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ABSTRACT

This study examined the hypothesis that academic achievement affects different components of self-concept. Also investigated was the possible influence of nationality in modifying the relationship between academic achievement and self-concept, by comparing Slovenian and French subjects. The findings of two-factor (academic achievement x nationality) analyses of variance and discriminant analyses showed significant correlations between academic achievement and various indices of self-concept, which varied in a nationality-dependent fashion. The French subjects exceeded Slovenians in some domains of self-concept (i.e., verbal, academic, relations with same sex peers, relations with parents, religion and spirituality, and general self-concept) while Slovenian subjects exceeded French subjects in the domain of problem solving and creativity. There was no significant difference between the two national samples in self-esteem. Also, the French subjects exceeded Slovenian pupils in general academic achievement. The results were interpreted on the grounds of theoretical expectations related to the formation of self-concept and academic achievement, as well as on the basis of national differences in the school system and personality structure. The study concluded that national differences in self-concept domains are also related with auto- and hetero-stereotypes about French, British, and Slovenian people. (Author)

SELF-CONCEPT AND ACADEMIC ACHIEVEMENT OF CENTRAL AND WESTERN EUROPEAN GROUPS OF ADOLESCENTS

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Abstract

According to the accumulated research evidence, self-concept is reciprocally connected with academic achievement: it is influenced by different aspects of school life including academic success, and vice versa, self-concept itself may substantially contribute to academic aspirations and accomplishments. During the teen and adolescent years, the interdependence between academic successfulness and self-concept becomes increasingly important due to the fact that both academic achievement and the formation of the self-concept play growing roles in this period of individual's life. Interestingly, a number of experimental studies suggested that the relationship between academic success and self-concept can significantly differ, depending upon the nationality of the subject groups.

In the present study, we tested the hypothesis that academic achievement affects different components of self-concept. Further, we investigated the possible influence of nationality in modifying the relationship between academic achievement and self-concept, by comparing Slovenian and French subjects. The results of two-factor (academic achievement x nationality) analyses of variance and discriminant analyses showed significant correlations between academic achievement and various indices of self-concept, which varied in a nationality-dependent fashion. The French subjects exceeded Slovenians in some domains of self-concept (i.e. verbal, academic, relations with same sex peers, relations with parents, religion and spirituality, and general self-concept), while Slovenian subjects exceeded French subjects in the domain of problem solving and creativity. There was no significant difference between both national samples in self-esteem. Also, the French subjects exceeded Slovenian pupils in general academic achievement. The results were interpreted on the grounds of theoretical expectations related to the formation of self-concept and academic achievement, as well as on the basis of national differences in the school system and personality structure. We conclude that national differences in self-concept domains are also related with auto- and hetero-stereotypes about French, British and Slovenian people.

SELF-CONCEPT AND ACADEMIC ACHIEVEMENT OF CENTRAL AND WESTERN EUROPEAN GROUPS OF ADOLESCENTS

INTRODUCTION

Over the last twenty years, teachers and researchers have become increasingly interested in the role of adolescents' self-concept in their success in institutional education. Numerous psychological studies have shown that the formation of a stable and a positive self-concept is one of the major developmental challenges of adolescence (Keltikangas-Järvinen, 1990; Watkins, McCreary Juhasz, Walker & Janvlaitiene, 1995). Undoubtedly, the school, as a very fundamental agent of socialisation, has an important influence on the development of self-concept in the age of adolescence.

The formation of self-concept in the context of institutional education is a rather complex process, evoking several questions which are interesting for psychological research. In accordance with many observations and a considerable amount of experimental evidence, academic achievement appears to be a prominent determining variable in the formation of self-concept during adolescence. Therefore, we concentrated on evaluating the reciprocal influences that self-concept and academic achievement have upon each other, as understanding the details of this relationship might provide important insights into adolescent individual and social development.

Self-concept

Self-concept as a theoretical term has both numerous synonyms and definitions. In the literature, it is also identified sometimes as self-schema (Cross & Markus, 1994; Markus, 1977; Markus & Wurf, 1987), self-representation (Cross & Markus, 1994), self-image (Offer, Ostrov, Howard, Atkinson, 1988), self-perception (Evans & Poole, 1991), self-esteem (Rosenberg, 1965), and self-evaluation, for example. In practice, these terms have been inconsistently used, sometimes distinctively in scope or extension and sometimes synonymously. It is difficult to distinguish between these different psychological self-generalisations which underlie our

comprehensive conception of ourselves. For example, we can not say that what we generally feel at a particular moment is our self-image, but what we feel at another moment is our self-evaluation. To avoid confusion, we will use the term self-concept in its general and prevailingly cognitive notion, using some other terms in a more narrow sense when referring to the cognitive and/or emotional aspects of self-concept (e.g. self-schema, self-representation, self-image, self-evaluation, self-esteem).

