe, Ferreira Leal and Terrones (2002) addressed a study of the most common causes employed by the students to explain success and/or failure at school. The study was performed on samples of students from Brazil (N = 492), Argentina (N = 541) and Mexico (N = 561). These were students from the last three years of secondary education in public and private schools. It was verified that students from all three countries consider effort, ability to study and intelligence as the most important causes of their school performance results. Regarding the dimensional meaning of the specific causes, results indicate that successful students from all three countries agree in perceiving effort, intelligence and ability to study as internal and stable causes. Brazilian and Mexican but Argentinian students also consider mood as an internal and stable cause. The difficulty of the test, family support and teachers' judgment were considered as uncontrollable causes by Argentines and Brazilians, but not for Mexicans. When facing failure, they came up with unique answers. Findings were discussed in light of the socio-cultural values and educational characteristics of each participating country.

Tejedor (2004) believes that most works on academic performance analyze this aspect based on: Identification of school dropout rates, rate of success or curriculum completion as scheduled, rates of delay in studies completion or degree change rates. Nevertheless, there are also studies with other indicators more focused on traditional academic achievement (grades, number of subjects passed, rates of exams taken, etc.).

In addition to this, some curriculum planning factors were found to be related to inadequate characteristics of curriculum designs, rigidity of the educational structure which causes a negative effect on the student's

motivation; quality of teachers regarding their professional and pedagogical training; academic disarticulation between secondary and higher education which is reflected in the student's difficulty to adapt when beginning university. Hernandez and Polo (1993 cited by Willcox, 2011) state that the poor academic performance is due to both, flaws in the organization of activities by the student, and errors in the studies planning.

Various structural models of academic performance have been defined based on several studies, as described by Guzman (2012). Among others, we have studies from the Research Center of Washington School which confirmed that the results of the parents' low-income measured the relationship between ethnicity, reading and math performance. The project aimed at studying the relationship between ethnicity (Abbot & Joireman's 2001) and the model of French, Immekus and Oakes (2003) that show that the result of the GPA (grade point average) is highly correlated with university admission. Cognitive factors best predict academic performance and persistence of engineering students. In the model of French, Immekus & Oakes (2003) the average grade in secondary school was considered as a key factor in the academic performance. Students' motivation toward engineering, along with persistence, clear goals and resilience, was an important aspect too. The models of Kember and Leung (2005) show that school environment is not the only determinant in the student's learning ability, but also the role of teachers to stimulate the students' interest towards scientific activities.

Nieto (2008) found that academic achievement is a product influenced by many variables, factors and circumstances that should be addressed through empirical research, despite the difficulties in its design and methodological strategy. He also proposes to achieve the so-called middle-range theories in order to develop a broader progressive conceptual framework that promotes consolidation of special theories to obtain hypotheses that can be empirically investigated even further. He points out some advances achieved between the 70s and the mid-2000s referred to research at the level of primary education:

1. Between the 70s and the 80s a number of key conclusions appear to become a constant over the years. Conclusions such as self-concept, social origin, verbal comprehension, intellectual ability and preschool as elements that determine performance.

2. In the following decade, the importance of self-concept as a determinant of performance, followed by issues of great interest such as the importance of preschool, how course repetition affects, importance of expectations, motivation, emotional factors, anti-authoritarianism, and as in the previous period, references to the social origin and the predictive capacity of variables related to language use and proficiency.

3. From the 90s, the importance of language competence as a prominent element of research, plus the subjects of school integration and bilingualism. Emphasizing again on socioeconomic variables as factors that differentiate school performance and adaptation, and the importance of the gender variable on some specific issues, evident in some cases, questionable in others, but frequently present in studies. Again, self-concept as an element of interest, importance of reading skills, improvement of neuromotor and sensory receptors as determinants of performance, and especially, the need to implement programs of Support and Development of Intelligence.

4. New topics arise between 2000 and 2005. The study on continuous or split shift school day, interest in music, group cooperation and collaborative work as a contributing factor in academic performance. Appearing as the most repetitive element, again, self-concept and, to a lesser extent, expectations, anti-authoritarianism, Comprehensive Development Programs, linguistic training and development.

These examples clearly illustrate the diversity of study methods and results that make it difficult to attempt to draw conclusions about the relationship between personality traits and academic performance throughout different ages. However, personality factors seem to be good performance predictors for which, as noted by O'Connor and Paunonen (2007), they should be taken into account when explaining the students' performance. All responsibility for performance shouldn't be attributed only to cognitive factors.

