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The influence of academic achievement in pupils' academic self-concept construction during the transition to lower secondary education

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The purpose of this study was to assess pupils' academic self-concept before and after the transition to lower secondary education (LSE) and showing changes in this indicator during this period. To assess pupils' academic self-concept in Albanian language and Math were combined data from three different sources: children's self-beliefs about their capabilities, the grades received in the two main subjects during the two study periods, and the third source was pupils competency assessment by teachers of the respective subjects. As a survey instrument it was used that of Gniewosz et al. (2011). The study aims to answer these research questions: How does pupils' academic self-concept change when they pass to LSE? Do achievements in Albanian language and Math influence pupils' self-concept? What role do teachers' perceptions play in the construction of pupils' self-concept abilities? Questionnaires of pupils and teachers were filled through self-reporting. Measurements were conducted twice: at the end of fifth grade and at the end of first semester of the sixth grade. Results of the study will be referred to the theoretical framework of reference and differential of information 'sources for student self-concept construction. Tests showed that there was high correlation between verbal and mathematical achievement. Correlations between language grades and Language self-concept were strong and positive, while in Math this relation was low. The relations between grades and self-concept in Language before and after the transition, were more influenced by teachers' perceptions, while in Math this effect was not significant. Pupils' self-concept in Math were not affected neither by grades nor by teachers' perceptions, suggesting that learners may have used other sources of information for their self-concept construction. Sixth grade teachers showed less confidence in the abilities of pupils than teachers of fifth grade.

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Introduction

The study objective was to assess pupils' academic self-concept in the transition from primary to lower secondary education (LSE). The main purpose was to study the changes of academic self-concept in two main subjects: in Albanian language and Math. The choice of these two main subjects was done because these are subjects where children show their verbal and mathematical skills, which are the bases of skills for other school subjects.

For the measurement and construction of students' academic self-concept, researchers estimate as valuable sources: the grades in respective subjects, internal and external comparisons that students do by himself, and appraising opinion of other persons such as teachers, parents and peers (Gniewosz, Eccles, & Noack, 2011). In this study, to measure academic self-concept in transition, there were used three different sources: academic self-concept that pupils had about themselves; assessment of the pupils' competence from the respective subjects teachers, and students grades in Albanian language and Math in two study development periods. Results of the study will be explained and compared with the theoretical framework of reference and with different sources of information that students use to construct their academic self-concept.

Academic self-concept and school transition

What place occupies the academic self-concept in general self-concept? Self-concept is known as a complex network of self-perceptions that a person creates about his beliefs to the adoption of certain behaviors and some personal attributes with cultural value (Gresham, Eliot, & Evans-Fernandez, 1993, cited in Christensen, 2007, p. 11). Or, self-concept is related to the individual's beliefs and estimations about characteristics, roles, skills and his relationships (Wigfield, Lutz, & Wagner, 2005, p. 113). While academic self-concept can be explained as "a point of view, feelings and perceptions of a person about specific intellectual or academic skills, that represent a person's self-beliefs and feelings about an academic environment" (Lent, Brown, & Gore, 1997, p. 308). Other researchers conceptualize academic self-concept as a viewer of his or her academic ability in comparison with other students (Cokley, 2000, cited in Bacon, 2011, p. 7).

Theoretical frame of reference actually includes both of these definitions. According to Marsh (1986) and Marsh, Byrne, & Shavelson, (1988) students construct their academic self-concept making both internal and external comparisons relating to their academic performance. Students compare their academic achievements in all subjects (it has to do with what is called internal comparison) and their overall abilities in relation to others (peers) within their environment of learning (these constitute external comparisons) (cited in Williams & Montgomery, 1994, p. 5).

From school experience and scientific literature, many balances break down when students move from one school cycle to another. This phase called "transitional school" can be very stressful for many children (McGee, Ward, Gibbons, & Harlow 2004). An important indicator of this stress, have been the declines of academic achievement that students have had in elementary school. Potential influences on students' academic self-beliefs are particularly important during the middle school years, as the transition from elementary to middle/junior high school often introduces a larger social comparison group, a greater emphasis on grades and competition, and a larger, less personal environment (Eccles, Wigfield, Flanagan, Miller, Reuman, & Yee, 1989; Harter, Whitesell, & Kowalski, 1992; cited in Britner & Pajares, 2006, p. 489). Strong academic

difficulties that may be experienced by students, can lead to low self-concept and the consequences can be negative (Elbaum & Vaughn, 2001; cited in Christensen, 2007).

