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Summary

The goal of our research was to examine the differences in learning styles between students with different level of proactivity. Participants were 255 students (18.8% male, 81.2% female). Students filled out Proactivity questionnaire and Approaches and Study Skills Inventory for Students. The results have shown significant differences in learning approaches in students with different proactivity level. Students with high proactivity level have used less surface learning approach than students with medium and low level of proactivity. There were significant differences between all three groups in deep and strategic learning approaches. The high level proactivity student group has used more strategic and deep approaches than the medium and low level proactivity student groups and medium level proactivity student group has used more strategic and deep approaches than the low level proactivity student group. Knowing the way in which proactive students achieve success is something that we can teach less successful and less proactive students.

Key words: *proactivity, students, surface, deep and strategic learning approaches*

Introduction

In educational psychology important areas of research are certainly represented by learning approaches and with them, for the participants of educational process, the importance related to knowledge about their impact on the outcomes of this process. Continued work on deepening the knowledge about the opportunities offered by using different learning approaches, enables needed development of strategies for improving the quality of teaching, as well as satisfaction of all participants in the educational process.

Biggs (1987) and Entwistle (2000, in Chester et al., 2013) represent the concept according to which there are three different approaches to learning: deep, strategic and surface approach to learning. Thereby, the deep approach is determined by the characteristics of intrinsically motivated individuals who are focused on discovering and deepening their knowledge and who find satisfaction in their learning process. They mainly use more adaptable learning strategies with which they ultimately accomplish higher achievements (Biggs, 1987). For them, the satisfaction and personal success comes from the very process of learning, making conclusions and connecting existing knowledge. The strategic approach includes extrinsic motivation, wherein individuals are focused on achieving the accomplishments and related requests and awards. With the same aim, during the preparation they plan, control and use the most favorable conditions and materials. The opposite of deep is a superficial approach which determines the minimum investment of effort, sufficient for achieving the basic level of success, sufficient to avoid undesirable failure (Walker, et al., 2010, in Chester et al., 2013; Chamorro-Premuzic et al., 2007; Chamorro-Premuzic & Furnham, 2008). Individuals with the surface approach to learning acquire information without interconnection and understanding, with the simple intention of reproduction. In accordance with the above, studies have shown interrelation of higher achievements with the deep approach to learning, and lower achievements when using the surface approach to learning (Gargallo et al., 2013).

Within the concept of learning approaches, previous studies mainly sought to explain the example of the impact of different learning approaches on achievement of students, and, we can conclude, to a lesser extent relationships between approaches and teaching. The attempts to explain the relationship between learning approaches and personality traits are equally represented in a lesser extent, and particularly in relation to proactivity which, as a construct, mostly has been studied in the field of organizational psychology. Bezuidenhout (2011, in Potgieter & Coetzee, 2013) generally defines proactivity as accepting responsibility and challenges in identifying and achieving our own potentials, setting goals, ability to adapt, and taking the initiative for self-advancement. Bateman and Crant (1993) emphasize the activity and perseverance. In conclusion, proactivity is described by three important determinants: future orientation, self-initiative and a tendency to change (Parker et al., 2010, in Tornau & Frese, 2013). By comparing these determinants with characteristics of individuals with deep learning approach, we can notice the similarities in their basis. This approach to learning is further enhanced by Zimmerman (1990) in theory of Self-regulated learning, in which individual self-actively structures his own learning process and the environment in which it takes place (Lončarić, 2010).

Considering the increase of educational requirements on daily basis, including the promotion of independent and active role of students and the development of critical thinking, the aim of our study was to examine differences in the approaches to learning compared to students with varying degree of proactivity. The purpose of this study is to contribute to examining less known relation between the proactivity construct and different approaches to

learning in order to be able to improve the quality and satisfaction of all participants in the educational process. Knowing this relation, we can develop and create the most favorable conditions and approaches to learning for students and encourage the proactivity, which is important for further professional development.

Method

Participants

Participants were 225 first year students of graduate studies from Faculty of Economics (133), Faculty of Humanities and Social Sciences (89), Department of Mathematics (21) and Department of Physics (12) of J. J. Strossmayer University of Osijek. There were 81.2% of female students and 18.8% of male students. Students' age ranged from 20 to 29 years ($M = 22.44$, $SD = 1.48$).

