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THE ILLUSION OF KNOWING FROM PERSPECTIVE OF METACOGNITIVE MONITORING ACCURACY OF EDUCATIONAL ACTIVITY OF UNIVERSITY STUDENTS

INTRODUCTION

Metacognitive monitoring takes one of the main places among metacognitive processes in the educational activity. Being regulatory aspect of metacognition, it is essential for the effectiveness of educational activities, because it allows the subjects to track the processes and the results of any cognitive problem and thus to assess and adjust their own knowledge. Some factors of metacognitive monitoring reliability are studied by such scholars as A. Koriat (1993), R.H. Maki and S.L. Berry (1984), T.O. Nelson and L. Narens (1990), J. Metcalfe (1998), B.D. Pulford (1996), Ye.Yu. Savin and A.Ye. Fomin (2013), and others.

The concept of the illusion of knowing is used to refer to differences between the individual subjective perceptions of the correctness of understanding or remembering information and actual progress of cognitive goals. We consider the illusion of knowing as metacognitive monitoring error resulting from overconfidence in subjective knowledge that does not meet the objective success of a task as well as the illusion of not knowing which is subjective underconfidence. Key features of the peculiarities of

the illusion of knowing as a metacognitive phenomenon are analyzed in researches such as A.M. Glenberg, A.C. Wilkinson, and W. Epstein (1982), D.K. Eakin (2005), A. Koriat (1998), and others. The study of the functioning of the illusion of knowing in metacognitive monitoring and its influence on the effectiveness of educational activity is studied by A.M. Glenberg, A.C. Wilkinson, and W. Epstein (1982), A. Koriat (1993, 1998), D.K. Eakin (2005), J. Metcalfe (1998), and others.

As the problem of knowledge assessment is a common phenomenon in the modern educational system, the illusion of knowing acts as a conceptual problem in the educational process. Common adverse effects of the illusion of knowing in the studying process of the university students are their inadequate self-assessments of learning outcomes; metacognitive incompetence on the level of their knowledge, skills, strategies, etc.; failures to assess the level of actual understanding of educational material; inability to distinguish between illusory and adequate knowledge; inefficient allocation of time and attention on the study material; inadequate efforts made while studying, etc.

Taking into account a large number of metacognitive monitoring studies, the question of the connection of metacognitive monitoring objectivity and the productivity of educational activity of university students is not fully clarified, and there is also a need to investigate age and gender peculiarities of the illusion of knowing. Also, despite the identification of many factors that lead to the occurrence of the illusion of knowing in metacognitive monitoring of students' educational activities, their comprehensive experimental study was not carried out.

That's why we set a goal to clarify the illusion of knowing in the educational activity. To do this we need to describe the analysis results of the illusion of knowing study in terms of reliability of metacognitive monitoring accuracy factors in university educational activity. These factors are personal (educational motivation, self-confidence, reflexivity, etc.), cognitive (self-efficacy, implicit theories of personality, etc.) and metacognitive (metacognitive knowledge, metacognitive activity, and metacognitive awareness) characteristics, individual psychological differences (gender differences and age peculiarities) (Avgustiuk, 2015). Moreover, we aim to find out all the possible correlations between specified psychological characteristics, analyse their impact on the occurrence of the illusion of knowing.

METHODOLOGY OF RESEARCH

In general, the study was conducted in two stages: diagnostic stage and stage of the laboratory experiment. At the diagnostic stage 262 students of different departments and specialties of the National University of Ostroh Academy (Ukraine) (192 female and 70 male students, age – 17-22, voluntary participation) were asked to answer a question-

naire aimed at ascertaining psychological characteristics of students which according to the results of theoretical analysis are related to the reliability of metacognitive monitoring. These are personal (educational motivation, self-confidence, reflexivity), cognitive (representation of the 'fixed' or 'changeable' intellect, self-efficacy) and metacognitive (metacognitive awareness, self-esteem of metacognitive knowledge and metacognitive activity) characteristics of students.

