

## ПСИХОЛОГІЯ

УДК 159.9

I. F. Arshava, E. L. Nosenko

*Oles Honchar Dnipropetrovsk National University*

### PSYCHOLOGICAL MECHANISMS OF THE EFFECTS OF EDUCATIONAL EXPERIENCES ON THE PERSONALITY DEVELOPMENT

**Анотація.** Досліджено психологічні механізми впливу успішності навчання на розвиток особистості в різних аспектах, найбільш важливим із яких виявився рівень позитивності психічних станів, які суб'єкти навчання переживають у процесі навчальної діяльності.

У даному дослідженні на репрезентативній вибірці 172 студентів доведено, що існують статистично значущі відмінності між індивідуумами, які мають високі й низькі рівні академічної успішності, і їх стійкими диспозиційними рисами, психологічним благополуччям, рівнями тривожності і станами, які суб'єкти навчання переживають у процесі навчальної діяльності. Надійність результатів дослідження забезпечено різноманітням застосованих дослідних методів, у тому числі методу спостереження за змінами психічних станів. Дослідження відкриває новий підхід до імпліцитного оцінювання якості освіти через її відображення на показниках особистісного розвитку.

**Ключові слова:** досвід навчання, емоційні стани, диспозиційні риси, впевненість у собі, емоційна компетентність.

**Аннотация.** Изучены психологические механизмы влияния успешности обучения на развитие личности в разных аспектах, наиболее важным из которых оказался уровень позитивности психических состояний, которые субъекты обучения переживают в процессе учебной деятельности.

В данном исследовании на репрезентативной выборке 172 студентов продемонстрировано, что существует статистически значимые различия между индивидуумами, которые имеют высокие и низкие уровни академической успешности, и их стойкими диспозиционными чертами личности, психологическим благополучием, уровнями тревожности и состояниями, которые субъекты обучения переживают в процессе учебной деятельности. Надежность результатов исследования обеспечена разнообразием использованных методов исследования, включая метод регистрации реальных эмоциональных состояний субъектов.

Исследование открывает новый подход к импліцитному оцениванию качества обучения через его отражение в показателях личностного развития.

**Ключевые слова:** опыт учения, эмоциональные состояния, диспозиционные черты личности, уверенность в себе, эмоциональная компетентность.

#### **Problem identification**

The analysis of the latest research findings in the field of personality psychology, including the materials of the first World Conference of the recently organized World Association of Personality Psychology – WAAP (2013), shows that personality development across the lifespan has become one of the most significant fields of research, within which one can identify a wide variety of factors that determine personality development. Scholars focus personality development from different research perspectives among which educational experiences are rightly referred to fairly frequently.

R. Larsen (2013) and J. Jackson (2013), for instance, have found, on the basis of several longitudinal studies, that there exists a lawful relationship between favorable educational experiences (such as attending classes and fulfilling homework regularly) and the personality trait development both in adolescence and young adulthood. Particularly noteworthy are their findings, showing that attending classes regularly affects not only the development of the trait of conscientiousness, which seems quite reasonable, but also reduces the level of neuroticism, which is a very fascinating finding in view of the genetic roots of this trait.

Interesting findings which throw light on the positive role of educational experiences and academic records on the personality development were obtained by Alvarenga and Flores-Mendoza (2013), who showed on a sample of 124 participants between 18 and 70 years ( $M=30,19$ ;  $SD=10,22$ ), observed in very specific settings – prison institutions, that there was a significant difference between the test groups of participants with incomplete or complete *primary* school education as compared against the individuals who had complete and incomplete *secondary* education. The test groups appeared to differ in the levels of the psychopathic personality traits, represented by factor 1 (affective problems) and factor 2 (conduct disorders) at  $t(118) = -2.114$ ,  $p < 0.032$ . These results convincingly prove the role of educational experiences in the personality development since the authors controlled in their study the level of general intelligence of the participants and found no correlations between the intelligence measures of the groups with different academic experiences and the two different dimensions of psychopathic personality (affective problems and conduct disorders), mentioned above ( $r = -0.027$  – for intelligence and factor 1; and  $r = 0.006$  – for intelligence and factor 2). These results suggest that while intelligence per se seems not to be related to the psychopathic trait, differences in educational experiences appear to be indicative of it.