Broadly defined, self-concept consists of our perceptions of ourselves (Shavelson & Bolus, 1982). According to Burns (1979), self-concept is a psychological entity which includes our feelings, evaluations, and attitudes, as well as descriptive categories of ourselves. It is manifested outwardly by our behavioral and personality traits and inwardly by how we feel about ourselves and the world around us (Maccoby, 1980). As a psychological whole, it has an effect on one's particular self-perceptions and on the perceptions of other people. It also regulates social cognition, academic achievement, attitudes to school, etc. (Keltikangas-Järvinen, 1990).

It could be further concluded that self-concept is a cognitive generalisation about the self (Cross & Markus, 1994), which mostly includes self-descriptions of neutral values. Alternatively, the evaluative and emotional generalisations about the self could be defined as self-esteem (Lamovec, 1994). According to Rosenberg, self-esteem is a positive or negative attitude of an individual towards himself. It is "...closely connected to feeling of life satisfaction..." (Rosenberg, 1985, pp. 212).

Self-concept researchers have long been interested in whether the structure of self-concept is mono- or multidimensional. To date, many theoretical models of self-concept have been proposed. Shavelson and Bolus (1982) postulated a model which has "undergone the most rigorous examination in both cross-sectional and longitudinal designs," (Byrne & Shavelson, 1982, pp. 474). Their basic hypothesis was that the structure of self-concept is multidimensional and hierarchical. General self-concept is at the highest and broadest level of the hierarchy. On the next level beneath, it splits into conceptions about self in academic and nonacademic areas. These areas are further divided into corresponding subdomains; for example, English, History, peers, significant others, and self-concepts. Finally, at the most basic level, the model contains specific evaluations of behaviour in defined situations.

In 1984, the Self-Description Questionnaire was constructed based on Shavelson's model, as a psychodiagnostic device designed to evaluate different areas of self-concept (Marsh & O'Neill, 1984). This instrument, specially designed for assessing adolescents, contains the following self-concept areas: (1) mathematics, (2) verbal, (3) academic, (4) problem solving/creativity, (5) physical abilities/sports, (6) physical appearance, (7) relations with same sex peers, (8) relations with opposite sex peers, (9) relations with parents, (10) religion, (11) honesty/reliability, (12) emotional stability /security, and (13) general self-concept.

According to the results of many cross-cultural studies of self-concept in adolescence (Robinson, Tayler & Piolat 1990), the structure of students' self-concept may vary both intraculturally (from low- to high- academic achievers within one national educational system) and interculturally (from low- to high- academic achievers amongst different countries).

Academic achievement

Two broad groups of definitions are routinely employed in assessing academic achievement. The first group could be considered more objective, because it refers to numerical scores of a pupil's knowledge, which measure the degree of a pupil's adaptation to school work and to the educational system (Gbati, 1988). The second group is a more subjective or psychological one, as it's determination of academic success is reliant upon the student's attitudes towards his academic achievement and himself, as well as by the attitudes of his significant others (i.e. parents, teachers, etc.) towards his success and himself (Khadivi-Zand 1982). Thus, using this system of characterization, academic achievement is defined as self-perception and self-evaluation of one's objective academic success.

Academic achievement and self-concept

Somewhat surprisingly, prior efforts to establish correlations between academic achievement and self-concept are few, although the results of several relevant studies suggest that, in adolescents, self-concept might be closely tied to academic achievement (Marsh, 1990). Nevertheless, there exists, to date, no clear and convincing scientific evidence of causative relations between self-concept and academic achievement. It seemed plausible to us to hypothesize that the relationship between both of these variables could be of a mutual nature; i.e.

that academic achievement could influence the development of self-concept (especially self-esteem and self-evaluation) and, conversely, that differences in self-concept could stimulate or destimulate the achievement efforts.

A number of investigations indicated a lower correlation between academic achievement and self-esteem (or general self-concept) and also between academic achievement and domain-specific self-concept (Marsh, 1990, 1994; Watkins & Gutierrez, 1990). House (1993) examined the relationship among five areas of academic self-concept and academic achievement of students at the start of a study at a U.S. university, and followed their enrolment status at the university for four years. The results showed that "the students' self-concept of their overall academic ability was the single most significant predictor of subsequent school withdrawal", (House, 1993, 127).