For the diagnosis of personal characteristics of students we used such methods as method of diagnosing educational motivation (Ilyina, 2003) that aims to study the structure of motivation in the university educational activity; method of confidence diagnosis (Romek, 1998) that was used for evaluation of personal confidence seen by the author as generalized method of positive self-esteem manifested in positive self-assessment of human skills and abilities (subjectively important) in comparison to the necessity to set goals and meet needs; method of reflexivity diagnosis the main aim of which is study of reflexivity as psychological notion (Karpov, Skitiaeva, 2005).

For the diagnosis of the chosen cognitive characteristics of students there was used such method as self-efficacy assessment test (Schwarzer, Jerusalem, Romek, 1996). The questionnaire is used to study self-efficacy – confidence rights of human potential ability to organize and carry out activities needed to achieve a certain goal. Also self-efficacy aims to help to understand the level of productive integration of cognitive, social and behavioural components for optimal strategies implementation in different life situations. One more method used in the study was the method of implicit theories diagnosis (according to Dvek's questionnaire) (Kornilova *et al.*, 2008). The attention in our study was drawn in particular to the criterion of the subject's knowledge about fixed or changeable intelligence as well as about the implicit theory role in an intellectual development. Empirical reference of the level of students' knowledge was studied with the help of generalization of their educational achievements during semester.

To diagnose students' metacognitive characteristics there was used a diagnosis method of metacognitive involvement in educational activities (metacognitive awareness) (Schraw, Dennison, 1994). The results received by this method act as reviewer degree of formation of metacognitive monitoring skills of cognitive activity in the educational process. Moreover, we used a method of diagnosis of metacognitive knowledge and metacognitive activity (Kashapov, 2012). Metacognitive knowledge is understood as human knowledge about the means of obtaining and processing information in their own learning processes, knowledge about the types and content of the tasks and requirements for their implementation, knowledge about metacognitive strategies in problem solving. Metacognitive activity is represented as the process of obtaining and selecting information, control, change and metacognition planning. Also at this stage the test sample was carried out to research the normal distribution of equivalence and studied characteristics.

At the stage of the laboratory experiment as a stimuli material served 6 different texts (scientific, journalistic and fictional) of different volume (larger text volume – 25-30 sentences and smaller text volume – 10-15 sentences), 18 pairs of statements and 18 pairs of words in Ukrainian needed to be memorized. Students performed prospective metacognitive subjective judgments of learning about confidence (JOLs) and judgments about the number of correct answers (aJOLs), as well as similar retrospective metacognitive judgments of both types (RCJs and aRCJs). Because of proper calibration procedure there were defined average indicators of the illusion of knowing as an overconfidence and the illusion of not-knowing as an underconfidence. In general the experiment consisted of the following stages: information memorizing phase, phase of the evaluation of the information memorizing effectiveness, destructor phase serving as the possibility for the researched to have rest doing non-assessed activity, task performance phase, and phase of evaluation of the task performance effectiveness.

All the data were processed by a computer program *IBM SPSS Statistics 20* and the calculations were made using *Excel* program. Data processed by means of mathematical and statistical methods such as *ANOVA* analysis (to find statistically significant dependencies/differences), *T*-test (to find statistically significant differences), the correlation coefficient Goodman-Kruskal (to evaluate metacognitive monitoring accuracy judgments), Spearman rank of correlation (to determine the closeness of relationships between variables), Pearson linear correlation (to measure the degree of linear relationship between two variables), *O/U* index (to estimate over/underconfidence), calibration index (to estimate calibration level), etc.

RESULTS OF RESEARCH

As it was said in the Introduction, we regard the illusion of knowing as metacognitive monitoring error resulting from overconfidence in subjective knowledge that does not meet the objective success of a task as well as the illusion of not knowing which is subjective underconfidence. That's why metacognitive monitoring errors we aimed to find (overconfidence as the illusion of knowing and underconfidence as the illusion of not knowing) were determined as the difference between subjective assessments of the accuracy of retrieval (metacognitive judgments rating) and the observed reproduction (relative share results according to the total number of tasks). The larger the difference in the results is, the greater is the manifestation of the illusion of knowing, and vice versa (Gigerenzer *et al.*, 1991; Ward, Clark, 1989).