Pedagogical Evaluation.

Pedagogical Evaluation is defined as the set of planned procedures which are implemented in the educational process to obtain information necessary to assess the achievement of students' goals. Through its valuation criteria, academic performance is presented as a level of proficiency or performance seen in certain tasks that the student is able to perform (and they are considered good indicators of the existence of processes or intellectual operations whose achievement is assessed). Conceptual pedagogy proposes the following categories to identify proficiency levels: elemental (contextualization), basic (understanding) and advanced (proficiency).

The evaluation of school performance has, in fact, a double interest: on the one hand, it indicates to what extent students achieve their learning for which they direct their main effort; and on the other hand, it provides knowledge about the effectiveness of schooling, since it is not easy for the school to achieve complex and abstract goals - such as acquisition of values, character building, creation of study and work habits, love for culture, etc. - if it fails, at least it achieves less complicated and more specific goals, such as learning objectives. These type of goals are traditionally required by people involved in education and society (Cano, 2001).

Regardless of the categories used to measure performance, it is fair to say that it can be of three types, depending on the type of learning being assessed: cognitive, affective and procedural.

As various studies have determined, the achievement of these types of learning is related to: 1) the student's cognitive ability (intelligence or skills), 2) motivation to learn, 3) way of being (personality) and 4) the "know-how" (González-Pienda Nunez, Gonzalez & Garcia, 1997).

Furthermore, a student can fail school due to 1) Lack of interest in everything related to school, 2) School passivity, when tasks are performed only with constant encouragement, and 3) School opposition, when the student clearly shows discomfort and rejection to school. Over time these three situations can cause the appearance of affective disorders in children because school becomes a powerful stressor which influences negatively their self-esteem, perception of social competence and future expectations (Diaz, Meadows & Lopez, 2002).

One important aspect to consider is whether the evaluation leads to the improvement of the institution and society or not. The evaluation must have a goal; a goal to achieve knowledge in order to benefit society. Contextualization involves a two-way street in which society influences the institution but it also transcends in that context and reality; otherwise many of the efforts for education would be lost (Cabrales 2008).

Models y Techniques.

Let's consider some recently proposed:

1. Garanto, Mateo and Rodriguez (1985) use a psychological model for the analysis of determinants of academic performance. Their model emphasizes on the student's personal characteristics. According to the authors, regression techniques allow showing to what extent intellectual and self-concept variables influence performance, but these techniques do not detect possible influences of personality. By analyzing the profiles we create a new variable when properly categorizing modal patterns obtained from the HSPQ data. When this variable is correlated to intelligence,

self-concept and performance, it showed its independence from predictors and its predictive value regarding criteria. Finally collected data is analyzed using the LISREL system, contrasting their hypothetical model with empirical data collected.

2. Even though we know about the complexity and controversy of the contextual and motivational variables and indicators which define the performance, and the methods for their measurement, it is possible to define in advance a number of general indicators, based on real data, which allows identifying and forming group of students according to their behavior when facing the career requirements. From there, each group could be studied even further, as well as the context in general, to clarify the reasons for such behaviors. In the same vein, Luque and Sequi (2010) offer us a model that considers an "Overall Academic Performance (OAP)" calculated by adding the partial indices of regularization, approval and cognitive achievement: OAP = Comprehensive performance of regularization + Comprehensive performance of approval + Cognitive achievement. The proposed theoretical model provides a numerical index representative of the Overall Academic Performance of the student, as a result of mathematical processing of the data arising from the student's real and concrete behavior during his/her academic activities.

3. Ibarra and Michalus (2010) define the academic performance as the average subjects which are annually approved. By means of the Logistic Regression technique, they determine the impact of different personal, socioeconomic and academic factors. They use the Logit model which is appropriate in the analysis of a single nominal or categorical dependent variable and several independent variables.

The main conclusion that can be drawn is that students' performance, is related to the grade point average (GPA) at secondary school, the kind of secondary school (public or private), and the number of passing subjects in their first year at university. The latter being the most important factor, emphasizing the importance of this first stage at university in the student's academic performance.

4. Artavia (2011) believes that most of the recent research trends in the area of educational evaluation have focused on the development of models that specify the structures of knowledge and thinking skills required to answer the test items. The incursion of diagnostic models of cognitive assessment in the educational field makes it possible to have a deeper knowledge about the cognitive abilities evidenced in academic learning, and a more reliable study by identifying and understanding the components that generate learning failures which is more than a statistical description of what a person accomplished or not. This allows the planning of teaching strategies based on these achievements and the proposal of actions to improve weaknesses detected in the individuals.