Marsh and O'Neill (1984) found that achievement in mathematics of Australian students was most highly correlated with math self-concept (0.58; $p<0.01$), less highly correlated with academic self-concept (0.27; $p<0.01$), and was unrelated to verbal and nonacademic self-concept. School certificate scores in English were correlated with verbal self-concept (0.42; $p<0.01$), academic self-concept (0.24; $p<0.01$), math self-concept (0.19;$p<0.01$) and with problem solving self-concept (0.17; $p<0.01$). They were non correlated with other self-concept scales of Self Description Questionnaire SDQ III.

Results of studies investigating nationality-bias in the relationship between academic success and various measures of self-concept found no significant differences between English and Latvian groups of students, with respect to measures of academic achievement and self-concept (Robinson and Breslav, unpublished data). These researchers speculated that the 13 or 14 year old Latvian participants did not appear to have been chronically affected by the years of Soviet domination. In a study of low- academic achievers in three countries, Robinson and Tayler (1989) found that Japanese pupils showed the culturally expected signs of modesty on self-concept areas, especially on self-esteem (Markus & Kitayama, 1991).

We can speculate that the unconvincing correlation between academic achievement and general self-concept may be due to the differential and possibly counteracting relationships between academic achievement and the different components of self-concept. For instance, it seems imaginable that a positive correlation between academic achievement and academic self-

concept could be counterbalanced by a negative correlation between academic achievement and sexual self-concept, leading thus to a zero net effect on general self-concept. On the other hand, the differences between different cultures with respective academic tradition and organisation remained remarkable. Thus, despite the fact that the relationship between self-concept and academic achievement has been the subject of a number of psychological studies, a further systematic research on this topic is still needed. We designed therefore a cross-cultural study in order to clarify some unresolved questions concerning the relationship between academic achievement and self-concept. The main purpose of the present study was to examine, on the multicultural level, the connection between academic achievement and self concept in its general and specific domains. Specifically, we hypothesized (1) that differences in the levels of academic achievement in adolescents would be reflected in both general and domain specific components of self-concept, and (2) that nationality would also influence the various components of self-concept.

METHODS

Research Design

The entire investigation comprised a combination of a classical experimental (factorial) design and appropriate multivariate approaches. First, a multivariate analysis of variance model (two-factor /2x3/ MANOVA) was performed, to explore differences in variables of self-concept and self-esteem (including 13 SDQ-III subscales and Rosenberg Self-esteem Scale) as a function of nationality and academic achievement. Nationality (Slovenian or French) and academic achievement (low-, medium-, high-) were treated as independent (main) factors, the variables of self-concept and self-esteem being dependent.

Complementary to the analyses of variance, three discriminant analyses were also programmed in order to discover more precisely the role of particular self-concept domains in discriminating between nationalities and academic success. In the first analysis, nationality was computed as a group factor (Slovenian and French group), in the second analysis, the academic achievement was the group factor (low-, medium- and high-achievement group), while in the final analysis a group factor was defined as a composite of nationality by academic achievement

(i.e. 6 groups: low-, medium-, or high-achievement Slovenian or French students). In all cases of discriminant analyses, the self-concept variables (representing domains of self-concept and self-esteem) were included as independents.

Subjects

A total of 230 high school students (120 women, 110 men) from Slovenia and France participated in the study. They were selected on the grounds of comparable educational programmes and similar age (16-17 yrs). The Slovenian sample (169 participants) was drawn from three high schools (gymnasiums) The sample of 61 French participants was drawn from members of one high school (college) in Strasbourg.

Measuring instruments and variables

Self-concept. Two psychological instruments were applied to measure general self-concept and specific domains of self-concept. The first instrument was the Self-Description-Questionnaire III (SDQ III), based upon the Shavelson model of self-concept (Shavelson & Bolus, 1982), and constructed by Marsh and O'Neill (1984). SDQ III is specially designed for adolescents aged 15 and over (Marsh, 1989), and consists of the 13 self-concept areas described above (Marsh & O'Neill, 1984). In addition, the questionnaire includes several academic components of self-concept (mathematical, verbal, and general academic self-concept). Therefore, it is particularly appropriate for investigations in the context of academic achievement.

The second instrument we employed was the Rosenberg Self-esteem Scale (Burns, 1979), which is a widely used evaluative tool that is designed to assess participants' global self-esteem. The special reason for the application of this scale was its frequent use in other multicultural studies (Robinson *et al.* 1990), which increases the comparative value of the results from the present study.