The resulting performance in all prospective and retrospective judgments of the learned tasks was analyzed by the three-level scale from -1 to +1: from -1 to - .14 – the level of underestimation or lack of self-knowledge (the illusion of not knowing); from

- .15 to + .14 – adequate level of monitoring accuracy (the illusion of knowing is negligible or absent); from + .15 to +1 – level of overconfidence in knowledge (the illusion of knowing). An adequate level average value in the range from - .15 to + .14 was chosen with reference to the available in the literature data (Koriat *et al.*, 1980; Jönsson *et al.*, 2005; Brenner *et al.*, 1996) studying overconfidence. In particular, F.U. Jönsson *et al.*, (2005) found the mean level of *O/U* index (the results of 95% of the surveyed), which is significantly different from zero (*O/U* = .14; *SD* = .17).

While coping with the tasks of our study students performed prospective metacognitive subjective judgments of learning about confidence (JOLs) and judgments about the number of correct answers (aJOLs), as well as similar retrospective metacognitive judgments of both types (RCJs and aRCJs). Because of proper calibration procedure average indicators of the illusion of knowing were defined as excessive overconfidence and underconfidence judgments. The results are shown in Table 1.

Table 1. The illusion of knowing in metacognitive judgments of learning

Judgments	Metacognitive monitoring adequacy level	M (mean)	Number of participants (%)
aJOLs	Accurate metacognitive monitoring	.06	50%
	Underconfidence (the illusion of not knowing)	- .37	14.1%
	Overconfidence (the illusion of knowing)	.25	35.9%
aRCJs	Accurate metacognitive monitoring	.01	61%
	Underconfidence (the illusion of not knowing)	- .33	14.8%
	Overconfidence (the illusion of knowing)	.24	24.2%
JOLs	Accurate metacognitive monitoring	.02	40.6%
	Underconfidence (the illusion of not knowing)	- .27	28.1%
	Overconfidence (the illusion of knowing)	.27	31.3%
RCJs	Accurate metacognitive monitoring	- .02	50%
	Underconfidence (the illusion of not knowing)	- .24	25%
	Overconfidence (the illusion of knowing)	.25	25%

Source: Avgustiuk, M.M. (2016). The illusion of knowing in metacognitive monitoring of the educational activity of university students. *PhD Thesis in Psychological Sciences, The National University of Ostroh Academy,* 1-316.

In general, the results of the laboratory stage of the study showed that 59.4% of participants committed errors when making prospective JOLs, and an overwhelming number of them showed overconfidence in the correctness of the task performance –

31.3%. 50% of the students committed metacognitive monitoring errors in the course of prospective aJOLs, and 35.9% showed overconfidence in the correctness of the task performance.

At the same time the averages of the illusion of knowing are slightly different in JOLs (M = .27) and in aJOLs (M = .25). The number of the investigated students who sowed the illusion of knowing is also not significantly different. It means that before task performance overconfidence is not significantly dependent on the type of the question.

However, in the retrospective RCJs, compared with prospective judgments of this kind (JOLs), there is a decrease (6.3%) in the proportion of overconfident students in task accuracy, and in retrospective aRCJs as to compare with prospective judgments of this kind (aJOLs) the decrease is by 11.7%. The average value of overestimation virtually remains unchanged.

The most accurate are aRCJs – 61% of surveyed students showed adequate accuracy level of metacognitive monitoring (MaRCJ = .01). Unlike JOLs and RCJs, where students demonstrated almost equal proportions of overconfidence and underconfidence, in their aJOLs and aRCJs the proportion of students who overestimated the number of correctly performed tasks is significantly higher in comparison with those who did underestimation. However, among those who underestimated the number of correctly performed tasks, the indicators of the illusion of not knowing appeared to be the highest (MaJOL = - .37 and MaRCJ = .33).

