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Original article

Academic underachievement, self-esteem and self-efficacy in decision making

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Abstract

The aim of the study was to investigate the relationship between decision making styles, self-esteem and self-beliefs about decision- making ability and the differences linked to academic performance. A sample of 100 students split into two groups aged 15-16 years and 17-18 years participated in the study. All subjects compiled the Multidimensional Self-esteem Test (T.M.A. – Bracken, 1993) for the evaluation of *academic success* and *competence of environmental control* and *How I Make my Choices* (H.M.C. – Filippello et al., 2011), a structured interview, specifically designed to measure decision-making styles in two different contexts (school context *vs.* social context) and decision-making self-efficacy (Low *vs.* High Self-efficacy in making decisions).

The exploratory factor analysis reflects the theorized construction. Age and gender differences were found. Furthermore, as expected, low academic performance was associated with lower self-esteem, lower decision-making self-efficacy and more dysfunctional decision-making styles. Students with a high academic performance, instead, showed higher self-esteem, higher decision-making self-efficacy and more functional decision-making styles.

Data encourages the use of H.M.C., not only in the research of personality but also for educational and counseling purposes.

Keywords: decision making, self-esteem, self-efficacy, adolescence.

Introduction

Personality features of each student (skills, cognitions, attitudes, motivations) can intensely determine the learning process, facilitating or hindering it and may eventually lead the student to school failure. Covington (1992) stated that a student dominated by anxiety and lack of self-confidence will encounter many difficulties in directing his

behavior towards the goals he would like to achieve. Many studies have demonstrated that approaches and answers to challenges in the school environment influence success both at school (Midgley et al., 1996; Nurmi et al., 1995) and at university (Norem & Cantor, 1986; Rhodewalt & Hill, 1995). For example, several researchers (e.g., Jones & Berglas, 1978; Pintrich & De Groot, 1990; Ruthig et al., 2008; Dickhäuser et al., 2011) reported that students who show good motivation, optimism and perseverance focus on the task; positive emotions and level of perceived control promote school success and personal satisfaction. On the contrary, fear of failure, lack of responsibility and a high level of task avoidance can lead to failure (Larcan, 2000; Sorrenti et al., 2004).

Psychological factors and decision making in adolescence

These variables and their consequences are crucial for the future goals that the student aspires to; in fact, repeated failure increases anxiety and leads to task avoidance; on the contrary, academic success encourages the individual to find effective ways to face future challenges and make productive choices (Nurmi et al., 2003). Students who used disengagement coping styles were more likely to see education as a source of stress or as an escape compared to optimists. Emotion-focused coping positively predicted several meanings of education, including seeing university experience as providing opportunities for social connections, for learning and for self-development (Krypel & Henderson-King, 2010).

Some studies on decision making (Cohen et al., 1995; Leong & Chervinko, 1996; Meldahl & Muchinsky, 1997; Nurmi et al., 2003) have found that individuals with high levels of anxiety, negative thoughts about themselves and identity problems find more difficulty in choosing their own course of study compared to their peers who do not develop these problems. These subjects, like most people who are indecisive, show low self-esteem, a poorly structured identity, helplessness, high levels of frustration and an external locus of control.

In an interesting study, Saka and Gati (2007) elaborated a taxonomy considering three variables which, from what literature shows, are mainly related to decision making, or more accurately: pessimism, anxiety and the concept of themselves/identity, finding significant correlations between indecision and the concept of themselves, self-esteem and anxiety; moreover, the difficulties experienced by the examined subjects lasted over time, hindering future decisions.

Decision making is particularly complex during adolescence, which is a critical period of transition. The adolescent has to undergo the evolution task of making the best choices for his future independently, in particular at school and in a constantly evolving society, without reference points. Regarding school choices in particular, many young people appear to be undecided and insecure, tending to make external assignments (they sustain that the future depends on fate and uncontrollable events) and lack trust in their decision-making abilities and to use inadequate decisional strategies (for example: procrastination and avoidance of the decision) (Nota & Soresi, 1999).