Academic achievement. Academic achievement was computed by the sum of general academic achievement, and achievement in mathematics and in the subjects' native language (i.e. Slovenian or French), for the previous and current school year. It was measured by average school marks (1-unsufficient, 2-sufficient, 3-good, 4-very good, 5-excellent). For evaluation by

analyses of variance and by discriminant analyses, the marks were grouped in three categories: low-achievement (1, 2), medium-achievement (3) and high-achievement (4, 5).

The question might be raised, with regard to the usefulness of the school marks as measures of academic achievement, as more objective achievement tests could be used instead. Although the external application of standardized achievement tests would substantially raise the objectiveness and, therefore the comparability, of data, such achievement tests are only measures of scholastic knowledge, and are not adequate measures of academic success in the full sense, as we desired. The primary aim of our study was to examine the relationship between overall academic achievement and self-concept on the multinational level, and not the investigation of potential national differences in academic knowledge. In the realm of the school scenario, school marks remain the predominant determinants of the subjective interpretation of academic achievement and academic success. Thus, for our purposes, school marks are the more relevant and appropriate indicators of academic success as related to self-concept.

Additional data. General information (e.g. age, gender, socio-economic variables, and academic achievements) was collected by a supplemental questionnaire. All questionnaires were translated and administered in the appropriate language (i.e. Slovenian or French).

Procedure and statistical treatment of data

The gathering of data took place in three high schools in Ljubljana and in one high school in Strasbourg. The participants obtained and completed a packet of questionnaires (general questionnaire, SDQ III, and Rosenberg Self-esteem Scale). The results were then analysed with the statistical programme SPSS (Hull & Nie, 1984).

RESULTS AND DISCUSSION

Multivariate Analysis of Variance (MANOVA)

Two-factor MANOVA, exploring differences in self-concept domains as a function of nationality and academic achievement, yielded many significant results. All multivariate effects were significant, namely for both main effects, nationality (multivariate $F = 6.44$, $p < .001$), and academic achievement ($F = 3.09$, $p < .001$), and for interaction affect also ($F = 1.6$, $p = .029$). The

univariate effects of nationality, academic achievement, and interaction on different self-concept domains are shown in Table 1.

INSERT TABLE 1

For the nationality, significant effects were found for 7 subscales of SDQ III. Table 2 shows the respective mean values of self-concept domains and self-esteem for different academic achievement groups from both samples (Slovene and French). French students obtained higher values in the following self-concept domains: verbal (SDQ2), academic (SDQ3), relations with same sex peers (SDQ7), relations with parents (SDQ9), religion (SDQ10), and general self-concept (SDQ13). Slovenian students had higher self-concept in the area of problem solving and creativity (SDQ4). There were no statistically significant differences in self-esteem between Slovenian and French groups.

Academic achievement is significantly related to mathematical (SDQ1), academic (SDQ3) and creativity (SDQ4) domain of self-concept. These results are concordant with prior observations that academic success correlates primarily with the academic or scholastic components of self-concept (Marsh, 1990, 1994; Marsh & O'Neill, 1984). These data also suggest that academic success contributes very little to the other self-concept domains, and vice-versa. The incompatibility between some major components of self-concept (e.g. the sexual component) and academic achievement is well-known (Marsh & O'Neill, 1984; Offer *et al.*, 1988). In the present study, the heterosexual component of self-concept (SDQ8) similarly showed an insignificant correlation with general academic success ($r = -.109$), and even a significant negative correlation with success in mathematics ($r = -.159$).

The interaction between nationality and academic success proved to be significant in the case of the creativity domain of self-concept (SDQ4). As evident in Table 2, the creativity scores increased with the academic success in the French sample, while they remained the same or even slightly decreased in the Slovenian group. It seems possible that French teachers more properly rewarded the creative students than Slovenian teachers. It is interesting that, regarding the creativity component, the low-achievement groups in both nations score equal to, or even greater than medium-achievement groups, and, in the case of the Slovenian sample, they are on the same

or even higher level than even the high-achievement group (see Table 2). It could be that creative subjects invest more interest and energy in non-scholastic activities, while their able but less creative peers concentrate more upon school work, thus outperforming them on the academic field. This being so, the question arises as to how appropriate are the methods of student recruitment in the schools and in the universities which favour almost exclusively previous academic success? It is quite possible that a substantial number of creative candidates would be excluded by these selective criteria.

INSERT TABLE 2

Discriminant Analyses

Discriminant analyses were computed in addition to the MANOVA in order to estimate the relative contribution of self-concept domains to the discrimination between two national groups (Slovene and French; see Table 3), to the discrimination between three groups of academic achievement (low-, medium- and high-achievement; see Table 4), as well as to the discrimination between six groups with combined values of nationality and academic achievement (low-, medium-, and high-achievement Slovenian, low-, medium- and high-achievement French, see Table 5).