The illusion of knowing as metacognitive monitoring error is most often seen in prospective aJOLs (35,9% of the students). However, before tasks performance among those students who underestimate the possible number of correctly performed tasks, the degree of the manifestation of the illusion of not knowing is the highest (MaJOL = - .37). After tasks performing metacognitive monitoring judgments accuracy increases.

By using T-test for paired samples it was found that the rates of errors in metacognitive judgments differ in a statistically significant level between JOLs and aJOLs (t (56) = 2.09, p ≤ .05), between aRCJs and RCJs (t (56) = 2.23, p ≤ .05), and between JOLs and RCJs (t (56) = 2.09, p ≤ .05), in other words, between different judgments (concerning general judgments of learning about confidence and judgments of learning about answers) before and after tasks performance. After the tasks performance the accuracy of metacognitive monitoring grows: the students who made mistakes in monitoring reduced the proportion of those showing the illusion of knowing, but also reduced the level of their underconfidence.

To sum up, the investigation of the illusion of knowing as metacognitive monitoring error shows that the most accurate are retrospective judgments of learning about the number of correct answers (aJOLs) – 61% of surveyed students showed adequate level of monitoring (MaRCJ = 0.01). The illusion of knowing is most often seen in prospective judgments of learning about the number of correct answers (aJOL) (35.9% of

subjects showed this error). However, before performing tasks among those students who underestimate the possible number of correctly performed tasks, the degree of manifestation of the illusion of not knowing is the highest (MaJOL = - .37).

As a result of the empirical study there were found correlations between the studied personal, cognitive, and metacognitive psychological characteristics of students (the results of the correlations are shown in Table 2). Thus, educational motivation is positively correlated with self-confidence (r = .17, p = .05) and reflexivity (r = .43, p = .01). In addition, there is a correlation between educational motivation and metacognitive awareness (r = .31, p = .01), metacognitive knowledge (r = .22, p = .05) and metacognitive activity (r = .26, p = .01).

Table 2. Correlation analysis results in personal, cognitive, and metacognitive psychological characteristics

	Educational motivation	Self-confidence	Reflexivity	Implicit theories of intellect	Self-efficacy	Metacognitive awareness	Metacognitive knowledge	Metacognitive activity	aJOL	aRCJ	JOL	RCJ
Educational motivation		.17*	.34**			.31**	.22*	.26**				
Self-confidence	.17*				.44**	.27**	.31*	.19*		.32**		.24*
Reflexivity	.34**					.35**						
Implicit theories intellect					.24**							
Self-efficacy		.44**		.24**		.34**	.26**					
Metacognitive awareness	.31**	.27**	.35**		.34**		.36**				.21*	.23**
Metacognitive knowledge	.22*	.31*			.26**	.36**						
Metacognitive activity	.26**	.19*							.18*			
aJOL								.18*				
aRCJ		.32**										
JOL						.21*						
RCJ		.24*				.23**						

Note: * – p = 0,05; ** – p = 0,01.

Source: Avgustiuk, M.M. (2016). The illusion of knowing in metacognitive monitoring of the educational activity of university students. *PhD Thesis in Psychological Sciences, The National University of Ostroh Academy,* 1-316.

Self-confidence, in addition to the correlations with educational motivation, positively correlates with self-efficacy ($r = .44$, $p = .01$), metacognitive awareness ($r = .27$, $p = .01$), metacognitive knowledge ($r = .31$, $p = .01$) and metacognitive activity ($r = .19$, $p = .05$). Reflexivity, in addition to educational motivation, is related to metacognitive awareness ($r = .35$, $p = .01$). The correlation between self-efficacy and implicit theory of intellect ($r = .24$, $p = .01$) is also viewed, as well as between self-efficacy and metacognitive awareness ($r = .34$, $p = .01$) and self-efficacy and metacognitive knowledge ($r = .26$, $p = .01$). Metacognitive awareness apart from the correlation with educational motivation, self-confidence, reflexivity and self-efficacy, is also positively correlated with metacognitive knowledge ($r = .36$, $p = .01$).

