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PILOT STUDY CONCERNING SCHOOL MALADJUSTMENT IN SECONDARY AND HIGH SCHOOL CYCLES

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Abstract: *This pilot study was carried out on 130 students from secondary and high school cycles, 53 of masculine gender, 77 of feminine gender, with an average age of 14 years (SD 2.67). There were applied the newly created School Maladjustment Questionnaire, in conjunction with a verbal intelligence test (Verbal Recombination) and a nonverbal one (Bonnardel 53), jointly providing an IQ. The study hypotheses predicted the existence of some gender differences concerning school maladjustment (more maladaptive reactions which are internal for girls and external for boys – unconfirmed). These differences are caused by the school cycle (more school maladjustment in high school which was confirmed only for the external component of academic maladjustment). There were predicted significant negative correlations of SMQ with school averages and with intelligence level – these hypotheses were also confirmed.*

Key words: *school maladjustment, intelligence, school averages, academic stress.*

1. Introduction

According to the definition offered by Simons, Kalichman, and Santrock (1994) "... adjustment is the psychological process of adapting to, coping with, and managing the problems, challenges, and demands of everyday life" (p. 8). Despite its importance, academic adjustment is preponderantly investigated especially on its university segment, the studies on school cycles that precede this period being incomparably fewer. There are numerous proofs related to evolutive nature of academic maladjustment. Lee and Bierman (2015) investigate associations between each type of kindergarten support, children's aggressive behaviors, social withdrawal, learning engagement, and emergency literacy skills in first grade, controlling for their pre-kindergarten adjustment.

On the other hand, Miles, Fulbrook, and Mainwaring-Mägi (2016) analyze the opportunity of a screening procedure of very early school-age children (age 4 – 7 years) for early identification of learning problems that may require enhanced learning opportunity. Their review is a systematic search to identify the instruments that measured development and early academic skills. Cunningham and Suldo (2014)

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appreciate that negative emotionality, specifically anxiety and depression; affect 14 to 32 % of youth, schools having to become a major provider of mental health services to children. Their findings suggest teachers can identify by specific screening instruments approximately half of children who experience at-risk levels of anxiety and depression. Baker and Siryk (1986) developed the Student Adaptation to College Questionnaire (SACQ), which is the most popular instrument that measures multi-dimensionally students' adaptation to college, very useful to counseling centers from universities and high schools. They suggest an accurate definition of academic maladjustment that is conceived as a cope process with academic, social, personal-emotional, and environmental challenges involved in attending university (Grama, 2018).

My preoccupation for creating an instrument to diagnose school maladjustment dates from 2003 (Clinciu, 2003) when I developed the first form of School Maladjustment Questionnaire (SMQ). In academic context it operationalized the reaction to the presumed stress due to school learning by way of two correlative concepts: School Neuroticism and Rebel Spirit. The instrument consisted of 67 items that were scored in a dichotomous manner (true/ false), and it was applied to the students in secondary school and high school. Subsequent studies (Clinciu, 2004; Clinciu & Cazan, 2014) demonstrated the validity of the starting point on school maladjustment seen as a reaction to academic stress. SMQ was validated by its correlation with other instruments (Eysenck's EPQ – Junior, Baker and Siryk's SACQ, Gadzella's Student Stress Inventory). Other research studies (Clinciu, 2010; Clinciu, 2012) showed the necessity to create a new distinct instrument in order to investigate academic maladjustment at university level. Academic Adjustment Questionnaire – AAQ (Clinciu & Cazan, 2014; Clinciu, 2014) investigates three dimensions that are involved in academic adjustment: Academic Neuroticism, Procrastination and Academic Dishonesty. Our experience acquired in the process of elaborating the academic maladjustment questionnaires indicates the necessity to elaborate a larger and more nuanced concept on this phenomenon, which should comprise its internal dimension (anxiety, depression and self-efficacy) and also its external dimension (procrastination, academic dishonesty and disruptive behavior), both of them reunited in a unique score.

2. Study objectives and hypotheses

The objectives of this pilot study concerning school maladjustment in secondary and high school cycles are the following:

- determining the start-up psychometric qualities of the newly created School Maladjustment Questionnaire (SMQ);
- preliminary research of SMQ structure;
- investigating the relationships of this instrument with school averages, namely with general point average, the Romanian language and mathematics averages from the previous semester;
- analyzing the weight with which intellectual endowment and factors of school maladjustment occur in obtaining school results;
- determining the evolution of school maladjustment and of school performances in secondary and high school cycles;
- determining the differences caused by gender in obtaining academic performances.