### **The objective of the present study**

The main purpose of the current study is to present evidence of the psychological mechanisms of the effect of educational experiences on the personality development and to demonstrate the key role of the emotional attitude of the learners to the process of knowledge acquisition and themselves as the subjects of cognition in facilitating the innovative effect of education on the personality.

It is reasonable to assume that the psychological mechanisms of the effects of educational experiences on the personality are not just cognitive. It is not the duration of having educational experiences per se that might bring about the development of the personality, but the consequential outcomes of education acquisition, that change the attitude of the individuals to themselves as the subjects of cognition.

*The likely psychological mechanisms of the changes of the learners' attitude to themselves*

There exists a continuous flow and a covert exchange of information between the individual's *self* and the stream of *experience* involved in the process of learning. Individuals perceive, interpret and assess what they encounter in the course of knowledge acquisition. If they succeed in learning, they acquire a *positive academic self-concept*, if do not – *poor academic self-concept* makes them feel dissatisfied with themselves. There are a sufficient number of research findings which show that poor academic self-concept undermines self-efficacy, thwarts achievement and can become devastating in learning situations (Arijesuyo, 2013). The researchers mention that it is possible to assist students who experience social and cognitive deficits to gain self-confidence and, thus, restore positive self-perception, hope, sustained struggle towards self-actualization and goal directed behavior.

Since practically every person in a civilized society is expected to spend not less than 10 (15) years of one's life acquiring education (the ten years of which are required for compulsory education at that), it is very important that the learners should like their studies and experience subjective well-being in the course of knowledge acquisition.

Scientists who study the phenomenon of subjective well-being (Diener et al, 2002) assume that an essential ingredient of the good life is that the person herself

(himself) likes her life. And this condition is not unattainable. As Aristotle claimed 2300 years ago, “there is no other more pleasurable experience than the acquisition of the well-structured knowledge”. Enjoying one’s studies is both evolutionary expedient and individually significant, since the learners are to leave schools not only cognitively prepared for fulfilling the adult-life social roles, but having the developed personalities.

The significance of the perceived academic self-competence as a precursor of not only successful learning, but also of the positive personality development has been vividly demonstrated recently in studies of the links between the phenomenon of self-harm, such as cutting and scratching in adolescent non-clinical population and perceived self-competence (Bartosova et al, 2013). A cross-sectional survey, using an anonymous self-report questionnaire, the Self-Harm Inventory and Perceived Competence Scale for children was carried out by the above cited authors with 1,740 adolescents (age 11-16, mean 14). Children who self-harmed showed lower levels of perceived self-competence on the scales of school or academic performance, physical competence, reflected through abilities at sports and outdoor games, physical appearances and behavior. Cutting and scratching appeared the most widely spread type of physical self-harm and was found to be the most connected to perceived low self-competence.

In our own empirical research on the phenomenon of *self-handicapping*, carried out under our supervision by a Ph.D. student Dina Nosenko (Arshava, Nosenko, Nosenko, 2012; 2013), we have found on a sample of college students that self-handicapping as a specific type of behavior, connected with “imposing an obstacle to one’s successful performance in a particular situation in order to provide an excuse for an anticipated failure” (Oxford Dictionary of Psychology, 2009), occurs, when the person has low self-esteem and low belief in one’s own self-efficacy.

