ACHIEVEMENT GOAL ORIENTATIONS AND MATH ATTITUDES

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Abstract: The purpose of this research is to examine the relationships between achievement goal orientations and math attitudes. Participants were 569 university students. The 2X2 Achievement Goal Orientations Scale and Mathematics Attitudes Scale were used as measures. The relationships between achievement goal orientations and math attitudes were examined using correlation analysis and multiple regression analysis. According to the results negative attitudes were predicted positively by learning-avoidance and performance-approach/avoidance goal orientations. Furthermore, positive attitudes were predicted positively by learning-approach/avoidance goal orientations and negatively by performance-approach/avoidance goal orientations. The results were discussed in the light of literature.

Key words: achievement goal orientations, math attitudes, multiple regression analysis

The achievement goal orientations theory was developed within a social-cognitive framework and "is emerging as a useful construct for understanding how people develop, attain or demonstrate competence in learning and performance (Zweig, Webster, 2004, p. 232). Ames (1992) defines achievement goal orientations as an "integrated pattern of beliefs, attributions, and affect that produces intentions of behavior" (p. 261). Generally, researchers have proposed two achievement goal orientations; learning and performance (Dweck, Leggett, 1988). These two different goal orientations represent important differences in behavior. Students who adopt learning goal orientation are interested in learning new skills, improving their understanding and competence (Dweck, Leggett, 1988). Students who orient themselves towards performance *goal* orientation on the other hand, are more concerned with social comparisons, proving their ability, receiving desirable or avoiding negative judgments of their performance. These students focus on doing better than others, outperforming all other students, and avoiding appearing unable to perform (Dweck, Leggett, 1988).

Results have typically indicated that while having a learning goal orientation has motivational advantages, having a performance goal orientation can be harmful and maladaptive (Urdan, Maehr, 1995). For example, learning goal orientations were found positively related to numerous adaptive motivational variables, internal academic locus of control, such as perceived ability, self-compassion, task engagement, and attributions of success to effort (Akin, 2008a, 2010; Dweck, Leggett, 1988; Meece, Blumenfeld, Hoyle, 1988; Midgley, Urdan, 2001). On the other hand, studies demonstrated that performance goal orientations were positively associated with maladaptive behaviors such as lack of

persistence, negative affectivity, and increased anxiety (Eppler, Harju, 1997; Meece, Blumfeld, Hoyle, 1988). Anxiety is directly related to perceptions of one's own skill in subject areas and with negative attitudes (Wright, Miller, 1981). In other words, negative attitudes can produce negative results, thus creating anxiety (Vinson, 2001). Also, anxiety is a state of discomfort which occurs in response to negative situations involving a task, which can often create a negative attitude toward the subject (Zettle, Raines, 2002). This will eventually create a chicken and egg situation. The inevitable result will be a vicious cycle of negative affectivity, in which an increasing anxiety will lead to increasing negative attitude which will in turn cause anxiety to increase even more.

Some researchers (Elliot, Church, 1997; Kaplan, Midgley, 1999; Midgley, Kaplan, Middleton, 2001) have questioned the maladaptive nature of performance goal orientations and have claimed that performance goal orientations do not always have negative effects and in some conditions they could lead students to more adaptive patterns of achievement than do learning goal orientations. Due to these suggestions, the achievement goal orientations theory has been revised and performance orientation has been divided into approach and avoidance components. According to this model, while students who hold performance-approach goal orientation are more concerned with demonstrating competence and outperforming other classmates, students with performance-avoidance goal orientations are interested in avoiding the demonstration of incompetence.

Although this approach-avoidance distinction is widely accepted and empirically supported, recently, most researchers (Elliot, Church, 1997; Elliot, McGregor, 2001; Pintrich, Conley, Kempler, 2003) have suggested that learning goal orientation can be partitioned into approach and avoidance. They claimed that there may be occasions when students are focused on avoiding misunderstanding, instead of learning or mastering the task. Some perfectionist students may focus on not giving a wrong or inaccurate answer in a task. These students may not be concerned about doing it wrong on account of a comparison with others (a performance-avoidance goal), but rather because of their own high standards for themselves (Pintrich et al., 2003). The feasibility of 2X2 achievement goal orientations model was examined and in the factor analyses empirical support was found for the differentiation of the four goal orientations (Elliot, McGregor, 2001). In the current study, the 2X2 achievement goal orientations model (Elliot, 1999; Elliot, Church, 1997; Elliot, McGregor, 2001) has been adopted in order to account for the motivational process that produces math attitudes.