For measuring the students' academic self-concept, the majority of studies report changes in academic self-concept in two main school subjects: in Language and Math. Results of these studies were clear and had a common trend by emphasizing the decline in the academic self-concept and what they think about their abilities, immediately after the transition to the next school cycle (Alspaugh, 1998; Wigfield & Eccles 2000).

Method

This study was intended to assess pupils' academic self-concept before and after the transition to lower secondary education (LSE) and showing changes in this indicator during this period. The study aims to answer these research questions: How does pupils' academic self-concept change when they pass in LSE? Do the achievements in Albanian language and Math influence pupils' self-concept in these subjects? What role do teachers' perceptions play in the formation of pupils' self-concept abilities?

According to the academic self-concept theory, except children' beliefs about their competence and skills in school subjects, a powerful source of information are also grades and evaluation of others as parents, teachers or peers.

In the current study there were used three different sources for measuring the academic self-concept in the transition process: (1) academic self-concept that students had about themselves; (2) the perception of teachers about student abilities and (3) pupils' grades in two main subjects in both study development periods. Data analysis was performed with SPSS statistical package for social sciences.

Starting from scientific literature approaches, our expectations from this study were that after the transition of pupils in the sixth grade (in LSE), their academic performance would be lower. Grades after school transition would predict significant changes in pupils' self-concept abilities for the two school subjects and will constitute a lower self-concept than they had before the transition. Another expectation of the study was that teachers' perception about children competences will have impact on grades and pupils' self-concept.

Sample

In Albania, school transition from elementary school students in LSE, is made from grade five to grade six, so the study population were fifth grade pupils who passed to six.[1] In the study participated 75 pupils from three schools of Shkodra city. Percentage of participants in the two measurements was 49% boys, 51% girls. In the study also participated the Albanian Language and Maths teachers of the fifth and sixth grade.

[1]A difference of the Albanian schools structure with some of the Europe, America or Australia countries, stays in the fact that the transition between elementary school and LSE, is done in the same building with the elementary school, so children do not change school, as happen in many other countries. The exceptions are the cases when families move from one place to another, or parents with their desire change the child' school for the best education toward public or private schools.

Research instrument

As a research instrument it was used that one of Gniewosz, Eccles and Noack (2011) to measure beliefs about students' abilities. It is a self-reporting questionnaire, which seeks to assess students' self-concept in two main areas: verbal and mathematical achievements. Both measurements were conducted by the same group of pupils. The first measurement was conducted at the end of fifth grade in June 2013 and the second one was the end of first semester of sixth grade, in February 2014.

Based on the theoretical frame of reference on the formation of the academic self-concept (Marsh, 1986; Marsh, Bryne & Shavelson 1988), the questions intended to measure both internal as well as the external academic self-concept.

In the study participated the same number of pupils in the two periods of its development, who answered all questions (there was no missing response). The student questionnaire contained a total of eight questions, four for each academic area, two of which assessed the internal self-concept and two questions the external self-concept evaluation. For example, for Maths there were asked the following questions: 'How good at Maths are you?' (with seven response Likert scale: 1- 'not at all good' to 7- 'very good'), 'If you were to rank all the students in your math class from the worst to the best in math, where would you put yourself '? (1- 'the worst' to 7- 'the best'), 'In general, how hard is Maths for you'? (1-'very easy' to 7- 'very hard'), and 'Compared to most other school subjects you have taken or are taking, how hard is maths for you'? (1- 'my easiest' to 7- 'my hardest course') (Gniewosz, Eccles and Noack,2011, p.6). The same questions were asked for the Albanian Language subject. The whole instrument used had the coefficient of reliability α = .91, while Cronbach's alpha of the pupils questionaries had these weightings reliability: English Language T1: α = .94, T2 = .94; Maths T1: α = .94, T2: α = .96. (where T1 = The end of fifth grade, T2 = The first semester of sixth grade).