So, in fact, this type of behavior is very much similar, as far as the psychological mechanisms of it are concerned, to physical self-harming observed in young adolescents with low perceived self-confidence levels. We conceptualized the phenomenon of self-handicapping as a maladaptive type of proactive coping behavior (Nosenko, Arshava, Nosenko, 2014), which appeared to negatively correlate with adaptive forms of proactive coping behavior as well as with the problem-focused coping strategy. At the same time it positively correlated with emotion-focused coping, which confirms its links with the so-called “sensitive ego”. These findings suggest that the effects of educational experiences on personality development are deeply rooted in the interplay of a number of motivational, cognitive appraisal and affective process.

Research in educational psychology has shown that positive academic self-concept predicts many important academic outcomes: academic achievements, educational aspirations and others (Marsh & Craven, 2006). In the review of studies, relating self-concept to academic achievement, Byrne (2002) showed that self-concept and self-esteem are correlated positively to achievement.

In the summary of research findings, presented by Herbert W. Marsh (2008), a comprehensive analysis of a considerable amount of data has set the stage for interpreting the relationships between the personality achievements and self-concept.

Studies by Parker et al (2005) on US and Canadian 1-st year students showed one more significant aspect of relationships between personality development and educational achievements. The authors proved that academically successful students scored higher on emotional intelligence (EI), than their unsuccessful counterparts.

*The mechanism of the formation of EI as a consequential outcome of the equality education*

It has been proved in a number of studies that frequently experienced positive emotional states facilitate the development of EI, which can be a valid indicant of the quality of education. Parker (2006) examined the relationship between academic retention and EI in the first-year students. Results showed that those, who persisted in studies, were significantly higher than those, who withdrew, on most of EI dimensions.

These findings contrast with those of earlier studies (Barchard, 2003), in which a mixture of *part-time* and *full-time* students were involved. Weak or non-existent relationship between EI and academic achievements, reported for the mixed population of students, may be interpreted, in our opinion, *in favor* of the trait-nature of EI and its capability to reflect the level of satisfaction of the students with their activities and learning outcomes. Since part-time students have much less opportunities to experience academic success than full-time students, their emotional states may appear more negative. That is why the overall results of the mixed groups of students differ from those of the homogeneous groups.

There were studies in which, based on the GPA, students were placed into one of the 3 groups: “successful”, “middle” and “less successful”. It was found that the successful group scored significantly higher than the other two groups on the EI dimensions, interpersonal adaptability and stress management (Parker et al, 2004).

#### *Method*

The present study was a part of a larger study involving a sample of 172 participants – undergraduate students of the Medical National Academy of Dnipropetrovsk, intended to examine an adaptive and stress-protecting function of emotional intelligence as a new dynamic integral personality trait.

#### *Sampling strategy and resulting sample*

A sample of 172 first and second year undergraduate students (aged 18-22 years, equal number of males and females) was clustered into three groups (K-means algorithm) on their GPA scores for 2 years and a number of the personality trait and state variables, indicative of the types of emotional experiences, specific to the students in educational settings and reflecting their attitudes to themselves as the subjects of knowledge acquisition and educational interaction.

The following 16 analogues of independent variables were identified for clustering the sample into nonequivalent groups (differing on the chosen variables): 1) GPA (for 2 academic years); 2) Psychological well-being (cumulative value of six scales); 3) Ego-control; 4) Ego-resiliency; 5) Ambiguity intolerance; 6) Extraversion; 7) Agreeableness; 8) Consciousness; 9) Neuroticism; 10) Openness to experience; 11) State anxiety; 12) Trait anxiety; 13) Problem-focused coping; 14) Avoidance; 15) Emotion-focused coping; 16) Unified coping coefficient, calculated by the formula  $K=P/E*A$ , where P – problem-focused coping scores; E – emotion-focused scores; A – avoidance scores. The higher is the K – coefficient, the more adaptive is the resultant effect of coping strategies tendencies.

