INTELLIGENCE, SELF-ESTEEM AND ACADEMIC ACHIEVEMENT IN KOSOVO YOUTH

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ABSTRACT

Numerous studies have investigated the impact of self-esteem and intelligence on academic achievement. The findings are generally inconsistent. The aim of this study was to understand the relationship between intelligence, self-esteem and academic achievement among young people in Kosovo. It was a quantitative cross-sectional study. The sample consisted of 1856 participants, aged 10-18 years old (Mage = 15.29, SD = 1.76). Participants completed the Rosenberg Self-Esteem Scale and The Raven Standard Progressive Matrices. Grade Point Average (GPA) was used to measure academic achievement. Data processing was done with SPSS 21.0 and Microsoft Excel 2013. Participants according to self-reported academic achievement were classified as follows: fail (0.1%), sufficient (2%), good (15.6%), very good (26.7%) and excellent (55.7%). As regards self-esteem participants were classified as follows: low self-esteem (26.9%), and normal self-esteem (73.1%). A significant positive correlation was found between academic achievement and intelligence ($r = .31$; $p = .00$) but not between achievement and self-esteem. This significant correlation resulted for both genders separately. The Mann-Whitney test found significant differences in academic achievement between genders and between groups with high intelligence and those with normal intelligence. Intelligence, but not self-esteem revealed a significant relationship with academic achievement. Future studies on the topic might focus on explanatory factors or the possibility of interaction of other variables related to academic achievement.

Keywords: *Intelligence, Self-esteem, school, achievement, Kosovo*

INTRODUCTION

Multidisciplinary research involving the fields of psychology, education, and social studies has shown great interest in understanding links between youth academic achievement, intelligence, and self - esteem. These studies have explored these variables separately but also together.

Intelligence and academic achievement. Research studies have shown that intelligence might indeed be a strong predictor of academic achievement.

However, there are also studies that report weak, or insignificant associations or just a mediating effect. Jencks et al.'s (1979) in eight samples from six longitudinal studies reported correlations ranging from 0.40 to 0.63 between cognitive test scores and the amount of education obtained [1]. Mackintosh's (1998) survey reported a relationship between IQ scores and school performance, which ranges between 0.4 and 0.7 [2]. In a 5-year prospective longitudinal study of 70,000+ English children aged 11 years old intelligence has been found to predict academic achievement five years later, at age 16 [3]. Various studies have found that correlations between psychometric intelligence and achievement are usually moderate to strong (e.g., Deary et al., 2007; Mackintosh, 2006; McGrew & Knopik, 1993; cited by Kornilova et al, 2009) [4]. A more recent study found that intelligence contributed to predicting academic achievement [5].

However, these studies have been criticized due to the low amount of variance they explain, e.g., conventional IQ measures typically explain only about 25% of the variance in academic achievement (MacKinnon, 1962; Grigorenko & Kornilov, 2007; Sternberg et al., 2001; cited by Kornilova et al, 2009) [4].

Intelligence, self-esteem and academic achievement. In a pioneer study of the field, half a century ago, which investigated fifth grade and eighth grade students randomly selected, authors reported that IQ but not self-esteem correlated significantly with achievement for the fifth graders [6]. However, more recent studies have found significant relationships for both intelligence and self-esteem. In a sample of 1353 Austrian pupils (mean age 13.74 years), Intelligence and self-esteem were the strongest predictors of GPA independent of [7]. Kaya & Oğurlu (2015) found a statistically significant relationship between intelligence and academic achievement, but the relationship between self-esteem and academic achievement was not statistically significant [8]. Guszkowska et al (2016) in the study with 385 first-year undergraduates aged 18-26 years studying physical education and sports at the University of Physical Education in Warsaw, found that global self-esteem had nonsignificant correlations with fluid intelligence and academic performance [9].

Self-esteem and academic achievement. Self-esteem is also a well-studied variable especially in relation to academic achievement. In an early meta-analysis across more than two hundred studies a positive effect of self-esteem on achievement was reported, explaining 4–7% of the variance [10]. The correlation range reported was 77 to .96 with an “average” correlation of .21. This study [10] included a total sample of 202,823 participants and produced a database of 1,136 correlations between self-ratings and performance measures. Another study found that, self-esteem was associated with academic achievement [11] but, general self-esteem did not exert any significant influence on later academic achievement. In other more recent studies, correlations between academic and global self-esteem and achievement range from .21 to .53 (cited on Roskam & Nils (2007) [12]. In a longitudinal study conducted with 1130 adolescents (557 males and 573 female) from 1st-6th grades from Belgian secondary schools (Roskam & Nils (2007) using

hierarchical linear models, authors reported a bidirectional relationship between self-esteem and academic achievement [12]. Pullmann & Allik, 2008) reported a more specific relationship, between academic self-esteem rather than overall self-esteem and academic achievement [13]. Moreover, self-esteem in this study was not considered as an indicator of academic low performance.