The first hypothesis of the present study was defined out of prior investigations which showed differential patterns and levels of school maladjustment related to gender. In the present research study, I specifically issued the hypothesis according to which the level of school maladjustment is associated with gender. The girls revealed higher scores for internal component of SMQ, while the boys for external, behavioral component of it. A detailed analysis after gender criterion and in accordance with a larger and more representative sample, could clearly answer the assumption that this type of predominantly external reaction is more typical for boys. A second hypothesis projects an increase of the global level of school maladjustment from the lower-secondary school cycle to the upper-secondary one, mainly on the account of its external component. The third hypothesis predicts a statistically significant negative correlation between the general point average (GPA) and the averages at the basic school subjects on one hand, and the scores at SMQ scales and sub-scales on the other hand. The last hypothesis predics a significant negative correlation between the SMQ scores and Intelligence Quotient (IQ).

3. Participants, instruments and procedure

The participants were 82 students from four consecutive lower-secondary grades from an ordinary school in Brașov, together with 48 students from a 9th grade and a 10th grade of a theoretical high-school in the same city. The average age was 14 years and the standard deviation of 2.67, 53 students being of masculine gender and 77 of feminine gender. Their participation was conditioned by the freely consented agreement of the students' parents, of the students and of the respective schools' officials. The research instruments were administrated during educational class. the instruments were a mini questionnaire of factual data, a non-verbal intelligence test with a big loading in g factor (Bonnardel 53) and a vocabulary and verbal fluency test (Verbal Recombination). Both tests had an administration time of 15 minutes each and an Intelligence Quotient (IQ) was obtained by combining their standard scores. The remaining fraction of time was used to complete the School Maladjustment Questionnaire which consists of 100 items that are grouped in six subscales: School Anxiety, School Depression, Self-efficacy, Procrastination, Academic Dishonesty, and Disruptive Behavior. The first three subscales contribute to the scale of Internal Reactions of academic stress, while the last three to the scale of External Reactions, and out of their combination there results a total score at SMQ.

4. Results

The descriptive statistics for the six subscales and the three main scales of the SMQ are summarized in the Table 1 below. The distribution of items for each subscale evolves from 8 to 25 items, the amplest subscales being Disruptive Behavior, School Depression and Self-efficacy (25, 20 and 19 items), while the subscale Academic Dishonesty has only 8 items. It is expected that certain basic characteristics of SMQ instrument should be associated with the number of items, the amplest of them offering a more precise and consistent image of the measured construct compared to those consisting of a reduced number of items. This thing will be proved through scale analysis of the instrument as a whole and of its subcomponents.

Descriptive statistics for SMQ scales and subscales Table 1

	Items	Range	Min	Max	Mean	SD	Skewness	Kurtosis
SA School Anxiety	15	63	16	79	45.52	13.67	.02	-.44
SD School Depression	20	68	22	90	49.22	17.61	.43	-.77
SE Self-efficacy	19	71	19	90	45.96	17.83	.33	-.57
PR Procrastination	13	52	13	65	38.58	14.23	-.06	-.92
AD AcademicDishonesty	8	32	8	40	22.78	8.48	-.03	-.97
DB Disruptive Behavior	25	88	25	113	53.22	22.65	.94	.07
SMQ Internal Reaction	54	173	60	233	140.70	44.23	.28	-.71
SMQ External Behavior	46	161	48	209	114.60	39.96	.41	-.52
SMQ Total score	100	313	113	426	255.30	75.80	.31	-.61

Note: N = 130 for all scales and subscales

Table 1 above shows that the dispersion of scores for each scale is different enough varying from 88 to 32 score points. Spectrum of scores variation for the two major scales of SMQ is relatively close, being 173 for Internal Reactions and 161 for External Reactions to academic stress. The two major dimensions of SMQ have relatively close average contributions to total score, the scattering indicator giving values that are close to both scales. The skewness and kurtosis indicators are remarkable: they show values that are comprised between the desirable limits of ± 1 for both subscales and the two main scales, and for the total summative scale. As a general tendency, skewness tends to indicate positive asymmetries, that is towards the left of distributions (to the small scores area), while kurtosis tends to provide deficit curves which shows an emphasized disparity of scores.

Table 2 below shows a remarkable internal consistency of the entire SMQ scale (alpha Cronbach of .97), and also of its two major dimensions, which are Internal and External reactions to academic stress, with alpha Cronbach values of .96. These very high values suggest the existence of a certain redundancy, which implies reducing the number of items for some subscales so that they can be applied more easily. This can be achieved by combining the scale analysis with the factorial analysis that was carried out on a more numerically extensive and representative school population, in order to retain the strongest items with the best psychometric qualities in the final form of SMQ.