Research has demonstrated that achievement goal orientations are related to a series of motivational (e.g., academic locus of control), cognitive (e.g., the use of deep and surface learning strategies), and emotional variables (e.g., negative affectivity). Another important variable, which can be related to achievement goals, is math attitudes. This construct has been defined by McLeod (1992, p. 581) as "affective response that involves positive or negative feelings of moderate intensity and reasonable stability". The author has stated that attitudes develop with time and experience and are reasonably stable, so that hardened changes in students' attitudes may have a long-lasting effect. Regarding this issue, Lester, Garofalo, and Lambdin Kroll (1989, p. 75) pointed out that,

"any good mathematics teacher would be quick to point out that students' success or failure in solving a problem is often as much a matter of self-confidence, motivation, perseverance, and many other non-cognitive traits, as the mathematical knowledge they possess." More recently, researchers defined math attitudes as students' affective responses - in the context of mathematics learning - to self-concept, family support, and gender role in mathematics (Ma, Kishor, 1997). Hannula and Laakso (2002) viewed attitudes more narrowly and defined them as the trait aspects of emotions and suggested that beliefs have both a state and trait aspect. For example, while a student may have a belief trait that he is not very good with mathematical tasks, his belief state regarding a specific task evolves as he reads the task and begins to solve it.

Researchers (Fisher, Rickards, 1998; Forgasz, Leder, 1996; Papanastatsiou, 2000; Wong, 1992) have identified a wide spectrum of factors associated with students' mathematics attitudes such as parental and societal influences, students' classroom experiences, and teachers' classroom behaviors. Tymms (2001) investigated 21,000 students' math attitudes and suggested that the most important factors were the teachers' and students' academic level; while age, gender, and language were weakly associated with attitudes. Fisher and Rickards's (1998) research revealed that students' mathematics attitudes tended to be more positive in classrooms where students perceived greater leadership and helping/friendly behaviors in their teachers, and more negative in classrooms where students perceived their teachers as scolding and enforcing strict behaviors. Furthermore, it has been shown that there are gender differences in attitudes towards mathematics with girls showing more negative attitudes than boys (Casey, Nuttall, Pezaris, 2001; Vermeer, Boekaerts, Seegers, 2000).

Students' math attitudes play a crucial role in mathematics education (McLeod, 1992; Yenilmez, Ozabaci, 2003; Zan et al., 2006). Research has demonstrated that learning outcomes of students are closely related to their beliefs and math attitudes (Furinghetti, Pehkonen, 2000; Schoenfeld, 1992; Peker, Mirasyediođlu, 2003). For example, it was found that math attitudes are related positively to math achievement (Peker, Mirasyediođlu, 2003) and negatively to math anxiety (Yenilmez, Ozabaci, 2003) in Turkish secondary school students. Similarly, in a meta-analysis study, which examines 113 studies in the area of math attitudes and math achievement, it was found that the relationship between math attitudes and math achievement is .12 (Ma, Kishor, 1997). In a more recent study, Ma and Xu (2004) found an imbalanced reciprocal relationship between math attitudes and math achievement across almost entire secondary school student population, with achievement showing causal predominance over attitude.

THE PRESENT STUDY

Although the relationships between math attitudes and some psychological and educational variables have received extensive scholarly attention, documenting their association with motivational variables has received less attention. Despite extensive review of literature, we were able to find only two studies which have examined the relationships between achievement goal orientations and math attitudes. The former study has considered attitudes as predictor and goals as outcome variables while the latter

vice versa. In the first research, Seo (2000) has examined how goal orientations interacted with motivational variables and found that math attitudes and effort had positive effect on learning-approach goal orientation. In the latter study, which investigated the contributions of classroom environment and achievement goal orientations as well as students' performance and attitudes in mathematics, Gherasim, Butnaru, Boza and Iacob (2011) have found that the students' performance avoidance goals were negative and mastery goals were positive predictors of the achievement and attitude towards mathematics. Also, the results proved that classroom environment moderated the relationships between achievement goal orientations and achievement in mathematics. However learning-avoidance goals have not been examined in research of relationships between achievement goal orientations and attitudes. In present research math attitudes are considered as an outcome and achievement goals as predictor variables, because achievement goals are pattern of beliefs, attributions, and they produce intentions of behavior and math attitudes are affective responses that involve positive or negative feelings.