With the help of Spearman correlation there were also identified relations between personal traits, cognitive and metacognitive features of students which showed non-linear nature of the relationship between them and provided an opportunity to consider them in the system of the accuracy of metacognitive monitoring. In particular, there is a fixed direct correlation (Pearson correlation) between indicators of the illusion of knowing in prospective (rJOLs $= - .21$, $p = .05$) and retrospective (rRCJs $= - .23$, $p = .01$) judgments of learning. Before task performance there are close correlations with the indicators of the illusion of knowing and metacognitive characteristics of students, including metacognitive activity (raJOL $= - .18$, $p = .05$) and metacognitive awareness (rJOL $= - .21$, $p = .05$).

In the context of the examined personal traits it is observed that those students who are focused on the receiving knowledge often give accurate metacognitive judgments. However, among the students targeted for the profession who made accurate metacognitive judgments, the accuracy of metacognitive monitoring is the highest (MaJOL $= - .006$; MaRCJ $= - .006$; MJOL $= .03$; MRCJ $= .00$). The research showed the correlation (by the criterion of Pearson) between indicators of self-confidence and the illusion of knowing in retrospective judgments of learning about answers ($r = .32$, $p = 0.01$) and retrospective judgments of learning about confidence ($r = .24$, $p = .05$).

As studying motivation is determined by a number of specific factors such as the educational system, the organization of the educational process, subjective characteristics of the student (e.g., age, gender, intellectual development and abilities, level of aspiration, self-esteem, cooperation with other members of the learning process, etc.) the motivation to learn is considered a significant sign of increasing reliability of metacognitive monitoring (Nietfeld *et al.*, 2006). The causes of the educational success and failures are accounted by external and internal reasons. It is proved that those students who are governed mainly by external motivation (orientation on diploma) are characterized by overconfidence. Those who are guided by internal motives such as self-orientation, skills development show under confidence (Kroll, Ford, 1992; Hacker, Bol, Bahbahani, 2008).

The data for the scale of methodology of Romek "self-confidence" – "self-unconfidence" showed that students in the context of its various levels tend to overconfidence as well as under-estimation of the accuracy of the tasks which stand as indicators of ineffective metacognitive monitoring. Correlation analysis (the criterion of Spearman) showed the correlation between indicators of confidence indicators and the illusion of knowing in retrospective judgments of learning about answers ($r = .32$) and retrospective judgments of confidence ($r = .24$) (the level of significance is $p = .05$).

The implementation of aJOLs among those students who showed the illusion of not knowing is also revealed: highly reflexive students show very high rates of undervaluation ($M = - .74$, $p = .01$) compared to middle and low level reflexive students ($M = - .42$, $p = .01$, and $M = - .47$, $p = .01$ respectively). However, the implementation of aRCJs among students with high and middle levels of reflection significantly increases the proportion of those who almost made no mistakes in metacognitive monitoring (from 58% to 73.7% and from 46.4% and 60.8% respectively). These results may be caused because highly and middle reflexive students take into account an experience of being involved in the task performance situations in retrospective judgments of learning. This is supported by established correlation of reflection and metacognitive awareness.

In terms of cognitive characteristics we found out that students with middle and high levels of self-efficacy are more accurate in prospective and retrospective metacognitive judgments of learning compared to students with low self-efficacy. The last demonstrate the prevalence of such error of metacognitive monitoring as the illusion of not knowing. The proportion of overconfident students in their aJOLs and aRCJs (37% and 37,6% respectively) is much higher than the same proportion of underconfident students (10% and 14.3% respectively). Among students with low levels of self-efficacy the proportion of underconfidence in JOLs is very high (55%), but at hte same time the levels of the illusion of not knowing are very high ($M = .53$, $p = .01$).

It is found that there are statistically significant differences in terms of metacognitive knowledge between the indicators of the illusion of knowing in aJOLs and aRCJs [$F(2.56) = 3.38$; p = .05] and differences in terms of metacognitive activity between the indicators of the illusion of knowing in aJOLs and aRCJs [$F(2.56) = 2.79$; $p = .05$], as well in JOLs and RCJs [$F (2.56) = 3.21$; $p = .039$].