The correlations between self-concept domains as discriminating variables and as a canonical discriminant function amongst French and Slovenians are shown in Table 3. The discriminant function that was extracted was highly significant ($p < .001$). The values of group centroids were 0.664 for the Slovene group, and 1.567 for the French. Positive correlations with discriminant function thus indicate higher scores of French subjects. These results are very concordant with the results of MANOVA. In general, the largest contributions to the differentiation between groups were produced by the same components of the self-concept which also showed the most significant differences between the national groups in MANOVA, i.e. the verbal (SDQ2), religious (SDQ10), academic (SDQ3), same sex peer relations (SDQ7), general (SDQ13), and relations with parents (SDQ9) component. In all of these cases, the French subjects demonstrated higher values. Slovene subjects, however, score higher on the creativity component (SDQ4) than do their French counterparts.

INSERT TABLE 3

The correlations between self-concept variables and two canonical discriminant functions for three groups differing in the academic achievement (low-, medium-, and high-achievement group) are presented in Table 4. Both discriminant functions were significant. The values of group centroids for the first discriminant factor were -0.893 for the low-achievement group, -0.124 for medium-achievement group, and 0.931 for high-achievement group. The respective values of group centroids for the second discriminant function were 0.371 for the low-achievement group, -0.561 for medium-achievement group, and 0.243 for high-achievement group. The first discriminant function differentiated almost linearly between the lowest and the highest academic achievement group, with the medium- group being in between, while the second function discriminates between the medium-achievers on the one side and both low- and high-achievers on the other side.

INSERT TABLE 4

The data obtained from discriminant analysis of academic achievement again confirm some previously presented results of MANOVA. The first discriminant function which contributed almost linearly to the difference between the low- and high-achievement groups correlates with general academic (SDQ3) and mathematical self-concept (SDQ1). Remarkable is the negative correlation with the opposite sex peer relations component of self-concept (for the difference between respective groups see Table 2). The heterosexual component of self-concept is also in negative relationship with academic achievement. This result is in accordance with the expectation that more expressed sexual interests and motives could interfere with the success in the school.

The second discriminant function delineating medium-achievers from both low- and high-achievement groups is also interesting. For example, our analysis shows that medium-achievers exceed both other groups in the religious (SDQ10) and physical concept (SDQ5) domains of self-concept. On the other hand, they tend to be lower in the creativity domain of the

self-concept (SDQ4), in emotional stability (SDQ12), and in the mathematical component (SDQ1).

The next discriminant analysis was performed on the 6 groups defined by nationality and academic success. Table 5 shows the correlation between self-concept variables and three significant discriminant functions.

INSERT TABLE 5

According to the values of group centroids for all three discriminant functions (Table 6) it could be suggested that the first function differentiates between two nationalities irrespective of academic success. The high- and medium-achievement French group remarkably exceeded all other groups. The first discriminant function correlated for the most part with verbal (SDQ2), religious (SDQ10), and general (SDQ13) self-concept components. This is in good accordance with the results showing the dominance of French subjects in those aspects of self-concept (see Table 2). The second discriminant function varies with not only academic achievement, but also with nationality (the values of group centroids being the largest in F3 and smallest in S1, but all French groups have higher values than their respective Slovenian group). This second function correlates most positively with general academic (SDQ3) and mathematical academic (SDQ1) self-concept components and most negatively with the creativity (SDQ4) and emotional stability (SDQ12) component. These results could be explained by the data presented in Table 2: discriminant loadings probably reflect high values obtained by French high-achievement group on general and mathematical academic self-concept domains, and the high values of the Slovenian low-achievement group on the creativity and emotional stability components. Finally, the third discriminant function delineates mainly between academic achievement (both high-achievement groups having the greatest positive values of centroids). The highest correlations with the third function is the mathematical (SDQ1) component of self-concept (both high-achievement groups have the highest means on this component, see Table 2). Nevertheless, nationality plays a certain role within the third discriminant function, too, as is demonstrated by the relatively high position of the group centroid for the low-achievement Slovene group. Thus, the substantial correlation of the third discriminant function with the creativity component of

self-concept could be explained on the grounds of the high results of Slovene low-achievers on the SDQ4.

INSERT TABLE 8

General discussion and conclusions

Before proceeding, some general limitations and precautions regarding our results should be mentioned. The results were drawn from rather narrow national samplings, consisting of subjects from three secondary schools in Ljubljana, Slovenia, and from one secondary school in Strasbourg, France. Thus, the representativeness of the French sample is somewhat questionable. In this respect, a replication of the study on larger, intranationally more balanced samples would be recommended.