Achievement goal orientations can be regarded as playing a crucial role in math attitudes, while different kinds of achievement goals may play different roles. Based on the 2X2 achievement goal orientations model, the current study aims to examine the possible links between math attitudes and four achievement goal orientations. Since learning-approach goal orientation pertains to an intrapersonal/self-referenced competence (Chen et al., 2009), in our study we hypothesized that learning-approach goal orientations would be associated negatively with negative math attitudes and positively with positive math attitudes. On the other hand, performance-approach goal orientations were found positively associated with maladaptive variables such as lack of persistence, negative affectivity, and increased anxiety (Eppler, Harju, 1997; Meece et al., 1988). Thus, in this research it was expected that performance-approach goal orientations would be related negatively to positive math attitudes and positively to negative math attitudes. Similarly, because negative math attitudes would be triggered by avoidance of achieving normative incompetence, which is the core characteristic of performance-avoidance goal orientation (Chen et al., 2009), it was supposed that performance-avoidance goal orientations would positively associate with negative math attitudes and negatively with positive math attitudes. But, due to learning-avoidance goal orientations containing both a positive definition and a negative valence of competence (Chen et al., 2009), it is difficult to suggest a hypothesis concerning the relationship between learning-avoidance goal orientation and math attitudes. Nevertheless, considering previous data (Elliot, Church, 2003) which indicated that negative attitude is motivated by avoidance motivation and that learning-avoidance goal orientation is linked to avoidance of and executive help seeking (Karabenick, 2003, 2004), it was hypothesized that learning-avoidance goal orientations would be related positively to both positive and negative math attitudes.

METHOD

Participants

Participants were 569 [96 (52%) were female and 273 (48%) were male] university

students from a medium size, public Turkish university. This university is located in the city of Sakarya and attracts students mainly locally, but also from across Turkey. Students were recruited from eight different undergraduate programs: Primary school education (n = 73), social science education (n = 78), science education (n = 61), computer and instructional technology education (n = 84), psychological counseling and guidance (n = 97), Turkish education (n = 64), mathematics education (n = 60), and pre-school education (n = 52). Of the participants, 156 (27%) were first-year students, 145 (26%) were second-year students, 137 (24%) were third-year students, and 131 (23%) were fourth-year students. Their ages ranged from 18 to 36 years old (M = 20.61, SD = 1.43) and GPA scores ranged from 1.56 to 3.80.

Measures

2X2 Achievement Goal Orientations Scale (AGOS). The 2X2 AGOS (Akin, 2006) is a 26-item self-report scale using a five-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*) and has four sub-scales: learning-approach goal orientation (LPGO; eight items, e.g., "I like school work that I'll learn from"), learning-avoidance goal orientation (LVGO; five items, e.g., "I do my best to avoid making mistakes"), performance-approach goal orientation (PPGO; seven items, e.g., "It is important for me to perform better than others"), and performance-avoidance goal orientation (PVGO; six items, e.g., "I worry about the possibility of getting bad grades"). A score for each dimension was assessed by summing the total score of the questions for each dimension. The structure validity of the scale was evaluated with factor analyses in 728 Turkish university students. The amount of total variance explained by four factors was 67% and factor loadings ranged from .41 to .98. Internal consistencies were .92, .97, .97, and .95 and three-week test-retest reliability estimates were .77, .82, .84, and .86 for LPGO, LVGO, PPGO, and PVGO, respectively. Cronbach's alphas for present research were .71, .77, .86, and .82, for four subscales, respectively.

The Mathematics Attitude Scale (MAS, Aşkar, 1986). The MAS was developed by Aşkar (1986) in order to determine students' math attitudes. This scale has 20 items and two subscales; positive attitudes (ten items, e.g., "I like mathematics") and negative attitudes (ten items, e.g., "Taking math is a waste of time"). Negative statements were scored as 5, 4, 3, 2, and 1, and positive statements were scored as 1, 2, 3, 4 and 5 according to the order of alternatives. Some items of the scale are related to intrinsic motivation but the scale is not wholly a measure of intrinsic motivation. Each item was rated on a 5-point Likert scale (1 = unsuitable to me to 5 = definitely suitable to me). Aşkar (1986) reported Cronbach alpha reliability coefficients as .96 for positive attitudes and .92 for negative attitudes subscales. Cronbach's alphas for present research were .88 and .93 for two subscales, respectively.