While for evaluating pupils' abilities by teachers in both academic fields and in both periods of measurement, a questionnaire was completed by Albanian Language and Math teachers of the fifth and sixth grade. Questions were also taken from the study of Gniewosz, Eccles and Noack (2011), which was used for students' mothers, but in this study the questions were modified to be used for teachers. The purpose of this questionaire was to measure teachers' perceptions about pupils competence. Teacher questionnaire contained two columns, in the first column the list of pupils names and to the next the following three questions: 'In general, I believe that (the name and surname of the pupil) is ... ' (response format: 1- 'not at all good at Maths' to 7- 'very good at Maths'), 'This pupil finds Maths ... ' (1- 'very easy' to 7 'very hard'), and 'How well is this pupil doing in Maths this year'? (1- 'not at all well' to 7- 'very well'). The same questions were also used for the Albanian Language subject. Cronbach's alpha of teacher questionnaire resulted negative (α = - .28) due to the negative covariance between questions. To fix this, I recoded the second question of teachers: 'This pupil finds Maths ... ' (to reverse format responses: 1- 'very hard' to 7- 'very easy'), and reliability coefficients became positive. The Cronbach's alpha of teacher in Albanian Language T1: α = .97, T2: α = .96, in Maths T1: α = .98, T2: α = .97.

The third source for assessing academic self-concept in Albanian language and Maths, there were used pupils grades in these subjects, which were extracted from records of the respective classes.

Data analysis and results

Data analysis was done with SPSS statistical package, precisely with Repeated Measures Multivariate Analyses. The dependent variables were academic self-concept that pupils have about themselves and teachers' perception about pupils abilities.

The analysis involved academic competence changes in both main subjects (Albanian language and Maths) and the perception of teachers on both measurement periods. Academic issues and two measurement periods were analyzed as within subject factors. Mean and Standard Deviation of these variables are presented in Table 1.

Table 1: Mean dhe Standart Deviations

Vetë-koncepti i aftësive	Mean	Std. Deviation
SCA Lang5	4.50	1.19
SCA Lang6	4.08	.47
SCA Math5	3.98	.40
SCA Math6	4.09	.50
Teachers competence		
TPSC Lang5	5.00	1.69
TPSC Lang6	4.17	.56
TPSC Math5	4.42	.48
TPSC Math6	4.07	.49

SCA = self-concept of abilities, TPSC = Teacher Perceptions of Pupils Competence.
Lang5 = Language class 5, Math5 = Maths class 5.

As academic self-concept and the teachers' perception of pupils competence had decreased during T1 and T2, except to the mathematical self-concept of pupils. Multivariable tests showed decline between T1 and T2 (time 1 and time 2) in the following indications: in academic self-concept :F (5, 70) = 7.14, p = .000, η^2 = .51, and in teachers' perceptions of pupils competence: F (1,74) = 9.79, p = .003, η^2 = .11.

Relations between academic self-concept (SCA) and teachers' perception of pupils' self-concept (TPSC) were performed using Pearson correlation coefficient. Full correlation between all elements of the dependent variables was made in order to see the changes before and after transition (Table 2). There was correlation between academic self-concept in Math between T1 and T2: r = .31**; while in Languages the correlation was not significant: r = .04.

Perceptions that teachers had to pupils' self-concept presented strong correlations in Language, r = .59** and more in Math, r = .63**. Correlations between self-concept subjects and relevant grades were stronger in T1 than in T2: SCA Lang5 - Grade Lang5: r = .57**, SCA Lang6 - Grade Lang6: r = .26*. In Math T1: r = .25*, Math T2: r = .11 (not significant).

Grades between subjects had strong correlations: Language T1: r = .92**, T2: r = .85**. In the same way as grades between Languages and Maths as well as grades between subjects and between Time1 and Time2, had strong correlations: Grade Grade Lang5 with Math6: r = .82**; Lang6 with Math5 Grade Grade: r = .90**.

Table 2: Correlation Matrix between grades, self-concept and teachers' perceptions

		1	2	3	4	5	6	7	8	9	10	11	12
1	Grade Lang5	1											
2	Grade Math5	.92**	1										
3	Grade Lang6	.91**	.90**	1									
4	Grade Math6	.82**	.81**	.85**	1								
5	SCA Lang5	.57**	.56**	.55**	.53**	1							
6	SCA Lang6	.22	.23*	.26*	.29**	.04	1						
7	SCA Math5	.25*	.25*	.18	.17	.24*	.02	1					
8	SCA Math6	.13	.10	.09	.11	-.02	-.11	.31**	1				
9	TPSC Lang5	.97**	.90**	.90**	.83**	.59**	.25*	.22	.11	1			
10	TPSC Math5	.75**	.85**	.76**	.66**	.45**	.20	.17	-.00	.74**	1		
11	TPSC Lang6	.85**	.86**	.94**	.81**	.52**	.26*	.17	.11	.86**	.74**	1	
12	TPSC Math6	.75**	.73**	.78**	.87**	.46**	.24*	.05	.07	.76**	.63**	.74**	1

Note: Table 4 presents the Pearson correlation coefficients (r). Grade Lang5 = grade Language class 5, Grade Math5 = grade Maths class 5, SCA Lang5 = self-concept of abilities in Language class 5, SCA Math5 = self-concept of abilities in Maths class 5, TPSC Lang5 = Teacher Perceptions of Pupils Competence in Language, class 5. TPSC Math5 = Teacher Perceptions of Pupils Competence in Maths, class 5.