#### *Data tools*

Measures included: Psychological Well-being Scales (Ryff, 1989, adapted by Karskanova, 2011), Ego-control and Ego-resiliency self-report scales (Jack and Jeanne Block, 1980, adapted by the authors of the paper), Ambiguity Intolerance Inventory (Norton, 1970), Big-five taxonomic Inventory by L. Goldberg, adapted to the Ukrainian culture L.F. Burlachuk and D.K. Korolev; State-Trait Anxiety Inventory (Spielberger, adapted by Y. Khanin); Coping Inventory for Stressful Situations (Endler and Parker, 1990), Flugel “palm-fliers” (adapted by Vilunas).

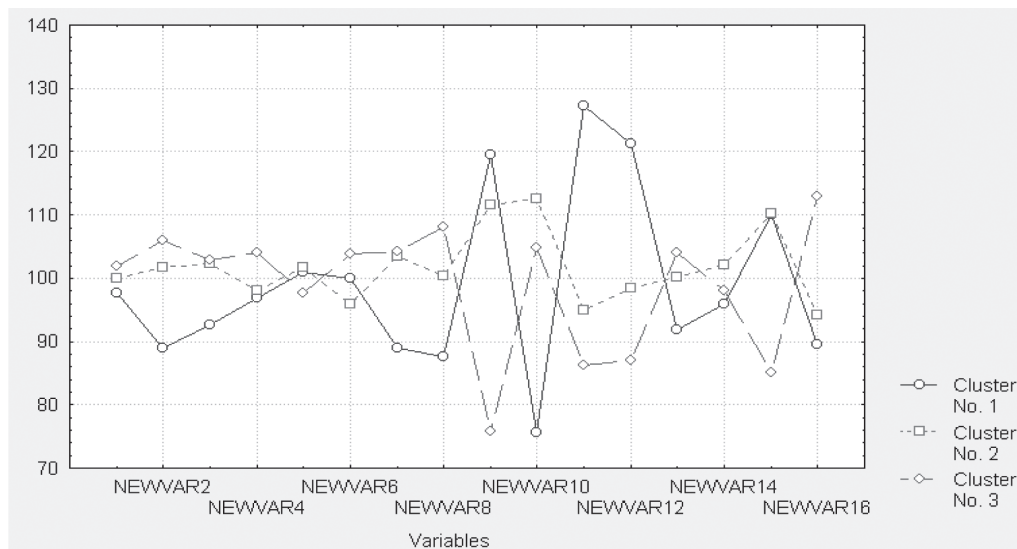
### Procedure

The resultant sample included clusters of participants split into the “opposite” samples with significant intercluster differences in the means of all the variables.

The participants, chosen in the above described manner, at the second stage of research were asked to register their emotional states with the help of Flugel’s “palm-fliers” (1925), a sort of the emotional diary in which they registered the emotions experienced during 4-days in the educational settings, specifying the antecedents of the emotions, the types of the situations, in which they occurred, and their intensity assessed (on a 10-point Likert scale).

### Findings and Conclusion

Clusterization of the sample into three groups (see Fig.1) yielded two “opposite” clusters: (1 and 3).



**Fig. 1. The results of clusterization of the sample of college-level students on their GPA and personality variables**

Cluster 1 included 37 participants who were characterized respectively by the lowest mean values of variables (1-4; 6-8, 10, 16) and the highest absolute values of variables (5, 9, 11, 12, 15). Cluster 3 included 59 participants with the highest mean values of variables (1-4; 6-8, 10, 16) and the lowest values of variables (5, 9, 11, 12, 15).

As shown in Fig.1, cluster 1 (with the lowest GPA mean values) is characterized by the lower values of psychological well-being; ego-control, ego-resiliency; extraversion, agreeableness, consciousness, openness to experience and unified coefficient of coping strategies efficacy and the higher values of neuroticism, state and trait anxiety; emotion-focused coping. The opposite cluster 3 appeared to be orthogonal to cluster 1.

Table 1 shows statistically significant differences (by t-test) between the mean values of all the Big-Five personality variables.