Procedure

Students participated voluntarily in the research project, completion of the scales was anonymous and there was a guarantee of confidentiality. The scales were administered to the students in groups in the classrooms. The measures were counterbalanced in administration. Prior to administration of scales, all participants were told about the purpose of the study. In this research,

Pearson correlation coefficient and multiple regression analysis were utilized to determine the relationships between dimensions of achievement goals and math attitudes.

RESULTS

Descriptive Data and Inter-Correlations

Table 1 shows the means, standard deviations, inter-correlations, and internal consistency coefficients of the variables used. Preliminary correlation analysis showed that LVGO (r = .67), PPGO (r = .19), and PVGO (r = .67) were related positively to negative math attitudes. On the other hand, LPGO (r = .81) and LVGO (r = .26) were found in a positive while PPGO (r = -.49) and PVGO (r = -.28) in a negative association with positive math attitudes. Independent sample t-tests revealed no statistically significant gender difference in student's math attitudes and achievement goal orientations.

Multiple Regression Analyses

Before applying regression, assumptions of multiple regressions were checked. The data were examined for normality by the Kolmogorov-Smirnov test. The Kolmogorov-Smirnov test indicated normality of distributions of test scores for all tests in the current study. Outliers are cases that have data values that are very different from the data values for the majority of cases in the data set. Outliers were investigated using the Mahalanobis distance. A case is an outlier if the probability associated with its D^2 is .001 or less (Tabachnick, Fidell, 2001). Based on this criterion, five data were labeled as outliers and they were deleted. Multi-collinearity was checked by the variance inflation factors (VIF). All the VIF values were less than 10 (Tabachnick, Fidell, 2001), which indicated that there was no multi-collinearity.

Two stepwise multiple regression analyses were applied to determine which dimen-

Table 1. Descriptive statistics and inter-correlations of the variables

Variables	LPGO	LVGO	PPGO	PVGO	NMA	PMA
LPGO	—					
LVGO	.25**	—				
PPGO	-.64**	-.04	—			
PVGO	-.39**	.38**	.76**	—		
NMA	.06	.67**	.19**	.67**	—	
PMA	.81**	.26**	-.49**	-.28**	.08	—
Mean	3.37	3.18	1.87	2.36	2. 90	2.20
Standard deviation	.81	.70	1.02	.94	.77	.88

Note: LPGO = Learning-approach goal orientation, LVGO = Learning-avoidance goal orientation, PPGO = Performance-approach goal orientation, PVGO = Performance-avoidance goal orientation, NMA = Negative math attitudes, PMA = Positive math attitudes

** $p < .01$

Table 2. Summary of stepwise multiple regression analyses for variable predicting positive math attitudes

Variables	B	Standard Error of B	β	t
Step 1				
LPGO	4.22	.30	.72	13.65*
Step 2				
LPGO	2.63	.37	.58	7.12*
PPGO	-1.82	.32	-.43	5.65*
Step 3				
LPGO	1.61	.27	.55	6.01*
PPGO	-.93	.31	-.42	-3.01*
PVGO	-.67	.31	-.24	-2.18*
Step 4				
LPGO	1.53	.25	.63	6.13*
PPGO	-.87	.27	-.35	3.21*
PVGO	-.56	.26	-.18	-2.16*
LVGO	.38	.17	.14	2.07 *

sions of achievement goals were the best predictors of positive and negative math attitudes. Table 2 shows the results of multiple regression analyses where the independent variables were dimensions of achievement goals and the dependent variable was positive math attitudes.

LPGO entered the equation first, accounting for 58% of the variance in predicting positive math attitudes. PPGO entered on the second step accounting for an additional 10% of variance. PVGO entered on the third step accounting for an additional 4% of variance. LVGO entered last, accounting for an additional 3% of variance. The last regression models involved LPGO, PPGO, PVGO, and LVGO as predictors of positive math attitudes and accounted for 75% of the variance in positive math attitudes. The standardized beta coefficients indicated the relative influence of the variables in the last model, with LPGO ($\beta = .63$, $p < .05$), PPGO ($\beta = -.35$, $p < .05$), PVGO ($\beta = -.18$, $p < .05$), and LVGO ($\beta = .14$, $p < .05$) all significantly influencing positive math attitudes. LPGO was strongest predictor of positive math attitudes.