We have also been strongly aware of another limitation, dealing with some well-known problems inherent to cross-cultural research. The general assumption of metric equivalence of applied instruments is rather dubious when applied to multicultural or multinational studies (Watkins *et al.* 1995). There exists uncertainty as to whether the same evaluative instruments (e.g. questionnaires) have equivalent meaning to subjects of different cultural background. Nevertheless, we must assume that cultural distance do not inordinately skew attempts at such comparisons, especially in the case when different national samples share the same basic culture (both French and Slovene subjects belong to the common European or Western cultural tradition). If it would not be so, every intercultural or international comparison of this nature would be senseless or even impossible.

In general, the results of both Slovenian and French participants on self-concept and self-esteem scales fall within the range of typical average values, world-wide (Lamovec, 1994). However, we were able to discern several significant discrepancies between adolescent students of these two nations:

1. The French subjects exceeded Slovenians in some domains of self-concept (verbal, academic, relations with same sex peers, relations with parents, religion and spirituality, and general self-concept), while Slovenian subjects exceeded French subjects in the domain of

problem solving and creativity.

2. There was no significant difference between both national samples in self-esteem.

3. The French subjects exceeded Slovenian pupils in academic achievement in general. They have significantly better school marks in average (mean 3.66 for French and 3.05 for Slovenian sample, $p < 0.001$).

The results obtained in our study could be interpreted partially in the light of cultural and cross-national differences. French and other Latin nations are characterized by more extroverted traits, including a higher degree of verbal expressiveness in comparison to Central, Western and North European nations, which tend to be more reserved and introverted (Musek, 1994). Moreover, the stimulation of verbal competence is very pronounced in the educational tradition of France. All this may substantially contribute to the higher results of French sample in the verbal component of self-concept, and maybe to some other differences observed in self-concept analysis. For example, a higher degree of peer-orientation in social relationships could also be expected from a more extroverted culture and be cause henceforth the corresponding difference in the same-sex-peer-relations domain of self concept. The perfection and creativity have been traditionally admired in Slovenian culture; there is sufficient empirical evidence for a strong involvement of these traits in the Slovenian psychological autostereotype, and for the existence of a high degree of achievement motivation in the Slovenian population (Musek, 1994). Higher scores in the problem-solving and creativity domain of self-concept in Slovenian subjects are thus not surprising.

In our study, French subjects turned out to be more successful in school than Slovenian. Of course, this information is somewhat ambiguous, as it could be an artefact of the different assessment standards applied by teachers in the schools of both countries. In agreement with prior studies which sought to clarify the correlation between academic achievement and academic self-concept (House, 1993; Marsh, 1987), our findings support the possibility that higher academic achievement of French students is mostly related to their higher academic self concept. It is interesting that Watkins and Gutierrez (1990) found higher academic self-concept among groups of Chinese, Nepalese, Nigerian and Filipino female students and lower self-concept among Lithuanian students. We may speculate similarly with these authors, that changes in the educational systems in societies undergoing a transition from socialism to democracy can

affect the academic self-concept of their students. However, our results don't support the results of Watkins *et al.* (1995), who found also lower self-esteem among Lithuanian students. It is interesting, indeed, that in our study French subjects exceeded the Slovenians in both academic and general self-concept, but not in overall self-esteem. It is even more surprising, if we consider that the actual correlations between self-esteem and both other measures of self-concept are significant. The correlation between self-esteem and academic self-concept is 0.22 ($p < .001$), and the correlation between self-esteem and general self-concept are quite high (0.72, $p < .0001$). Two possible explanations could be found for this interesting result: the first possibility is that the results of Rosenberg Self-esteem Scale are simply insufficiently reliable, and the obtained insignificant difference between both national samples is only casual (in academic as well as in general self-concept both samples differ significantly). The second possible explanation is that greater satisfaction with themselves (higher self-concept) moves French students to the greater self-esteem, but that self-esteem of Slovene subjects remained unaffected by lower academic self-concept and by lower actual academic achievement. Further, we can compare our results with the results found in the study *School attainment, self-esteem, and identity* by Robinson *et al.* (1990). In spite of the slight difference in instruments and in the age of the French and English subjects participating in their study, they found similar results as we did. French subjects were more successful than their British counterparts.