The self-esteem is closely connected to the se*lf-determination*, or better the *sense of control on their own life*, the possibility to *make choices* selecting in an adequate way the alternatives and, therefore, to influence the arising consequences. Therefore, "self-determination" means "empowerment", active participation to decisional process to reach goals considered important to their own life. High values of self-determination are

associated to: high self-efficacy, perception of support from others and effective levels of decision among adolescents who have to face important choices, like the school one (Nota et al., 2003). It is easy to deduce that an adolescent who attributes the cause of a wrong choice to his limited capacity is at risk of depression. He may come to infer that success is determined by luck, or the help of others, or the easiness of the decision. It follows that he shows reluctance to make further decisions (motivational level), he thinks he cannot control the decision-making process (cognitive level) and he is overwhelmed by a sense of helplessness and frustration (affective-emotional level). Finally, if this adolescent, for example, shows learning disabilities it is very likely that he may develop helpless behavior (Abramson et al., 1978) if exposed to repeated failure (Filippello & Sorrenti, 2008; Filippello et al., 2011).

The present study

The aim of this research, was to explore the complexity of decision making by comparing two main contexts of adolescent life - school and peer group - analyzing them together and not as most studies in literature do. A person, in fact, may have different decision-making styles depending on the context (e.g., difficulties in school decisions, but not in a social sphere or vice versa) and, moreover, he could be pervaded by negative thoughts at school but be self-confident in making his choices in a social sphere (or vice versa). In this regards, structuring an instrument was proposed, which in spite of what happens through other standardized tests, would measure the decision-making procedures of adolescents in relation to different contexts (for example school and peer group).
The aim of this survey was also to analyze the relationships between decision making and self-esteem of students with high and low academic performance. In addition, it seemed appropriate to investigate the presence of dysfunctional thoughts and the lack of confidence about the ability to make choices ("decision-making self-efficacy") due to school failure and frequent and repeated failure situations experienced. It is predicted that academic success and self-esteem are expected to be positively associated to perception of the ability to make suitable choices and negatively to helpless behavior and dysfunctional thoughts.
Academic performance has been considered as a variable that can differentiate students' outcomes. In fact, frustration which derived from previous and repeated experiences of failure usually affects self-esteem. In some children it may contribute to the onset of helpless behavior. Therefore, it was supposed that students who frequently experience academic failure could present lower self-esteem and a higher level of dysfunctional thoughts about their decision-making abilities and as a consequence inappropriate choice processes.

Method

Participants

The sample consisted of 100 students (61 males and 39 females) aged 15-16 years and 17-18 years. According to their academic performances they were divided into three groups depending on the average given by teachers: high (A, B or C in almost all the subjects), medium (D), low (E and F). The group of students who achieved a medium academic performance was discarded from the statistical analysis. See table 1.

Table 1 Contingency table: sample frequency distribution based on gender and

		Gender		
Academic performances	Age levels	Male	Female	Total
High	15-16 years	15	10	25
	17-18 years	12	13	25
	Total	27	23	50
Low	15-16 years	17	8	25
	17-18 years	17	8	25
	Total	34	16	50

Procedure

Subjects were involved in the study as a part of scholastic guidance project. Students completed the questionnaires in their classrooms during school hours in two different sessions. The study procedures were explained, questions were answered, and participants were given a questionnaire packet. The order of testing was balanced within the subjects according to a matching procedure. Instructions stated that the questionnaires were voluntary and responses confidential. All students responded to the same questionnaire packet. Participation required between 30 and 45 min.

Measuring instruments

How I Make my Choices (H.M.C.)