Table 1. Mean values of the dispositional components of EI

Clusters	Mean values of trait variables				
	Extraversion	Agreeableness	Conscientiousness	Neuroticism	Openness to experience
№1 (N=37) (lower GPA)	21,6	28,5	24	25,2	21,7
№3 (N=59) (higher GPA)	23,2	33,5	29,6	16,1	30,4
Significance of differences by t-test:	p<0.05	p<0.05	p<0.05	p<0.01	p<0.01

These personality variables were simultaneously reported by Petrides and Furnham (2001), British specialists in the Emotional intelligence investigation and by one of the authors of this paper (Nosenko, Kovriga, 2001) to represent the dispositional components of EI, which was lately conceptualized as an integral dynamic contextualized trait (Austin et al, 2008).

Table 2 demonstrates significant differences in the phenomenological characteristic features, which reflect ego-control, ego-resiliency and ambiguity intolerance of the participants.

Table 2. Mean values of the phenomenological characteristic features

Clusters	Mean values of trait variables		
	Ego-control	Ego-resiliency	Ambiguity Intolerance
№1 (N=37) (lower GPA)	89,4	38,8	276,3
№3 (N=59) (higher GPA)	96,4	43,1	267,5
Significance of differences by t-test	p<0.05	p<0.05	p<0.05

As evident from Table 3, the participants of the group with higher GPA scores (cluster 3) have higher scores on Ego-control and Ego-resiliency. As the researchers of Ego-control/Ego-resiliency Model Stanely J. Huey, Jr and John R. Weisz (1997) point out, ego-control and ego-resiliency describe the individuals as capable to adapt to external restrictions and constraints (Block, Block, 1980), resourceful in adapting to novel situations. There are also differences between the participants of different clusters in the degrees of ambiguity intolerance. Lower level of intolerance is specific to the individuals who are more creative and easier adapt to novel situations.

As shown in Table 3, participants, who have higher GPA scores are characterized by higher level of psychological well-being, lower levels of anxiety (both-trait and state ones), and more adaptive coping strategies.

Table 3. Inter-cluster differences in the sensitivity to emotional stimuli that are consciously perceived by the individuals

Clusters	Mean values of trait variables						
	Psychological well-being (an overall value)	Anxiety		Coping strategies			
		1	2	3	4	5	6
№1 (N=37) (lower GPA)	179	2,5	2,5	46,0	42,2	39,4	0,57
№3 (N=59) (higher GPA)	212,4	1,7	1,8	52,1	43,3	30,7	0,71
Significance of differences by t-test :	p<0.01	p<0.05	p<0.05	p<0.05	p<0.35	p<0.01	p<0.05

List of variables: Anxiety: State (1); trait (2); Coping strategies: problem-focused (3), avoidance (4); emotion focused (5), coping efficacy coefficient K (6)

Table 4 presents the results of the Experience Sampling. It shows differences in the amount of the positive and negative emotions registered by the participants of different clusters during four days continuously in the educational settings.

**Table 4. Results of the Experience Sampling: frequency and intensity of experiencing emotions of different signs and modalities**

Clusters	Percentage of situations in which positive emotions were experienced	Percentage of situations in which negative emotions were experienced	Mean intensity of positive emotions (by a 10-point scale)	Mean intensity of negative emotions (by a 10-point scale)
№1 (N=37) (lowest GPA)	51%	49%	6,3	6,1
№3 (N=59) (higher GPA)	64%	36%	6,3	5,3
Significance of differences by $\phi^*$ Fisher criterion	$p < 0.05$	$p < 0.05$	-	$p < 0.05$

The participants with higher GPA levels reported (with the help of the method of “palm-fliers”) statistically higher numbers of positive emotions and lower levels of negative emotions.

The verbal comments of the members of different clusters as to the antecedents, which caused their emotions are particularly noteworthy. The participants of the cluster with higher GPA scores (cluster 3) ascribed their positive emotions to the assessment of their knowledge as “excellent”, to their ability “to demonstrate oneself as a knowledgeable person”, to the “anticipation of some positive developments in life”, “mastering new skills”, “winning a game of chess” etc.