In Robinson's *et al.* (1990) study as well as in ours, French students are in some way more satisfied with themselves: the French participants in Robinson's research have higher self-esteem whereas the French participants in our research have higher general self-concept. In the study by Robinson *et al.* (1990), French low-achievers showed a higher self-esteem than did English low-achievers. As already mentioned, we didn't find any differences in self-esteem among high- and low-achieving French and Slovenian groups of students.

According to Robinson *et al.* (1990), the French educational system deals quite democratically with the problems of academic achievement, self-esteem and creativity. They suggest "that French pupils in their study offered a portrait of more satisfied conformity to cultural norms both in and out of school, and it is particularly noteworthy that their low-achievers remain more strongly integrated within the educational system," (Robinson *et al.*,1990, pp. 401). If the data reported in this contribution are representative, it seems that the French educational

system enables "... pupils' faith in their status as agents responsible for their actions..." (Robinson *et al.*, 1990, pp. 402) , it enables "... their regard for themselves as problem-solvers, and it also enables each pupil to achieve his or her potential" (Robinson *et al.*, 1990, pp. 402). Consequently, "... organization of the French educational system seems to be friendlier to the their pupils, they are more satisfied with themselves, they have higher aspirations and higher academic achievement than their English peers." (Robinson *et al.*, 1990, pp. 401).

Similar conclusions could be made in regard of differences between French and Slovene subjects obtained in our study. It could be supposed that the Slovenian educational system is still based on premises which were characterized by less democratic (although maybe more egalitarian) conceptions, and a school subject-centered instead of more person-centered approach (Piciga, 1993). These premises could be also related with rather surprising data concerning the relationship between the academic achievement and problem solving/creativity self-concept in Slovene sample. There is almost no difference in problem solving and creativity domain between low-, medium- and high-achievers in Slovene group (in fact, low-achievers obtained the highest values). In the French group, the high-achievers grossly overscored the others in respect of creativity domain of self-concept. It could be suggested that Slovenian students have problems how to invest their creativity for better academic achievement, or they even have to renounce their critical thinking and creativity for the sake of academic promotion.

In this regard, our results may stimulate particular efforts in the advancing the educational systems in some countries. If the strategic aim of the improvement of educational system is to become more democratic and creativity-stimulating on the one side, but efficient in knowledge gaining in the same time, the psychological factors in education must be taken into consideration very seriously. The optimal models of education should respect the general, and perhaps even universal, conditions for academic effectiveness, but should also consider specific factors including cultural and national characteristics.

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Table 1. *Univariate effects of nationality and academic achievement, and their interaction on different self-concept domains*

Self-concept domains	**Nationality**		**Academic achievement**		**Interaction: nationality x academic achievement**	
	F	p	F	p	F	p
SDQ1 (mathematical)	2.21997	.138	24.33395	.000 ***	2.50675	.084
SDQ2 (verbal)	17.59138	.000***	.88187	.416	2.25800	.107
SDQ3 (academic)	13.65658	.000***	6.62682	.002 **	1.34235	.264
SDQ4 (creativity)	4.22091	.041*	3.19174	.043 *	3.53623	.031*
SDQ5 (physical abilities)	2.96735	.087	1.27404	.282	.47546	.622
SDQ6 (physical appearance)	1.55195	.214	.35072	.705	.34987	.705
SDQ7 (same sex peer relations)	6.66337	.011*	.14585	.864	.40679	.666
SDQ8 (opposite sex peer relations)	2.48782	.116	1.55789	.213	.45483	.635
SDQ9 (relations with parents)	9.50349	.002**	.83663	.435	1.53161	.219
SDQ10 (religion)	15.08923	.000***	2.15407	.119	.21264	.809
SDQ11 (honesty/reliability)	3.08458	.081	.58139	.560	.12818	.880
SDQ12 (emotional stability)	1.09167	.297	1.45250	.236	2.81432	.062
SDQ13 (general)	4.23618	.041*	1.20174	.303	1.37265	.256
Self-esteem	.25816	.612	.25228	.777	.22073	.802

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 2. *Arithmetic means of self-concept domains for respective academic achievement groups in Slovene and French samples*