How I Make my Choices (*H.M.C.* – Filippello et al., 2011) is a specifically designed structured interview consisting of 14 situations which teens can easily come across and which require decision making. The main objective of this interview is to contextualize the questions as possible to the subjects, making them closer to their experience. The use of standard questionnaires does not always allow adolescents, especially younger ones, to link the statements to a specific event, because questions are quite generic.
The situations described in the interview also differ in episodes involving school life and episodes related to social or family situations. For each situation, four types of choice are described and are referable to the different types of decision focused on: (1) *Vigilance* (2) *Avoidance* (3) *Negligence* (4) *Worry*. The subject must indicate the frequency of each decision making style used (6-point Likert-type scale: "almost never", "rarely", "sometimes" "often", "very often" "almost always") and what he thinks in each situation. Two types of thoughts are presented: two adaptive and two negative, in order to assess dysfunctional thoughts related to helpless behavior. Both the modality of choice (adaptive

vs. dysfunctional) and thoughts (functional: high decision-making self-efficacy *vs.* dysfunctional: low decision-making self-efficacy) were balanced in the interview.
The distinction between academic and social situations was carried out to detect any differences between the various contexts of a subject's life; a person, in fact, may have different decision modalities depending on the context (e.g., difficulties in school decisions, but not in a social sphere or vice versa) or could have negative thoughts at school but he could be self-confident in making his choices in a social sphere (or vice versa).

The Multidimensional Self-esteem Test – T.M.A.

For research purposes, and in line with the other instruments, we used only two of the six scales of the Italian version of the *Multidimensional Self-esteem Test – T.M.A.* (Bracken, 1993): *Academic success* (self-assessment of academic performance) and *Competence of environmental control* (self-perception of ability to solve problems, reach goals, and interact with the school environment). The subject could answer as each statement: "Absolutely True", "True", "Not true" or "Absolutely not true" (4-point Likert-type scale).

Data Analytic Approach

The Statistical Package for the Social Science (SPSS 0.17) was used to conduct an Exploratory Factor Analysis to define the construction of decision-making self-efficacy. Pearson's correlation was performed to examine the relationship between self-esteem and decision making. The internal consistency of the overall scale and subscales was measured by Cronbach's alpha coefficient. Furthermore, multivariate analyses were carried out to verify the effects of academic performance, gender and age (school level).

Results

Reliability of measures

The *How I Make my Choices (H.M.C.)* reported an higher Alpha value (α=.73). Also the T.M.A. obtains an optimal Cronbach's alpha value (*Competence of environmental control:* α=.84; *Academic success:* α=.85).

Relationship between Decision Making and Self-esteem

Table 2 show the results regarding the relationship between self-esteem and decision making.
Self-esteem seems to be the component most implicated in relation to decision-making styles: the higher the self-esteem, the more the vigilant choices and the greater the sense of decision-making self-efficacy. On the contrary, high levels of self-esteem are correlated negatively with dysfunctional stiles and with low decision-making self-efficacy.

Table 2 Pearson's correlations between Self-esteem and Decision Making

DECISION MAKING	SELF-ESTEEM	
	E.C.	A.S.
Scholastic Vigilance	**.441****	**.518****
Scholastic Avoidance	**-.253***	**-.372****
Scholastic Negligence	**-.380****	**-.387****
Scholastic Worry	**-.328****	-.176
Scholastic High DM Self-efficacy	**.465****	**.511****
Scholastic Low DM Self-efficacy	**-.469****	**-.469****
Social Vigilance	**.318***	**.429****
Social Avoidance	**-.313***	**-.256***
Social Negligence	**-.443****	**-.332****
Social Worry	-.211	-.172
Social High DM Self-efficacy	**.399****	**.324****
Social Low DM Self-efficacy	**-.450****	**-.450****