Kosovo context. Kosovo is the youngest country in Europe — both as regards its acknowledgment as an independent state and the average age of its population. Kosovo's population of about 1.8 million is the youngest in Europe, with an average age of 26 years. Despite significant progress across several dimensions during the recent years, Kosovo still is one of the poorest countries in Europe, with almost a third of the population living below the national poverty line in 2017 (24.4%). Overall, unemployment rates were still high at 25 percent of the labor force (46.9 percent of youth) in 2020. As regards research studies examining correlations between intelligence, self-esteem and academic achievement of youth from Kosovo, so far no studies have been published.

The aim of this study was to understand the relationship between intelligence, self-esteem and academic achievement among young people in Kosovo.

METHODOLOGY

Sample and procedure

The sample consisted of 1856 students, aged between 10-19 years old (Mage = 15.29, SD = 1.76). In terms of gender composition, there were 762 males (41.1 %) and 1094 (58.9 %) females. Participants were randomly selected from schools in Prizren. The questionnaires were distributed to students in their classrooms after issuing of relevant permissions. Informed consent was asked from their parents prior to the administration of the questionnaire. No incentives for youth participation were given.

Instruments

Measuring instruments used in the present study included the: Standard Progressive Matrices (Raven,1938), and Rosenberg Self-esteem Scale. Scales were translated into the Albanian language by using the translation back translation method to ensure correct translation.

1. Standard Progressive Matrices (SPM; Raven, 1938) is a measuring instrument of nonverbal reasoning ability and general intelligence that has the advantage of minimizing possible cultural biases. The RPM is a well-established instrument and most widely used among the non-verbal intelligence tests. It can be given individually or as a group test and is easy to score. Students provided their answers on a separate answer sheet, which was then scored by hand.

2. Rosenberg self-esteem scale [14]: includes 10 items which measure self-respect and self-acceptance. It is a Likert type scale with options ranging from (1) strongly agree to (4) Strongly Disagree. During analysis several items were reversely scored according to the authors' instructions.

3. Self-reported Grade Point Average (GPA) was used to measure academic achievement. In Kosovo, grades in pre-university education range from one (fail) to five (excellent). The classification was made based on the average grade self-reported by students at the time of conducting the research. On the other hand, it should be mentioned that there is empirical evidence (meta-analysis) that suggests that the self-reporting of the grade point average is a good indicator of current performance (eg, Kuncel et al., 2005) [15].

Study design

The study was a cross-sectional correlational study. Data handling and statistical analysis was carried out by using SPSS software version 21 and Microsoft Excel 2013. These descriptive data were further analysed according to age, gender and other variables investigated. Normality is assessed with Kolmogorov-Smirnov statistic. In this case, the Sig. value is .000, suggesting violation of the assumption of normality for all variables, suggesting the use of nonparametric tests. For differences across groups, Mann–Whitney U test was used. To examine relationships between variables correlational analysis – Spearman-Rho test was used. The method of multiple standard regression analysis was used to predict the dependent variable academic achievement.

RESULTS

Descriptive analyses

Participants according to self-reported academic achievement were classified as follows: fail (0.1%), sufficient (2%), good (15.6%), very good (26.7%) and excellent (55.7%) (Table 1). Results showed that the mean value for self-esteem in the study samples was 27.76 (SD=3.47). 26.9 % of the sample were classified with low self-esteem. The mean value for intelligence in the study samples was 47.74 (SD=9.91) in a range from 0-60.

Comparative analysis for variables investigated

Despite findings that boys report slightly higher scores as compared to girls, Mann-Whitney test revealed no significant gender differences in self-esteem scores and in intelligence scores but there were significant gender differences in academic achievement ($Md_{females}$=5, N=1094; Md_{males}=4, N=762; Z=-6.785, p<.00).

Mann-Whitney test revealed no significant gender differences in intelligence scores and in academic achievement between groups with normal self-esteem vs. low self-esteem.

Table 1. *Demographic characteristics of the participants in the survey and mean of intelligence/self-esteem (author survey, own source)*

Participants (n=1856)	N	%	Intelligence Mean	Self-esteem Mean
Gender				
Male	762	41.1	47.34	27.82
Female	1094	58.9	48.02	27.72
Age group (years)				
10 to 12	84	4.5	46	30.58
13 to 17	1567	84.4	47.78	27.64
> 18	205	11	48.16	27.56
Grade Point Average (GPA)				
Fail	1	.1	27	24
Insufficient	38	2.0	37.52	28.13
Good	289	15.6	42.65	27.95
Very good	495	26.7	46.27	27.53
Excellent	1033	55.7	50.26	27.82
Cut-off self-esteem level				
Low self-esteem	499	26.9	47.68	23.91
Normal self-esteem	1357	73.1	47.76	29.18

Kruskal-Wallis analysis revealed significant differences in self-esteem scores by age groups X2 (2, n=1856) =47.854, p<.00; whereas scores were higher in the early adolescence group (Md=29) as compared to the middle adolescence group (Md=27) and late adolescence group (Md=27). Kruskal-Wallis analysis revealed significant differences in academic achievement scores by age groups X2 (2, n=1856) =47.854, p<.00; whereas scores were higher in the early adolescence group (Md=5) and middle adolescence group (Md=5) and as compared to the late adolescence group (Md=4).