Table 3 showed the results of multiple regression analyses where the independent variables were dimensions of achievement goals and the dependent variable was negative math attitudes.

LVGO entered the equation first, accounting for 40% of the variance in predicting positive math attitudes. PVGO entered on the second step accounting for an additional 16% of variance. PPGO entered on the last step accounting for an additional 9% of variance. The last regression models involved LVGO, PVGO, and PPGO as predictors of negative math attitudes and accounted for 65% of the variance in negative math attitudes. The standardized beta coefficients indicated the relative influence of the vari-

Table 3. Summary of stepwise multiple regression analyses for variable predicting negative math attitudes

Variables	B	Standard Error of B	β	t
Step 1				
LVGO	5.15	.41	.59	12.52*
Step 2				
LVGO	3.13	.58	.49	5.41*
PVGO	-2.03	.48	.35	4.23*
Step 3				
LVGO	2.51	.51	.55	4.87*
PVGO	-1.87	.57	.37	3.23*
PPGO	-1.55	.73	.18	2.12*

ables in the last model, with LVGO ($\beta = .55$, $p < .05$), PVGO ($\beta = .37$, $p < .05$), and PPGO ($\beta = .18$, $p < .05$) all significantly influencing positive math attitudes. LVGO was strongest predictor of negative math attitudes.

DISCUSSION

The purpose of the present study was to determine the relationships between achievement goal orientations and math attitudes. It was supposed that learning-approach goal orientation would be associated negatively and learning-avoidance, performance-approach, and performance-avoidance goal orientations positively with negative math attitudes. It was also expected that learning-approach and learning-avoidance goal orientations would be related positively and performance-approach, and performance-avoidance goal orientations negatively with positive math attitudes. The results of correlation and regression analyses mostly confirm these hypotheses and the importance of achievement goal orientations, specifically learning-approach goal orientation for better understanding of math attitudes. This finding also shows achievement goal orientations as an important determinant of math attitudes.

Some details of the results should be further addressed. First, the regression results indicated that learning-approach goal orientation predicted positive math attitudes positively. These findings corroborate with the Gherasim's et al. (2011) results which emphasize that the learning-approach goals have a fostering effect on achievement, task persistence and attitude. Studies (Akın, 2008a,b; 2010; Ames, 1992; Dweck, Leggett, 1988; Meece et al., 1988; Midgley, Urdan, 2001; Roeser, Midgley, Urdan, 1996) of the relationships between learning-approach goal orientation and some educational and psychological variables generally demonstrated that this motivational pattern has strong associations with numerous adaptive academic and motivational outcomes, including self-efficacy, perceived ability, task engagement, attributions of success to effort, use of cognitive and self-regulatory strategies, academic achievement, internal academic locus

of control, and self-compassion. Because students who adopt learning-approach goal orientation experience fewer negative feelings and formulate more positive attitudes about themselves (Robins, Pals, 2002), when they face failures they tend to eliminate the factors causing failure rather than accuse or criticize themselves (Ironsmith et al., 2001). These students also believe that they need to make the necessary effort to succeed and that succeeding or failing is directly relevant to them. In addition, if students have high interest in learning new skills and they desire to improve their understanding and competence (characteristics of learning-approach goal orientation), they are more likely to attempt doing those activities and develop positive attitudes toward them. It is also important to note that both positive math attitudes (Gallagher, De Lisi, 1994; Hannula, 2002; Lopez et al., 1997; Midgley, Feldlaufer, Eccles, 1989; Tapia, Marsh, 2001; Webster, Fisher, 2000) and learning-approach goal orientation (Albaili, 1998; Tanaka, Ysmauchi, 2001) are related positively to greater performance and achievement. Therefore, it is not wrong to suggest that learning-approach goal orientation and positive math learning-approach goal orientation are strong predictors of positive math attitudes.