Instruments

Approaches and Study Skills Inventory for Students (ASSIST; Entwistle, 2000) was adapted and used for self evaluation of learning approach. In our research we used the second part of ASSIST which consists of 52 items divided in 3 subscales. These three subscales are measures of 3 main learning approaches: deep (16), strategic (20) and surface (16). Claims were self evaluated on a Likert-type scale with five levels: from 1 = Strongly Disagree to 5 = Strongly Agree. Composite score is calculated as the sum of the estimates of all claims from particular subscale. Higher scores on each subscale indicate overcoming the corresponding learning approach. Cronbach-alpha reliability coefficients for students' learning approaches are 0.83 for deep, 0.80 for strategic and 0.79 for surface learning approach.

Proactivity questionnaire P1 (Zarevski, 2001) was adapted and used for self evaluation of students' proactivity behavior degree. P1 was constructed at the Department of Psychology at the Faculty of Social Sciences in Zagreb. It consists of 28 items. On each claim participant answers with „Yes“ or „No“, depending on how well that claim describes his/her behavior. Results on the claims are binary values, and each statement is scored in the direction of proactive behavior, so results with higher score indicate a greater proactivity. Items from questionnaire are grouped into two factors: the tendency for change and the tendency for planning. The internal reliability of the questionnaire as a whole was 0.68.

Procedure

The study was conducted in larger or smaller groups, during class, at the home faculty of the participants. Participation in the research was anonymous and voluntary. Filling out questionnaires lasted approximately 20 minutes. Data were analyzed using SPSS 15.0 for Windows.

Results

In data analysis, the descriptive statistics for the variables which were included in the study were first calculated. Students were divided into three groups based on their results on the Proactivity questionnaire. In the low level proactivity group, there were 25% of students with the lowest results on the Proactivity questionnaire, in the high level proactivity group, there were 25% of students with the highest results on Proactivity questionnaire, and 50% of students between this two groups made the medium level proactivity group. The requirements for performing analysis of variance were calculated. Leven's tests of homogeneity of variance

were not significant for the deep and strategic learning approaches variables, but for the surface learning approaches variable was significant ($p < 0.05$). The requirement for normal distribution for most variables was not met (Kolmogorov-Smirnov test was statistically significant). As this is a large sample ($N > 200$; according to Field, 2009), there is, however, a possibility that smaller variations from the norm, point to a disturbed condition of distribution normality, i.e. that the results are not normally distributed. For that reason, we checked the coefficient of skewness and that of kurtosis, which indicated that the normality of distribution was not significantly disturbed in case of any variable, i.e. the results regarding skewness was 0.15 the results concerning kurtosis was 0.30. According to Field (2009) and Sirkin (2006), skewness and kurtosis are considered to be very good if their value ranges from +1 to -1. Then, the analysis of variance (ANOVA) was done to examine the differences in learning approaches between students with different level of proactivity (Table 1).

Table 1. Descriptive statistics and ANOVA

Learning approach	Proactivity level	N	Mean	Std. Deviation	F (2,252)
Surface approach	low	72	53.79	8.42	6.99*
	medium	126	52.64	8.62	b c
	high	57	48.06	11.16	
	Total	255	51.94	9.40	
Strategic approach	low	72	67.18	10.81	24.52*
	medium	126	71.83	10.58	a b c
	high	57	80.61	11.77	
	Total	255	72.48	11.89	
Deep approach	low	72	55.13	7.01	26.65*
	medium	126	57.91	7.94	a b c
	high	57	64.61	7.01	
	Total	255	58.62	8.21	

* $p < 0.001$

significant Scheffe's test between groups:

^a between low and medium proactivity level group

^b between low and high proactivity level group

^c between medium and high proactivity level group

The significance of the results was evaluated by one-way ANOVA followed by post hoc Scheffe's pairwise comparison test for unequal group size. For all learning approaches there were significant differences. Students with high proactivity level have used less surface learning approach than students with medium and low level of proactivity. There were no statistical significant differences in using surface learning approach between students with low and medium proactivity level. There were significant differences for deep and strategic learning approaches between all three groups of students. The high level proactivity student group has used more strategic and deep learning approaches than the medium and low level proactivity student group, and the medium level proactivity student group has used more strategic and deep approaches than the low level proactivity student group.