- E.C.: Environmental Control; A.S.: Academic Success
* p<.05; ** p<.01

Effects of academic perfomance, gender and age

Decision Making in a school and social context

To verify the effect of the design, gender, age and academic performance variables on Decision Making in a school and social context, evaluated with an instrument designed by us (H.M.C.), a multivariate analysis was carried out [MANOVA 2 (gender) x 2 (academic performance) x 2 (age) x 6 (H.M.C. scales)].
With regards to Decision Making in school context, the following two differences emerged: gender [Wilk's lambda = .75, F(6,85) = 4.52, p= <.001] and academic performance [Wilk's lambda = .75, F(6,85) = 15.5, p= <.001]. Furthermore, significant differences were revealed in the interaction between gender and age [Wilk's lambda = .75, F(6,85)= 2.30, p= <.05]. As for academic performance, subjects with higher school marks mainly adopt the *Vigilance* style and show higher levels of *High DM self-efficacy*, compared to peers with a low academic performance who mainly adopt *Avoidance* and *Negligence* styles and have higher levels of *Low DM self-efficacy*. Relatively to gender, on one hand if females mainly choose the *Vigilance* style, on the other, they also show *Worry* and *Avoidance*; instead, male peers have higher levels of *High DM self-efficacy*, even if they less frequently adopt the *Vigilance* style. In relation to the age variable, younger students mainly choose the *Negligence* style and have lower levels of *High DM self-efficacy* compared to older subjects.
Concerning Decision Making in a social context, significant effects emerged for gender [Wilk's lambda = .77, F(6,87) = 4.14, p= <.001] and academic performance [Wilk's lambda = .56, F(6,87) = 11.3, p= <.001]. Futhermore, the effects of interaction between

gender and academic performance [Wilk's lambda = .86, F(6,87) = 2.21, *p*= <.05] and gender and age were revealed [Wilk's lambda = .86, F(6,87) = 2.24, *p*= <.05]. As for the gender variable, also in this case, females mainly adopt the *Vigilance*, style but also show *Worry* and *Avoidance*; males have higher levels of *High DM self-efficacy*, even if adopting the *Vigilance* style less frequently. With regards to the variable on academic performance, even if there are no differences between students with a high and low academic performance in decision-making styles, subjects with a high academic performance have higher scores for *High DM self-efficacy* compared to students with a low academic performance who instead have higher scores for *Low DM self-efficacy*.

Self-esteem

A multivariate analysis was carried also out to evaluate the effects of the design variables on self-esteem [MANOVA 2 (gender) x 2 (academic performance) x 2 (age) x 2 (scale del T.M.A.)]. The analysis suggests that there are significant effects for academic performance [Wilk's lambda = .67, F(2,91) = 21.89, *p*= <.001] and effects of interaction between gender and academic performance [Wilk's lambda = .92, F(2,91) = 3.64, *p*= <.05]. The differences in the groups of adolescents do not emerge in the subgroups divided into gender or age, as much as those divided for academic performance: subjects with a high academic performance have a higher score in self-esteem, both on the *Environmental control* and *Academic success* scale, compared to peers with a low academic performance.

Discussion

In line with expectations, this research has provided interesting results concerning the relationship between decision making and some psychological correlates, such as dysfunctional thoughts regarding their own decision-making ability and self-esteem in high school students.

Relationship between self-esteem and decision making

From the analysis of correlations between the different measures used, it was found that: the greater self-esteem, the more vigilant the choices and the greater the sense of decision-making self-efficacy. Vice versa, the lower the self-esteem, the lower the belief that they can make good decisions: decision making styles are more oriented to *avoidance, procrastination, negligence* and *hypervigilance*.
The ability to choose is also hindered when you do not feel self-confident or helpless in front of a choice. This finding, already verified in literature, is also confirmed by the results obtained from this research that showed significant correlations between helpless behavior and thoughts regarding dysfunctional decision making. On the contrary, the *Vigilance* (adaptive decisional style) is related to adaptive responses. Moreover, a further confirmation seems to be provided also by the varied results obtained from the two scales (*Competence of environmental control* and *Academic success*) of the test T.M.A.; for example, significant correlations emerged between the T.M.A. test and the H.M.C. interview.