Self-concept domains	Slovene Academic achievement			French Academic achievement		
	Low	**Medium**	**High**	**Low**	**Medium**	**High**
SDQ1 (mathematical)	30.70	32.80	38.50	22.00	30.29	41.41
SDQ2 (verbal)	38.11	37.33	36.96	42.50	42.96	46.38
SDQ3 (academic)	33.68	37.41	41.23	43.25	40.64	44.97
SDQ4 (creativity)	42.55	41.48	41.39	37.00	36.61	42.38
SDQ5 (physical abilities)	43.50	45.67	41.70	47.50	46.54	45.97
SDQ6 (physical appearance)	38.19	37.80	37.82	36.50	39.14	41.41
SDQ7 (same sex peer relations)	42.22	42.02	41.67	45.00	48.14	47.41
SDQ8 (opposite sex peer relations)	42.51	41.51	37.73	43.75	43.36	42.52
SDQ9 (relations with parents)	40.02	41.71	42.20	50.50	44.61	44.97
SDQ10 (religion)	18.13	25.57	21.00	23.50	36.68	36.97
SDQ11 (honesty/reliability)	48.91	49.92	51.86	53.50	53.21	53.76
SDQ12 (emotional stability)	39.71	35.59	38.28	29.75	37.89	39.52
SDQ13 (general)	49.11	48.47	48.98	46.00	54.68	55.00
Self-esteem	28.71	27.88	28.83	25.75	27.46	28.14

Table 3. *Correlations between discriminating variables and the canonical discriminant function for two national groups (French and Slovenian). Positive correlations indicate higher results of French subjects*

Variables	**Discriminant function**
SDQ2 (verbal)	.44645
SDQ10 (religion)	.37681
SDQ3 (academic)	.35396
SDQ7 (same sex peer relations)	.30299
SDQ13 (general)	.26343
SDQ9 (relations with parents)	.21681
SDQ4 (creativity)	-.19792
SDQ11 (honesty/reliability)	.19791
SDQ6 (physical appearance)	.11708
SDQ8 (opposite sex peer relations)	.10337
SDQ5 (physical abilities)	.09356
Self-esteem	-.05240
SDQ1 (mathematical)	.04236
SDQ12 (emotional stability)	.01385

Table 4. *Correlations between discriminating variables and two significant canonical discriminant functions for the three academic achievement groups. Positive correlations with first discriminant function indicate greater results of the high-achievement group, and negative correlations indicate greater results of the low-achievement group. Positive correlations with second discriminant function indicate greater results for both low- and high-achievement groups, while negative correlations indicate greater results in the medium-achievement group*

Variables	**Discriminant function**	
	Function 1	**Function 2**
SDQ3 (academic)	.63782*	-.13638
SDQ1 (mathematical)	.63599*	.29676
SDQ11 (honesty/reliability)	.23619*	-.09242
SDQ9 (relations with parents)	.18221*	-.02445
SDQ8 (opposite sex peer relations)	-.17408*	-.14225
SDQ13 (general)	.13568*	-.10610
SDQ2 (verbal)	.13538*	.03121
SDQ6 (physical appearance)	.08697*	-.02845
SDQ10 (religion)	.22704	-.49150*
SDQ4 (creativity)	-.04760	.47032*
SDQ12 (emotional stability)	-.00154	.29037*
SDQ5 (physical abilities)	-.06093	-.26984*
Self-esteem	.00963	.14153*
SDQ7 (same sex peer relations)	.09204	-.12581*

Table 5. *Correlations between discriminating variables and three significant canonical discriminant functions for six groups defined by combination of nationality and academic achievement*

Variables	Discriminant function		
	Function 1	**Function 2**	**Function 3**
SDQ2 (verbal)	.55992*	-.00786	.03749
SDQ13 (general)	.35704*	.00249	.05087
SDQ10 (religion)	.32501*	.18034	-.12813
SDQ7 (same sex peer relations)	.32239*	.02954	-.08379
SDQ8 (opposite sex peer relations)	.22111*	-.19668	-.13816
SDQ6 (physical appearance)	.17659*	.00526	.08304
SDQ3 (academic)	-.00368	.68609*	.06631
SDQ9 (relations with parents)	.00767	.26614*	-.13434
SDQ11 (honesty/reliability)	.05106	.25035*	-.03414
SDQ1 (mathematical)	.01610	.41674	.66139*
SDQ4 (creativity)	.04299	-.20882	.43286*
SDQ12 (emotional stability)	.23785	-.17967	.25221*
SDQ5 (physical abilities)	.09675	-.03679	-.1 5200*
Self-esteem	.01582	-.04668	.12804*

Table 6. *Group centroids for three discriminant functions*

Group	Function 1	Function 2	Function 3
S1 (low-achievement Slovene subjects)	-.41163	-1.10251	.16803
S2 (medium-achievement Slovene subjects)	-.51775	-.22208	-.17312
S3 (high-achievement Slovene subjects)	-.68373	.48539	.62544
F1 (low-achievement French subjects)	-.55152	.78944	-2.24341
F2 (medium-achievement French subjects)	1.25980	.60239	-1.14031
F3 (high-achievement French subjects)	1.44937	1.20323	.44700

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