Internal consistency alpha Cronbach of SMQ scales and subscales Table 2

School Anxiety	School Depression	Self-efficacy	Procrastination	Academic Dishonesty	Disruptive Behavior	Internal Reactions	External Reactions	SMQ total
.86	.92	.93	.93	.89	.94	.96	.96	.97

Table 3 below comparatively reproduces the correlations of cognitive factor (intelligence, through its verbal component and of abstract reasoning) and of subscales and SMQ dimensions in obtaining academic performances for the entire sample. As it was predicted, there is a close positive association between GPA and cognitive factors, of .42 for Bonnardel 53 test, of .42 for Verbal Recombination test and of .47 for the IQ that resulted by reuniting the two scores. By comparison, the external dimension of the reaction to academic stress is much more highly statistically associated with GPA than

the internal reaction to this type of stress, being of -.43, respectively -.18. On the whole, the SMQ scores are a significant predictor of academic achievement which is expressed by GPA, in relation to which association is an inverse one (r = -.32). This relational pattern between variables can be found at very close levels for the success in the Romanian language, but not for the one in mathematics where correlations are insignificant with both cognitive factors and with SMQ scales as well. Its explanation could lie in the fact that the success in mathematics is dependent on previous acquisitions first of all, and less on other factors, and this happens because sequential learning occurs. The matrix of intercorrelations in Table 3 below shows medium, big and very big associations between the SMQ subscales and dimensions, which is an indirect argument in connection with the high internal consistency of this questionnaire.

Correlations between school grades, IQ tests and MSQ scales and subscales Table 3

	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.GPA	.85**	.43**	.41**	.42**	.47**	-.25	-.15	-.10	-39**	-.37**	-.39**	-.18	-.43**	-.32*
2.Romanian	-	.42**	.31**	.47**	.48**	-.22	-.21	-.20	-.31*	-.33	-.28**	-.23*	-.34**	-.31**
3.Mathematics		-	.10	.03	.10	-.02	-.17	-.02	-.17	-.12	-.09	-.08	-.13	-.12
4.Bonnardel 53			-	.45**	.81**	-.03	-.14	-.08	-.20*	-.27**	-.31**	-.10	-.30**	-.22*
5.Verbal Recomb.				-	.89**	.10	-.01	.04	-.05	-.13	-.16	.04	-.14	-.05
6.IQ					-	.04	-.09	-.03	-.17	-.25**	-.29**	-.04	-.28**	-.17
7.School Anxiety						-	.62**	.71**	.47**	.36**	.38**	-.84**	.45**	.73**
8.Sch. Depression							-	.79**	.51**	.44**	.55**	.91**	.59**	.84**
9.Self-efficacy								-	.59**	.44**	.54**	.94**	.61**	.87**
10.Procrastination									-	.70**	.61**	.59**	.85**	.79**
11.Acad.Dishonesty										-	.64**	.46**	.82**	.70**
12.Disruptive Beh.											-	.55**	.92**	.81**
13.SMQ Int. React.												-	.62**	.91**
14.SMQ Ext. React.													-	.89**
15.SMQ total score														-

Notes: GPA = General Point Average; * p < .05, ** p < .01, *** p < .001.

In the last hypothesis of the study a significant negative correlation between SMQ scores and IQ was predicted. Significant negative correlations were found only between the scores of Bonnardel 53 test and the external components of school maladjustment which are Procrastination (-.20), Academic Dishonesty (-.27) and Disruptive Behavior (-.31). The same correlational pattern is found at close levels for associations between IQ and external components of MSQ as well.

The factorial analysis, which was carried out for the six subscales of the questionnaire and summarized in Table 4 below, highlights the presence of a single common factor that covers 63.2% out of total variance. This is a very strong point for the unidimensionality of the analysed instrument. The discriminant of the intercorrelations matrix has a positive value,

KMO indicator as measure of sampling adequacy is excelent (0.85) and Bartlett's Test of Sphericity provides a very significative Chi-Square ($p < .001$). The values of communalities are very high, of over .55, and saturations score extremely high values as well (between .86 and .74) in the unique factor that is academic adjustment.

Exploratory factor analysis for the six SMQ subscales Table 4

	Communalities	Loadings
SA School Anxiety	.55	.74
SD School Depression	.69	.83
SE Self-efficacy	.74	.86
PR Procrastination	.67	.82
AD Academic Dishonesty	.55	.74
DB Disruptive Behavior	.60	.77
		63.20%

The first hypothesis of the present study predicted significant gender characteristics in the sense of some patterns that are specific to school maladjustment for boys (preponderantly external reactions) and girls (preponderantly internal reactions), which was not confirmed on the investigated school population.