Correlations between variables

Correlational analyses indicated significant positive correlations between intelligence and academic achievement scores (r = .31, p <.00), but not between self-esteem and academic achievement (Table 2). These correlations resulted the same even when we looked separately at the groups of participants with low self-esteem and normal self-esteem.

Table 2. *Correlations between intelligence, self-esteem and academic achievement scores (author survey, own source)*

Spearman's rho	Academic achievement	
Intelligence	Correlation Coefficient	.311**
	Sig. (2-tailed)	.000
	N	1856
Self-esteem	Correlation Coefficient	-.003
	Sig. (2-tailed)	.901
	N	1856

As regards correlational analysis performed separately by age (Table 3), results showed lack of significance of the relationship only at the ages of 11 and 12; whereas in all other age categories correlations with academic achievement are significant., Self-esteem with academic achievement turns out to have positive significant relationship at the age of 13 and a negative significant relationship at the age of 16, but no significant results in other age groups (Table 3).

Table 3. *Correlations between intelligence, self-esteem and academic achievement scores by age (author survey, own source)*

Age (Years)	N	Intelligence	Self-esteem
11	40	0.035	0.035
12	43	0.183	0.103
13	201	.457**	.152*
14	380	.388**	0.001
15	341	.350**	-0.051
16	306	.278**	-.146*
17	339	.323**	0.029
18	179	.174*	-0.005
19	26	.513**	-0.309

In the case of correlation analysis by age group we found that the significant positive correlation between intelligence and academic achievement scores was not found in the age group 10-12 years, but only in the age groups 13-17 years ($r = .34$, $p < .00$) and over 18 years ($r = .21$, $p < .00$).

A multiple standard regression analysis was run to predict academic achievement from gender, age, intelligence and self-esteem. All the independent (or predictor) variables were entered into the equation simultaneously. The model as whole reaches significance $F(4, 1855) = 88.724$, $p < .000$, $R^2 = .161$; and the total variance explained by the model as a whole was 16.1%. Apart from self-

esteem all other variables added statistically significance to the prediction, p< .05 (Table 4).

Table 4. *Multiple Regression Analysis Summary for variables and Academic achievement (author survey, own source)*

Variable	B	SEB	Beta	Sig.
Age	-.080	.010	-.172	.000
Gender	.269	.035	.162	.000
Intelligence	.028	.002	.339	.000
Self-esteem	-.001	.005	-.005	.819
Constant	3.850	.236		.000

[a]*Dependent variable= Grade Point Average (GPA)*

DISCUSSION AND CONCLUSIONS

The aim of the present study was to understand the relationship between intelligence, self-esteem and academic achievement among young people in Kosovo. Our goal in exploring the correlations between intelligence and self-esteem with academic achievement is the first research of its kind in our country, and this fact adds great relevance to the findings. Results showed significant positive correlations between academic achievement and intelligence, but not self-esteem.

The resulting relationship between intelligence and academic achievement is in line with existing studies. However, the correlation found in the present research was of a low to moderate effect size (.31), but comparable although lower than results reported in the studies of Jencks et al (1979) and Mackintosh (1998) reporting an effect size over 0.4. The relationship strength varied with age and was found to be highest in 19-year-olds (.51) and lowest in 18-year-olds (.17). Most important, intelligence seemed to have even a predictive power for academic achievement in this sample along with age and gender, explaining up to 16.1% of the variance in academic achievement. A possible explanation is that the education system in Kosovo, which is still undergoing important reforms, favors and reinforces intelligence, in the sense that this ability is sufficient for ensuring good results. Other factors that are demonstrated to affect academic achievement are not yet considered relevant in the assessments of students, for example, regular studying, punctuality in class, self-motivation, availability of teaching and learning materials, and competency of teachers. Nonetheless, this explanation is tentative and further research is needed to examine this proposition.

The finding that intelligence had significant correlations with academic achievement whereas self-esteem did not, are similar to existing studies providing evidence from other countries, e.g., [6], [8] and [9]. However, these results were not in line with findings from other four studies which found significant correlation ratios [10], [11] and [12]. Moreover, when considered separately by

age, the two significant correlations were one was positive (13-year-olds) and the other negative (16-year-olds). This finding goes in line with many existing theoretical approaches so far that describe self-esteem as a construct that is distinguished by age-based instability which then reflects to relationships with other variables. Yet another explanation might be related to the consideration of self-esteem as a culturally based construct, which fluctuates based on specific cultural values and influencing factors. Nonetheless, this explanation is also tentative since there is no research so far investigating cultural factors involved in the relationship between self-esteem and academic achievement.

Finally, it should be mentioned that the present findings should be also considered in the context of their limitations, the most important one being sample composition. Indeed, the sample of the study was dominated by females (approximately 69%), age group 13–17 years (85%), and excellent grades (approximately 60%). Therefore, care should be taken in generalizing these findings to populations with characteristics other than these. However, despite these limitations the present study provides an important contribution especially because it is the first one investigating the relationships between these variables in Kosovo. Future research might consider other factors such as the socio-economic or cultural contextual variables in population representative samples in Kosovo.

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