Second, as expected, learning-avoidance goal orientation predicted both positive and negative attitudes. This may partly be due to the fact that learning-avoidance goal orientation is related to some adaptive or maladaptive variables and, therefore, this orientation is less adaptive compared to learning-approach goal orientation. Also, students with learning-avoidance goal orientation have some concerns such as not being able to learn the subject with its all details or forgetting what they have learned (Elliot, McGregor, 2001). Besides, these students display perfectionist behaviors, trying to avoid failure, and when they cannot do this they feel very guilty (Conroy, Elliot, Hofer, 2003). As a result, students who adopt learning-avoidance goal orientation can experience negative and positive outcomes in their learning process. Similarly, they can develop negative or positive attitudes toward learning and privately toward mathematics.

Third, as anticipated, our findings demonstrated that positive math attitudes were explained negatively and negative math attitudes negatively by performance-approach goal orientation. This means that performance-approach goal orientation promoted negative attitudes while it decreased positive ones. Students' attitude is an important factor highly associated with success and motivation. Students with negative math attitudes are less likely to sustain their efforts and have the desire to be involved in the learning tasks. In conjunction with this suggestion, studies demonstrated that performance-approach goal orientation was positively associated with maladaptive variables such as lack of persistence, negative affectivity, and increased anxiety (Eppler, Harju, 1997; Meece et al., 1988). Furthermore, since students with performance-approach goal orientation react maladaptively when they fail (Ames, Archer, 1988) and behave in a learned helplessness way when faced with difficulties (Dweck, Leggett, 1988), performance-approach goal orientation can cause students to develop more negative math attitudes.

And last, consistent with the results of Gherasim's et al. (2011), performance-avoidance goal orientation predicted positive math attitudes in a negative way and negative

math attitudes in a positive way. Negative math attitudes can produce negative results in mathematics thus creating mathematics anxiety (Vinson, 2001). And the studies in this field (Meece, Wigfield, Eccles, 1990; Pajares, Miller, 1994) demonstrated that there is a negative relationship between mathematics anxiety and positive math attitudes. At the same time, students adopting a performance-avoidance goal orientation tended to avoid appearing unsuccessful and clumsy (Elliot, Church, 1997). Therefore, they give more importance to other students and peers than themselves and take other's success as their own measure of value. The negative focus of performance-avoidance goal orientation may drive people to experience anxiety, evaluated threat, shame, and fear of failure (Elliot, Church, 1997). In fact, performance-avoidance orientations are the least adaptive and are associated with a high level of anxiety and low performance (Harackiewicz et al., 1997; Tuominen-Soini, Salmela-Aro, Niemivirta, 2008). This means that the negative math attitudes and performance-avoidance goal orientation share the same motivational properties and the positive relationship between these two variables is quite reasonable.

This study has some limitations. First of all, the sample presented here is limited to university students. For that reason, it is questionable whether the findings can be generalized to different age groups. Secondly, as correlational statistics were utilized, no definitive statements can be made about causality. Third, this research was limited by the use of self-report scales and did not use a qualitative measure of math attitudes.

Despite the above limitations the finding that really stands out in this study is the importance of the goals orientations in relation to math attitudes. For this reason, teachers should make more of an effort to foster the development of high supportive classrooms focusing more on the mastery goals and less on the performance goals.

In conclusion, regarding math attitudes as an outcome and achievement goals as predictor variable this research reports that the achievement goal orientations affect math attitudes directly. Students high in learning-approach goal orientation are more likely to have positive math attitudes whereas students high in performance-approach and performance-avoidance goal orientations are more likely to have negative attitudes. Therefore, the current study is in a position to further our understanding of the motivational process of math attitudes. However more research is needed to examine the antecedents of the math attitudes.

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ORIENTÁCIA NA ÚSPECH A POSTOJ K MATEMATIKE

A. A k i n

Súhrn: Skúmali sme vzťah medzi orientáciou na úspech a postojom k matematike. Výskumu sa zúčastnilo 569 vysokoškolákov. Použili sme 2X2 Achievement Goal Orientations Scale a Mathematics Attitudes Scale. Vzťahy medzi orientáciou na úspech a postojom k matematike sme skúmali pomocou korelačnej a viacnásobnej regresnej analýzy. Výsledky ukázali, že negatívny postoj pozitívne súvisel s orientáciou na vyhýbanie sa učeniu a orientáciou na priblíženie/vyhýbanie sa výkonu. Okrem toho pozitívny postoj súvisel pozitívne s orientáciou na priblíženie/vyhýbanie sa učeniu a negatívne s orientáciou na priblíženie/vyhýbanie sa výkonu.