Academic performance, gender and age influence

One of the main aims of the research was to verify if there were differences in Decision Making and students' self-esteem based on academic performance, gender and age. The results obtained are in line with literature and confirmed our hypotheses. Students with a low scholastic performance show a greater use of dysfunctional decision-making styles; in fact, they tend to delay making decisions or approach their choices with anxiety. On the contrary, subjects with a high performance adopt the adaptive style of *Vigilance*.
In line with the foreseen hypothesis, there were also significant differences with regard to the confidence of the ability in making choices (decision-making self-efficacy) at school and in society. In fact, individuals with a low academic performance have provided a number of answers more dysfunctional (low decision-making self-efficacy) than students with a high performance, who responded in a more adaptive way (high decision-making self-efficacy). The differences between the two levels of academic performance were also found in relation to self-esteem, which is lower in students with low academic performance. The difference between the two groups of subjects is specifically evident in the school environment. This result seems to confirm, once again, the relationship between academic success and self-esteem in relation to academic performances. These results confirm literature, in other words: the students who in their school career face difficulties risk to develop more and more helpless behavior, that could last during their school careers as confirmed by research data.
Academic performance in relation to decision making in a social context shows particularly interesting data: even if there are no significant differences in the way that students with high and low academic performances make their decisions, significant differences emerged for self-efficacy; in fact, students with a high academic performance are more efficient in making decisions in daily life compared to those with a low academic performance who show higher levels of low decision-making self-efficacy. This data deserves to be investigated further (does academic achievement perhaps give students greater security in social relationships ?); certainly the distinction made by H.M.C. in a school context and social context has enabled these aspects to be brought to light.
With regards to the age variable, the division of the sample into two groups of age (15-16 years and 17-18 years) allowed some differences between the two age groups in decision-making styles to be noticed. Younger students, in fact, have less functional decision-making styles than the 17-18 years students: they tend to postpone or let other take decisions, they are hypervigilant and, particularly in a school context, negligent in making decisions. These results let us suppose that, with the processing of the development, boys improve their decisional abilities, developing at the same time higher security.
Finally, H.M.C. shows that boys, both in a school context and social context, choose more dysfunctional decision-making styles than girls, who, instead use more the adaptive style (*Vigilance*). A particularly interesting datum is related to the fact that girls show more worry making their own choices (probably because they are more reflective than contemporary males) and a lower confidence about their own capacity to make decisions (maybe they are more careful and less "superficial"?). Also this last aspect deserves further study in that it seems to be in accordance with what has been reported in literature (e.g., Bress, Foti, Kotov, Klein, & Hajcak, 2013; Treutiger & Lindberg, 2013) and that girls compared to boys are more vulnerable to stressful situations and are more disposed to developing states of depression.

Limitations and Directions for Future Research

Some limitations of the study must be discussed.
The relation identified in the study is correlational and not causal. This study represents only a first step in understanding the relations among decision-making processes and self-esteem in an adolescent sample.
All data were collected using self-report questionnaires that are influenced by social desirability. Studies using behavioural measures, observational data and other-report methodologies could be very useful to assess decision-making behaviours from another point of view.
The present study focused on decision-making styles in a sample of secondary school students. A longitudinal study would provide perspective and generate data on changes in decision-making patterns and cognitions across the years.
The lack of cross cultural variety in this sample also limits the generalizations we can make as regards to the findings. Replication of the research on groups with different demographic characteristics might be another possibility for further research.
The individual, in order to best adapt himself to his living environment, needs good skills to face difficult situations that arise daily. Decisions and choices are certainly a challenge for everyone, especially for adolescents who, in the delicate phase of development, have to make important decisions in the school environment and in their social relationships. Because of the complexity of this evolutionary task, often, they could make wrong choices that have negative consequences for their own future (in social relationships, academic career, etc.). Therefore interventions made in the school context are necessary to help students to develop appropriate decision-making skills, strengthening their emotional and motivational abilities. A structured experimental training, directed to the empowerment of a functional decision-making style, could increase assertive behaviors and self-esteem levels. The development of self-esteem and the ability of making decisions (strictly related constructs) could be instrumental in the prevention and the decrease of Learned Helplessness (Seligman & Maier, 1967; Abramson et al., 1978), especially in students with low academic performances.

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