The participants of the cluster with the lower GPA scores, on the contrary, experienced positive emotions when “learned that the class was cancelled” or “when one escaped being asked by the instructor a question, for which she/he did not know the answer, etc.

The empirical findings have confirmed the major hypotheses of the research that favorable educational experiences result in the formation of the dispositional components of emotional intelligence in the successful learners, stimulate the experiencing of positive emotions, which reflect the satisfaction of the learners with themselves. Positive cognitive emotions appeared to be associated with the higher levels of resiliency of the learners, their psychological well-being, self-acceptance, academic self-confidence.

This allows claiming that favorable educational experiences do play an important role in the development of emotional competence which can be used as a new personality-mediated measure of education efficacy.

The research findings open up new prospects for assessing the role of intellectual activity in enhancing mental health and subjective well-being in the course of pursuing life-long learning.

### References

- Alvarenga, M.A., Flores-Mendoza, C. (2013), “Checklist for Bullying Behavior in the school environment (CBB): developing a measure for assessment by teachers”. *Abstract book of the 1st World Conference on Personality*, p. 38.
- Arijesuyo, A.E. (2013), “Psycho-personality instigators of poor academic self-concept: effect of reality therapy as an adjunct correctional counseling”. *Abstract book of*

- the 1st World Conference on Personality*, p. 38.
- Arshava I., Nosenko E., Nosenko D. (2013), "Personality-mediated differences in coping behavior as precursors of the subjective well-being". *European Scientific Journal*, Special edition, Vol. 2, pp. 548-558.
- Austin, E. J., Saklofske, D. H., & Egan, V. (2005), "Personality, well-being and health correlates of trait emotional intelligence". *Personality and Individual Differences*, Vol. 38, pp. 547-558.
- Austin, E.J., Parker, J.D.A., Petrides, K.V. (2008), "Emotional intelligence». In G.J.Boyle, G.Matthews, D.H.Saklofske (Eds.). *Handbook of Personality Theory and assessment*, SAGE Publication Ltd, Los Angeles, London, New Delhi, Singapore, pp. 576–569.
- Barchard, K. A. (2003), "Does emotional intelligence assist in the prediction of academic success?" *Educational and Psychological Measurement*, Vol. 63 (5), pp. 840–58.
- Bartošova, K., Eeroak, M., Hrubá, V., Burešova, I., Klimusova, H. (2013), "Perceived self-competence in adolescent children who self-harm" *Abstract book of the 1st World Conference on Personality*, p. 41.
- Block, J., Block, J.H. (1980), The role of ego-control and ego-resiliency in the organization of behavior. *Development of Cognition, Affect and Social Relations*, Vol. 13, pp. 39-101.
- Boyle, G.J., Matthews, G., & Saklofske, D.H. (2008), "Personality theories and models: an overview". In Boyle, G.J., Matthews, G., & Saklofske, D.H. (Eds). *Handbook of personality theory and testing*, Personality theories and models, Thousand Oaks, CA: Sage.
- Byrne, B. M. (2002), "Validating the Measurement and Structure of Self-Concept: Snapshots of Past, Present, and Future Research". *American Psychologist*, Vol. 57, pp. 897-909.
- Flugel, J.C. (1925), "A quantitative study of feeling and emotion in everyday life". *British Journal of Psychology*, Vol. 9, pp. 318-355.
- Goldberg, L. (1990), An alternative description of personality: The Big Five structure *Journal of Personality and Social Psychology*, Vol. 59, pp. 1216-1229.
- Huey, S. J., Jr., & Weisz, J. R. (1997), "Ego Control, Ego Resiliency, and the Five-Factor Model as Predictors of Behavioral and Emotional Problems in Clinic-Referred Children and Adolescents". *Journal of Abnormal Psychology*, Vol. 106 No. 3, pp.404-415.
- Jakson, J.J. (2013), "The effects of educational experiences on personality trait development". *Abstract book of the 1st World Conference on Personality*, p. 77.
- Larsen, R.J. (2013), "Personality and emotion regulation in every life". *Abstract book of the 1st World Conference on Personality*, p.88.
- Marsh, H. W. (2008), "A Multidimensional, Hierarchical Model of Self-Concept: An Important Facet of Personality". In Boyle, G.J., Matthews, G., & Saklofske, D.H. (Eds). *Handbook of personality theory and testing*, Personality theories and models, Thousand Oaks, CA: Sage, pp. 447-469.
- Marsh, H.W., Hau, K.T. (2003), "Big fish little pond effect on academic self-concept: A cross-cultural (26 country) test of the negative effects of academically selective schools". *American Psychologist*, Vol. 58(5), pp. 364-376.
- Marsh, H.W., Craven, R.G. (2006), Reciprocal effects of self-concept and performance from a multidimensional perspective: Beyond seductive pleasure