5. In order to find possible solutions or improve the teaching-learning processes, Lamos and Giraldo (2011) propose a set of predictors that help explain the academic performance of students in Calculus I, by using multivariate analysis techniques (discriminant analysis and panel data models). Teacher-student relationship, learning strategies, student-course relationship and family environment are studied as possible determinant factors of academic performance, measured by the final grade obtained in two time slots by students studying the subject. There are six dimensions when explaining academic performance: 1) Study habits, which include a set of factors that create the concept, 2)

Relationship with the subject, 3) Student environment 4) Program selection 5) Attitudes towards the subject, and 6) Confidence in the institution. The theoretical framework used is the constructivist model and the theory of meaningful learning. This work has allowed them to develop a set of guidelines to help improve the teaching process of mathematics. These guidelines are oriented to follow three fields in the teaching of mathematics: 1. Teacher's role. 2. Methodology used in the teaching-learning process 3. Institutional monitoring to verify the teachers' compliance in the area of mathematics.

6. Based on the Social Cognitive Theory, Medrano (2011) notes that numerous constructs have been proposed to explain and prevent academic failure. He emphasizes on the Self-efficacy beliefs for Performance (AR) and for Self-regulated Learning (AA). However, Medrano noted that there were not studies to inquire the role of academic social self-efficacy (ASA) despite the importance of social behaviors in education. For which it is proposed to develop an explanatory model to verify the contribution of these three dimensions of self-efficacy on performance of university freshmen. For this, a prospective ex post facto design was conducted with more than one causal link, with the participation of 582 university freshmen. The results observed in the path analysis indicate that the model provides an excellent fit to the data (TLI = .97, CFI = .99, GFI = .99 RMSEA = .06). Indeed, the contribution of the ASA is verified and it has a direct effect on AA (β = .35) and an indirect effect on beliefs of AR (β = .05).

7. Following the proposal of Fenollar, Cuestas and Roman (2007), Kuster and Vila (2012) propose an integrating model of theories that explain the student's academic performance (considered as

the perceived learning and grade expected by the student). In particular, models based on the Cognitive-Achievement Theory initiated by Deck (1986) and Self-efficacy Theory developed by Bandura (1986) analyze the effect that these theories have in 1) student's perception on learning, 2) expected grade and 3) overall student satisfaction. They based their findings on the student's figure, which is an area of the education system and part of the teaching-learning process. Thus, the role of the student's motivation (self-efficacy and orientations) is emphasized in his/her expected academic performance and satisfaction.

8. Guzman (2012) acknowledges that the study of *academic performance*, associated with the effectiveness of higher education, has become a constant concern and has been addressed by many researchers for several decades. In his research he proposes contributing with elements for understanding the phenomenon of university academic performance, and evaluating the profile of students' selection and development throughout their university career. Specifically, he intends to analyze the influence of the student's profile variables, classificatory variables, initial and final performance on the outcome of the student performance. For this purpose, it is necessary to propose and empirically validate different models to explain and predict academic performance of university students in their different careers, identifying the factors that affect it positively.

He gives some really important recommendations 1) secondary school grade point average has a greater effect on academic performance than the result of academic aptitude test, 2) it seems advisable to monitor the academic performance of students according to the school from which they came from, and enforce an admission interview to all freshmen students and systematize it; 3) implementing a *mentoring plan* for all freshmen students with the

participation of teachers. Also, an interview carried out by the university career director in order to monitor each student during their first years in the institution; 4) it is recommended that students attend educational psychology workshops during the first year of their career based on their identified needs. Also, it is recommendable for students to know a foreign language (English, etc.).

A Final Word.

1. Early identification of students at risk is a very important action to reduce potential failures and implement intervention programs for preventive purposes. The aspects considered in this article have clear implications for the provision of educational advice and counseling tasks. First, it is important to take into consideration personality variables in school counseling because traditionally only pathological aspects of youth are considered. Second, it is convenient to take into account that a particular personality disposition moderates the effective adaptation of students to the school environment.

2. At present, the different variables that may influence the students' academic performance should be analyzed in order to respond to social concerns of poor academic performance.

3. The new lines of research contribute providing performance models that help to improve students' admission profiles, to perform psychopedagogical interventions and to improve the quality of university education according to the context and characteristics of each country. The examples presented clearly illustrate the diversity of methods and results that the study offers. This makes it difficult to draw conclusions about the relationship between personality traits and academic performance throughout different ages.

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