Discussion

Academic learning requires active participation which means construction and reconstruction, integration and reintegration of cognitive and action structures. Also, academic learning is a process which requires high quality activity (Frăsineanu, 2013).

In line with our goal of research, results showed that the students with higher levels of proactivity, compared to the students with medium and lower levels, have less used surface approach to learning, which is in line with our expectations. Since the surface approach is characterized by a fear of failure and the reproduction of materials without connecting and finding meaning in what we learn, we can conclude that such students are characterized by certain passivity in learning and investing a minimum of effort. Such an approach is not in line with the characteristics of proactive individuals who actively change the environment in order to achieve the goal, and persist in their goals. Furthermore, for deep and strategic learning approach the results showed statistically significant differences in all three groups of students. In accordance with the assumptions, the highly proactive students use strategic and deep approach to learning the most, the students with medium level of proactivity use strategic and deep approach to learning less than highly proactive students, while the low proactive students use them the least. These results are also expected given that the students, who use the strategic learning approach, are characterized by focus on achieving the goal, and the selection of the optimal strategies and conditions for learning. Characteristics of proactive individuals related to persistence in activities until they reach the desired goal (Harré, 1983), and their ability to change and directly influence their environment (Bateman and Crant, 1993) are in fact in this case, the qualities of a strategic approach to learning in which individuals plan, control and use the best conditions and materials to accomplish the goal. Considering that the deep approach of learning is by definition the closest to the concept of proactivity, it is not surprising that students with high level of proactivity mostly use deep approach to learning. These students in their learning use more adaptable learning strategies and achieve better academic success (Biggs, 1987, in Liem et al., 2008). Deep approach to learning implies the use of appropriate learning strategies and deeper processing of material that requires proactive efforts and seeking opportunities to learn what are, in fact, the characteristics of proactive individuals.

Since in the present study participants were students of the first year of graduate studies, who had already gained some experience in highly demanding academic learning conditions, and that their education is increasingly focused on independent research work, we can conclude that our participants had already passed the process of self-selection and are thus probably more pro-active and successful. These students are those who, to successfully complete the studies, must in their work, in accordance with the requirements of higher education, develop a form of proactive and self-regulated learning which includes critical thinking and problem-solving situations, deep analysis of the problem, self-initiative in finding solutions and thinking about the different aspects of problem-solving situations.

Although this is the first study that considered only relation of proactivity, as a recent concept in the field of educational psychology, and approaches of learning, there are some methodological limitations. The study was conducted in only one generation of students (first year of graduate study), which could limit the range of the degree of proactivity, and due to the already mentioned self-selection, the sample actually consisted of more successful students (who have previously successfully completed three years of study). However, we believe that we, hereby, managed to include a group of students who had already been able to develop a certain level of proactivity, as well as different strategies when selecting approach to learning. It is recommended that future researchers definitely check this relationship on a larger sample of different generations. Additionally, it would be interesting

to examine the differences between the different directions of students, especially if we consider proactivity as part of the construct of personality, where it would be important to verify whether it influences the choice of future profession. Furthermore, due to the large differences in the number of male and female students, we were not able to verify the gender differences in proactivity or interaction of gender and approaches to learning, which is another additional interesting question. In conclusion we can say that our study is only the beginning of a series of necessary studies in this area.

Conclusion

This study has shown that when choosing learning approaches it is also essential to give appropriate attention to one newer concept, proactivity, especially if it is viewed in the context of personality. The results of our study suggest practical implications for higher education. The higher education has a different way of organizing its contents, the teaching and assessment methods are different or have different applications. All these things influence the way in which students design and realize learning (Frăsineanu, 2013). Knowing the characteristics of successful students, as well as the level of proactivity, and the way they are functioning in their work (where they often choose deep and strategic learning approach) can help students organize quality and successful learning. While on proactivity, as a part of the personality, we do not have big influence, knowing the way in which proactive students achieve better performance, and that is by the use of appropriate learning strategies, is something we can teach less successful students with a lower degree of proactivity. Within higher education it is necessary to put emphasis on the practical side of activities with students. The realistic and practical tasks and problem situations, and not just theoretical ones, are necessary for the development of successful future career.

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