There are also statistically significant differences between mean values of the indicators of the illusion of knowing in all kinds of metacognitive judgments of learning in the context of metacognitive activity. The students with low levels of metacognitive activity who took part in the research tend to the illusion of knowing as overconfidence in prospective and retrospective judgments of learning of all types.

There is a direct correlation (Pearson correlation) between indicators of the illusion of knowing in prospective (rJOL = - .21, $p = .05$) and retrospective (rRCJ = - .23, $p = .01$) judgments of learning about confidence and performance indicators of

metacognitive awareness. Before task performance there are close correlations with the indicators of the illusion of knowing and such metacognitive characteristics of students as metacognitive activity (raJOL = - .18, p = .05) and metacognitive awareness (rJOL = - .21, p = .05).

It was also found out that among students with high and middle levels of metacognitive awareness there is a significant proportion of students who almost did not commit errors in metacognitive monitoring (from 46.6% to 58% and from 56% to 74.8% respectively) increases. The same trend was observed regarding the students with high and middle levels of reflection. The analysis data showed correlations between the illusion of knowing levels in all prospective (r = .21, p = .05) and retrospective metacognitive judgments (r = -23, p = .01).

In terms of individual psychological differences there were not found statistically significant differences in the occurrence of the illusion of knowing according to gender peculiarities [F (2.56) = .013, p = .19]. Among the metacognitive monitoring errors it is fixed that women tend to dominance of overconfidence in all of the studied types of prospective and retrospective judgments of learning.

We also found that the students of age group of 17-19 are more overconfident (M = .06; SD = .19), while the students of age group of 20-22, by contrast, are underconfident (M = - .41; SD = .47).

DISCUSSION

As a result of the empirical research it was found that the illusion of knowing regarded as an overconfidence and an error of metacognitive monitoring occurs in all types of metacognitive judgments. Nevertheless, this error is more evident in prospective judgments.

In prospective judgments of learning the illusion of knowing has the strongest correlations with metacognitive characteristics of students such as metacognitive activity and metacognitive awareness. In retrospective judgments we found the correlations between the indicators of the illusion of knowing and metacognitive activity, metacognitive awareness and self-confidence. The results relate to the research data of T.A. Busey *et al.* (2000), C.B. McCormick (2003), T.O. Nelson (1999), K.W. Thiede, (1994), and others, which found that in the process of retrospective monitoring it is often observed that overconfidence leads to the illusory feeling of knowledge in its absence.

Reflexivity, educational motivation, self-efficacy and student's introspection of fixed or changeable intellect are conneted with the illusion of knowing from across the spectrum of the system of relations with metacognitive characteristics and general self-confidence.

Gender and age differences in the manifestation of the illusion of knowing are not observed, although it is found that women tend to overconfidence in their judgments. In the scientific literature there are no empirical data which state the dependence of metacognitive monitoring accuracy from gender differences. In several researches the attention is mainly paid to the correlation between intellect, academic achievements, motivation and gender differences. For example, according to McCarty and Siber (Pulford, 1996), women are less inclined to the occurrence of overconfidence than men. Our results suggest the opposite.

The illusion of knowing is more typical for younger students, especially for those with low levels of educational achievements. The occurrence of the illusion of knowing is more typical for students with lower levels of academic progress. The results correlate with existing in the scientific literature data, according to which the more successful the subjects are, the less confident they are in their knowledge, and vice versa. In particular, the scientists (Dunning *et al.*, 2003; Hacker *et al.*, 2008; Jee *et al.*, 2006; Kruger, Dunning, 1999; Miller, Geraci, 2011; Pallier *et al.*, 2002, Wiley *et al.*, 2005, etc.) state that subjects with high levels of knowledge are less likely to overconfidence.