One of this pilot study objectives was to determine the development of school maladjustment and academic performances in secondary school and high school cycles. Decreasing the average values of school performances from one school cycle to the other is clearly highlighted in the issue literature. It seems totally explainable as a result of gradual increase of school tasks difficulty and complexity along with entering high school. Therefore, it is expected that the level of school maladjustment, as it is operationalized by SMQ subscales and scales, should reveal an increase of their average scores from secondary school to high school. The results of these comparisons are summarized in Table 5 below. This table shows a significant decrease of school results that are expressed by GPA and the Romanian language averages in secondary school and high school, as it is expected. Though the mathematics average scores a decrease of 39 hundredths, this is not enough to become significantly statistic.

Concerning the MSQ scales, they highlight differentiated maladaptive behaviors, which is a strong ground in favor of validity of the internal reactions – external reactions distinction to academic stress. Indeed, the internal component of school maladjustment, which is predominantly emotional-affective (Anxiety and School Depression), seems to point out insignificant changes through passing from secondary school cycle to the high school one. On the contrary, the external components of school maladjustment – Procrastination, Academic Dishonesty and Disruptive Behavior – make extremely great progress in high school.

T tests for school grades and SMQ scales for secondary and high school students Table 5

	School level	N	Mean	SD	Difference	t test	p sig.
GPA*	Secondary	84	9.52	0.48	0.82	4.90	<.001***
	High school	46	8.69	0.69			
Romanian language	Secondary	84	8.90	0.88	0.90	3.40	.001***
	High school	46	8.00	1.23			

	School level	N	Mean	SD	Difference	t test	p sig.
Mathematics	Secondary	84	8.27	1.56	0.39	0.92	.360
	High school	46	7.87	1.61			
SA School Anxiety	Secondary	84	45.32	11.86	-0.57	0.21	.838
	High school	46	45.89	16.61			
SD School Depression	Secondary	84	47.89	18.10	-3.76	1.17	.246
	High school	46	51.65	16.60			
SE Self-efficacy	Secondary	84	46.07	16.15	0.31	.090	.930
	High school	46	45.76	20.75			
PR Procrastination	Secondary	84	36.04	13.65	-7.20	2.84	.005**
	High school	46	43.24	14.23			
AD Academic Dishonesty	Secondary	84	20.23	8.24	-7.21	5.06	<.001***
	High school	46	27.43	6.82			
DB Disruptive Behavior	Secondary	84	48.89	20.05	-12.24	2.85	.006**
	High school	46	61.13	25.11			
SMQ Internal Reactions	Secondary	84	139.29	41.38	-4.09	0.49	.620
	High school	46	143.30	49.39			
SMQ External Reactions	Secondary	84	105.15	37.77	-26.65	3.82	.001***
	High school	46	131.80	38.43			
SMQ School Maladjust.	Secondary	84	244.44	71.23	-30.67	2.24	.027*
	High school	46	275.11	80.56			

Notes: GPA = General Point Average; * p < .05, ** p < .01, *** p < .001.

School Maladjustment at this level seems to highly be the expression of some undesirable behaviors consisting in an open reaction of denial, opposition and disregard for the values that are promoted in school. Therefore, though the total MSQ scores express significant differences and show an obvious increase of maladaptive phenomenology, they must be analysed in a differentiated way, with a much stronger focus on external behavioral forms of maladjustment.

5. Conclusions and discussion

We can appreciate that all the objectives of the present study have been reached in various degrees. Thus, the newly created SMQ has a very high internal consistency, both on the whole and on its scales and subscales. The investigation of the instrument preliminary structure shows that the academic maladjustment was operationalized correctly by way of internal and external dimension of the reaction to academic stress, each of them with three distinct components. The internal component, of preponderantly emotional-affective nature, seems to hardly be highlighted in comparison with its external component that is preponderantly behavioral. The preliminary study shows that SMQ validates against both external criterion (school average in the precedent semester) and the students' level of intelligence. The evolution on school cycles suggests a distinct destine for the external factors of academic maladjustment. The hypothesis of gender differences when we speak about school maladjustment seems it is not confirmed. More valid conclusions will result when the study is extended on larger and representatively numerical populations, in relation

to which there will be designed tables of norms, but only after the final form of the questionnaire. The usefulness of the newly created SMQ will be confirmed only by its use in the activity of prevention, counseling and academic stress management. Its use for transcultural studies will also give a more accurate expression to culturally specific of measured constructs.

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