** Correlation is significant at the .01 level (2-tailed).

* Correlation is significant at the .05 level (2-tailed).

The Regression analysis for issues within subjects showed that grades predicted significant changes in academic self-concept of pupils before and after the transition (Table 3). Languages T1: β = .57 **, T2: β = .24*, grades in Maths predicted no significant changes T1: β = .18, T2: β = .11.

Grades significantly predicted changes in pupils' self-concept for issues between subjects. So, Language grades predicted changes in Maths self-concept before transition: T1: β = .25** but after the transition the cofficient was not statistically significant: T2: β = .09. Maths grades predicted significant changes in Language self-concept: T1 = .55**, T2 = .27*.

Table 3: The standard coefficients of regression tests

	T1		T2	
	β	SE	β	SE
Grade Lang – SCA Lang	.57**	.07	.24*	.03
Grade Lang – SCA Maths	.25*	.06	.09	.04
Grade Maths – SCA Maths	.18	.03	.11	.04
Grade Maths – SCA Lang	.55	.07	.27*	.04
Grade Lang – TPSC Lang	.97**	.03	.85**	.02
Grade Lang – TPSC Maths	.85**	.02	.73**	.02
Grade Maths – TPSC Maths	.94**	.03	.87**	.02
Grade Maths – TPSC Lang	.90**	.05	.66**	.03
TPSC Lang – SCA Lang	.59**	.06	.26*	.09
TPSC Lang – SCA Maths	.23*	.02	-.009	.10
TPSC Maths – SCA Maths	.17	.09	.07	.12
TPSC Maths – SCA Lang	.53**	.24	.25*	.10

The table 3 shows the standardized regression coefficients (β). SE = Standard Error, T1 = The end of fifth grade, T2 = the first semester of sixth grade. Grade Lang = Grade Language, Maths = mathematics, SCA = Academic Self-Concept, TPSC = Teacher Perceptions of Pupils Competence.
*p <.05; **p <.01.

Grades also predicted strong changes to teachers' perceptions in Language: T1: β = .97**, T2: β = .85**. Maths: T1: β = .94**, T2: β = .87**. Teachers' perceptions predicted significant changes in pupils self-concept in Language: T1: β = .59**, T2: β = .26*, while in Maths although teachers' perception had not impact on Maths self-concept, again the coefficients decreased: T1: β = .17, T2: β = .07.

Between subjects issues, teachers' perception in Language predicted changes in Maths self-concept: T1 = .23*, after the transition this effect was negative and not significant: T2 = - .009. Better appear teachers' perceptions in Maths towards pupils' self-concept in Language: T1 = .53**, T2 = 25*. Despite the value of the coefficient β, from all regression tests presented in Table 3, all coefficients predicted decline after the transition.

Partial correlation was applied to explore the relation between grades and pupils' academic self-concept, while controlling for teachers perceptions on pupils competence. A low negative partial correlation was recorded between language grades and language self-concept (T1) mediated from perception of teachers, r = - .062, p = .000 with a high level of grades impact on the self-concept students. An inspection of zero correlation (r = .57) suggested that the perception of teachers had a very negative impact on the relation between grades and pupils' self-concept in pre-transition languages. Even in Language T2, grades and self-concept of pupils were influenced by teachers perception, r = .02 and zero correlation: r = .23.

While in Maths before and after the transition, teachers' perception did not affect the correlation between grades and pupils' self-concept. Maths T1: r = .05 and zero correlation: r = .18; Maths. T2: r = .10 and zero correlation: r = .11.

Partial correlation was not statistically significant in influencing teachers' perception on correlation between grades and intersubject's self-concept. So, teachers perception did not affect on the relations between Language grades and Maths self-concept, and did not affect in the relations between Maths grades and Language self-concept. This means that the correlation between them was clean and did not depend on any other mediator factor.