Subjects with low levels of knowledge have more difficulties with the accuracy of metacognitive judgments (there is overoptimistic confidence), and cannot distinguish between questions answered correctly or incorrectly. Perhaps this may be due to the fact that 17-19-years-old students, although characterized by a certain maturity in mental, moral, and social terms, as conscious motives of behaviour are amplified, are under influence of the inherent prevalence of maximalist inclinations in all activities, categorical assessments, etc. Complex and new challenges that students face from the first year of study require precise organization of educational process, skills of independent work with educational and scientific literature, independent allocation of time, etc. All these factors, despite the development of thinking, memory, attention, etc., provokes the generation of so-called processes as 'delaying', 'breaking', greater uncertainty, which, in our opinion, can cause declination of confidence in the educational tasks performance by 20-22-years-old students.

CONCLUSIONS

We found the correlations between the indicators of the illusion of knowing and personal, cognitive and metacognitive characteristics, individual psychological differences. Gender and age differences in the manifestation of the illusion of knowing are not observed, although it is found that women tend to overconfidence in their judgments. The illusion of knowing is more typical for younger students, especially for those with low levels of educational achievements.

Consequently, the results show that metacognitive monitoring judgments are important sources of how students regulate their own knowledge in the educational process. Overconfidence in knowledge of the educational material could lead to the fact that the needed material will be studied with not enough time and effort. Conversely, the systematic underestimation of knowledge is the reason for spending too much time working with already learned material.

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THE ILLUSION OF KNOWING FROM PERSPECTIVE OF METACOGNITIVE MONITORING ACCURACY OF EDUCATIONAL ACTIVITY OF UNIVERSITY STUDENTS

SUMMARY: The study analyses the results of the empirically established connections between the features of the singled out personal, cognitive and metacognitive characteristics of students. In particular, it is established that the illusion of knowing regarded as an overconfidence and an error of metacognitive monitoring occurs in all types of metacognitive judgments, but is more evident in prospective judgments. We found the correlation between the indicators of the illusion of knowing

and metacognitive activity, metacognitive awareness and self-confidence. Reflexivity, educational motivation, self-efficacy and student's introspection of fixed or changeable intellect are conneted with the illusion of knowing from across the spectrum of the system of relations with metacognitive characteristics and general self-confidence. Gender and age differences in the manifestation of the illusion of knowing are not observed, although it is found that women tend to overconfidence. The illusion of knowing is more typical for younger students, especially for those with low levels of educational achievements.

KEYWORDS: illusion of knowing, metacognitive monitoring, educational activity, overconfidence, underconfidence.

ILUZJA WIEDZY W ZAKRESIE WSPÓŁCZYNNIKÓW NIEZAWODNOŚCI METAKOGNITYWNEGO MONITORINGU DZIAŁAŃ EDUKACYJNYCH STUDENTÓW

STRESZCZENIE: W artykule zostały przeanalizowane wyniki badań empirycznych iluzji wiedzy w zakresie systemu współczynników niezawodności monitoringu działań edukacyjnych studentów. Szczególnie stwierdzono, że iluzja wiedzy jako nadmierna pewność i błąd metakognitywnego monitorowania występuje we wszystkich rodzajach sądów o przebadanym, jednak bardziej przejawia się w sądach prospektywnych. Empirycznie ustalono korelacyjne współzależności pomiędzy wskaźnikami iluzji wiedzy a aktywnością metakognitywną, metakognitywnym zaangażowaniem w działania, ogólną pewnością siebie. Refleksyjność, motywacja nauczania, samoskuteczność oraz wyobraźnia studenta o „ustaloną albo wzrastającą" inteligencję są powiązane z iluzją wiedzy pośrednio poprzez system łączności z cechami charakterystycznymi i ogólną pewnością siebie. Pod względem różnic płciowych, u kobiet ustalono tendencję do przewagi nadmiarnej pewności siebie. Ponadto okazało się, że iluzjia wiedzy jest bardziej typowa dla studentów młodszej grupy wiekowej, zwłaszcza tych, którzy cechują się niskim poziomem osiągnięć edukacyjnych.

SŁOWA KLUCZOWE: iluzja wiedzy, metakognitywny monitoring, działalność edukacyjna, wiekowe cechy i odmienności płciowe.