- and unidimensional perspectives. *Perspectives on Psychological Science*, Vol. 1 (2), pp.133-63.
- Marsh, H.W. (2007), *Self-concept theory. Measurement and Research into Practice: The role of Self-concept in Educational Psychology*. Leicester, UK: British Psychological Society.
- Mayer, J.D. and Salovey, P. (1995), "Emotional intelligence and the construction and regulation of feelings". *Applied and Preventive Psychology*, Vol. 4, pp. 197-208.
- Nosenko, D., Arshava, I. & Nosenko, E. (2014), "Self-handicapping as a coping strategy: approaches to conceptualization", *Advances in Social Science Research Journal*, Vol. 1(3), pp. 157-166.
- Nosenko, E., Arshava, I., Nosenko, D. (2013), "Emotional stability and positive values as the major personality dimensions of the subjective well-being". *Third World Congress on Positive Psychology*, Westin Bonaventure, Los Angeles, CA, USA, June 27-30, p.120.
- Nosenko, E., Arshava, I., Arshava, I. (2011), "Accounting for the Regularities of the Expert's Knowledge Structure in Teaching Psychology to the College-Level Students". *Abstracts of the 12<sup>th</sup> European Congress of Psychology*, p. 1744.
- Nosenko, E., Kovriga, N. (2001), "Trait-oriented approach to operationalizing emotional Intelligence". *Abstracts of the 7<sup>th</sup> European Congress of Psychology*. Great Britain, London, July 1-6, p. 211.
- Parker, J. D. A. et al. (2005), "Academic achievement and emotional intelligence. Predicting the successful transition from high school to University". *Journal of First Year Experience and Students in Transition*, Vol. 17 (1), pp. 67–78.
- Parker, J. D. A., Hogan, M. J., Eastabrook, J. M., Ohe A. and Wood, L.M. (2006), "Emotional intelligence and student retention. Predicting the successful transition from high school to university". *Personality and Individual Differences*, Vol. 41(7), pp. 329-336.
- Parker, J. D. A., Summerfeldt, L. J., Hogan, M. J., & Majeski, S. A. (2004), "Emotional intelligence and academic success: Examining the transition from high school to university". *Personality and Individual Differences*, Vol. 36, pp. 163-172.
- Petrides, K.V., Furnham, A. (2001), "Trait emotional intelligence: psychometric investigation with reference to established trait taxonomies". *European Journal of Personality*, Vol. 15, pp. 425-448.
- Ryff, C. (1989), Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, Vol. 57, pp. 1069-1081.
- Vilunas V. K. (1997), "Empirical characteristics of the emotional life" ["Empiricheskie kharakteristiki emotsionalnoy zhizni"]. *Psikhologicheskij jurnal – Psychological journal*, No 3, pp. 26-34.

Надійшла до редколегії 15.07.2014