Univariant tests were developed through regression analysis to see first of all, the effect of grades on self-concept of children; secondly, the effect of grades in teachers' perception and thirdly, the effect of teachers' perceptions on pupils' self-concept in both subjects (Languages and Math). All regression coefficients had decreased. Only results of regression between Language self-concept T1 and teachers perception in Math T1 (p = .94), self-concept in Math T2 and teachers' perception in Math T2 (p = .55), self-concept in Math T2 and teachers' perception in Language T2 (p = .94), showed that correlations were not significant and the p-value was p > .05 for the three pairs of variables above.

Discussion

This study aimed to assess self-concept skills of pupils during the transition from primary to lower secondary education (AMU). The main purpose was to study the changes that undergoes self-concept of students' abilities in two main subjects: the Albanian language and Mathematics.

Results from this study confirmed the assumptions of some of the theoretical framework of reference of the Marsh (1990) and different sources of information for the construction of the academic self-concept. Results showed that self-concept of pupils' verbal abilities, teachers perception of pupils competence and grades in both subjects, had decreased after the transition.

Similar findings were reported from a study of Bacon (2011) for 101 African-American students who moved from urban schools to rural schools. The findings of this study proved strong transition effects in academic performance of students, in the variables of self-concept, and in academic achievement. Although not comparable to the size of the study population with the current study, Gniewosz, Eccles and Noack (2011) also found decline in self-concept abilities of students immediately after the transition to the LSE. Stronger declines in language skills, and much less in those mathematical resulted in the longitudinal study of Jacobs, et al. (2002), who studied changes in beliefs and values of children's competence in language arts, mathematics and in sports for students from grades 1-12.

This study showed that the correlations between academic self-concept in language and self-concept in math were low and negative (T2 = - .11) only after the transition, confirming the theory of reference under which this correlation should be low or zero (before transition this correlation was significant). This relation demonstrates that pupils have the necessity for internal and external comparisons for the construction of academic self-concept. Janice & Montgomery (1994) reported similar results from their study.

Based on theoretical model of Marsh (1990), the impact of verbal achievements on maths self-concept and mathematical achievements in verbal self-concept, it is assumed to be low and negative. From current study only impact of language grades in mathematical self-concept after the transition, came low and positive ($\beta = .09$), whereas the effect of mathematical achievements in verbal self-concept were high, contrary to the assumption of the theoretical model of Marsh.

Internal comparisons that pupils make for themselves, were strong. This became evident because of the high correlation between verbal achievement and math, and between verbal achievements in verbal self-concept. As for the impact of teachers perceptions on student abilities, Meaning (2007) states that teachers strongly influence the academic and social issues. (p. 12). Results of this study showed that perception of teachers affect students' self-concept in language before and after the transition, but in maths this impact was not significant.

Our expectations on the results of the study, were not all realized. Thus, the transition did not affect self-concept in mathematics. Despite the achievements in Maths were lower after the transition than before, self-concept of pupils' abilities in this subject, does not change much. This means that after the transition grades lose their value in the formation of self-concept of students mathematical abilities. Also, self-concept of pupils in maths was not affected neither by grades nor by teachers' perception. Resources that pupils used to build their self-concept in Maths were not the same as those used for verbal self-concept. Apparently, pupils have used other sources than grades and teachers perceptions on forming their self-concept in mathematics. Perhaps students may have used the perception of peers or parents as a source.

Limitations

Results of this study can not be generalized because of the small number of sample used and the limited number of schools involved. Although in this study were used three different sources to explain the construction of pupils academic self-concept, other sources must be taken into consideration, such as perception of peers or parents. This fact was confirmed by the construction of pupils self-concept in maths, which was not influenced by two main sources that

we took into consideration. Also, the limited number of measurements before and during the transition of children in lower secondary education, can not fully explain how the construction of self-concept continues. Other studies can be extended to a longer time segment including not only a key point of the transition.

Conclusions

Results from this study confirmed some assumptions of the theoretical framework of reference of Marsh (1990) and the use of different sources of information for the construction of their academic self-concept by pupils. In conclusion, the transition of pupils from primary to LSE, was negatively affecting their academic achievements, self-concept of children's abilities in the language, and teachers' perceptions on pupils abilities. Sixth grade teachers showed less confidence in the abilities of pupils than teachers of fifth grade. To build maths self-concept, pupils did not use informations' sources used for the construction of verbal self-concept.

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