

## TEACHING AND LEARNING - ORIENTED TOWARDS AND IN SERVICE OF STUDENTS LEARNING STYLES

Qufli Osmani<sup>1</sup>, Musa Musai<sup>2</sup>

<sup>1</sup>*Department of Philosophy, Faculty of Philosophy*

<sup>2</sup>*Department of Psychology, Faculty of Philosophy*

*Corresponding author e-mail: qufli.osmani@unite.edu.mk; musa.musai@unite.edu.mk*

---

### Abstract

The aim of this study corresponds with the intention to verify the rapport between teaching, learning and learning styles and all of this to ensure the defining and stimulating framework of learning and teaching in the secondary and higher education system.

The research was conducted with a sample of 276 subjects, of which 245 are students and 31 are teachers. The students are aged 15 – 23, of which 85 are high school students and 160 are university students of social studies. To measure the learning styles, the Learning Styles Questionnaire has been used (Honey & Mumford, 1986) which measures four specific skills (pragmatists, reflectors, activists and theorists) made up of 40 items (ten for each style in particular)

The results offer considerable pragmatic findings. Teachers and students make up as a dominant mass the reflectors (33, 85%) and the theorists learning style (29,81%). 17,44% of students have been classified without a specific dominant learning style. From the obtained correlative coefficients, we conclude that there is an important statistical correlation between the learning styles of teachers and students (0.72). The research did not verify differences in context of learning styles between the dominant learning styles in secondary and higher education, as well as insignificant gender differences in the context of learning styles. The theorist style and the reflectors style remain the dominant options of learning even during studies.

*Keywords:* learning styles, pragmatist, reflector, activist, theorist, reliability

---

### Introduction

There have been many theorists that have discussed the different students' learning styles. Recognizing the importance of understanding students' learning styles, not only helps the student, but above anything else, it is going to help the teachers to be more efficient in their teaching environment. Even though the assessment of students' learning preferences is time-consuming and is considered a difficult process. But, certainly defining the students' learning styles can help them in the later phases of growth and their cognitive development in order to be successful now and in the future.

Quite often, the teaching process depends on the student/learner perception of teaching, as a process that is conditionally challenging/boring, or as a motivating/discouraging process. Also, teachers' and students' lack of competence to adapt the teaching material according to the personal learning style, as well as undeveloped learning habits are considered a challenge that should be treated in different empirical studies.

The beginnings of the first ideas about learning styles caused an ever-rising interest which resulted in many definitions, theories and classifications. Nowadays, many theories can be found which strive, each from their own point of view, to enlighten the mechanisms and the learning styles content. Among the theories, the most prominent is considered the one that puts individual experience in the center of learning, according to which the individual creates a proactive approach towards learning, respectively, the individual actively participates in the creation of a personal knowledge system.

The teaching process qualifies as a linking factor with learning since through that the individual acquires new knowledge about themselves and the world around them. If we look at teaching from a didactic point of view, from the theoretical as well as practical aspect, it relies on many factors and processes, such as teaching factor, didactical principles, teaching methods, teaching tools, teaching forms, the material content of the activity, etc.(Musai, 1999).

## **Learning Styles**

The dominant learning style became famous in studies around 1892 and was initially used by Thelen (Fatt, 2000). But relevant studies begin with the theories of David Kolb (Fatt, 2000) which inspires Peter Honey and Alan Mumford who have identified four learning styles: activist, theorist, pragmatic and reflector. The students who adapt their learning style with the assignment given are considered to have a general learning style (Fatt, 2000) and every student should understand their learning style and look for opportunities to learn using that style.

Learning styles refer to cognitive, affective and psychological processes which are relatively consistent and consistent indicators of how students percept, interpret and react to the lesson (Zarghani, 1988; Swanson, 1995). We can define the dominant learning style through the assessment process of high school/university student achievement. When high school/university student achievement is assessed through the activities that relate to their favorite learning style, then the high school/university student achieves higher results rather than when assessment is done with common assessment tools (according to Jensen, 2003).

Rita and Kenet Dan (Dunn, 1983) conceptualized the model of learning styles, and it serves to recognize the dominant individual learning style.

Other taxonomies on learning styles exist, in which there are visible content similarities between the style models. According to another classification, the so-called holistic-analytical and verbal – imaginative styles exist (Ridin and Cheema, 1991). According to the authors of the classification, styles are independent. According to Willis and Hudson (Willis and Hudson, 2004) learning styles can be: convergent and divergent.

On another note, Silver, Strong and Perini (1997) agree that the theory on learning styles began with the representative of psychoanalysis, Carl Jung in 1927 who emphasized the existence of huge differences in how people foresee, how they make decisions and how active or reflective they were as they were interacting with others (Silver et al, 1997). The learning styles theorists “believe that learning is a result of a personal and individual thinking and feeling act” (Silver et al., 1997, p.22).

Different scholars emphasize the importance of knowing the favorite learning style, students’ knowledge for the learning process as well as the teaching process in general. They emphasize the importance of the connection between the learning and teaching styles in service of the development of student attitudes as well as for better results (Romanelli, Bird, Ryan, 2009).

## Literature review

The literature review (at least from the literature consulted) in the context of the Albanian speaking education suggests that there are attempts by certain researchers (Osmani et al, 2016, Osmani&Mehmedi, 2017; Osmani&Spahiu, 2017), related to the role of learning styles in service of oriented learning and teaching. There have been numerous theorists that have discussed the different learning styles. While foreign researchers deal with research and generalizations on the role and importance of learning styles, teachers are left assuming around the conceptualization of classes, in accordance with the individual attributes obtained from the learning styles. Studies confirm the existence of individual style differences. In this context, researchers have confirmed the existence of differences between talented students and their not-talented peers in the context of learning styles (Milgram & Dunn, 1993), respectively, talented students use different learning skills and channels during acquisition (Dunn, 1983). Other studies have confirmed the existence of rapport between individual independence, self-control and learning styles (Stewart, 1981).

## Methodology

The research problem can be formulated as follows: Whether the learning styles are in correlative rapport with acquisition and academic success/achievement. In accordance with the title of this scientific study, the study aimed to answer the question of whether there is a linear rapport between the students' learning styles and the teachers' perceived teaching styles. Another important research question is whether learning styles differ depending on the education level (secondary/university).

**Sample:** The research was conducted with a sample of 276 subjects, of which 245 students and 31 teachers (Table 1). Students are aged 15 to 23 years old, of which 85 are high school students and 160 university students of social studies from the Republic of Kosovo and the Republic of North Macedonia. The research was conducted in 2018 by the authors of this research paper.

**Research variables and measuring instruments:** In this study, we have treated the effect of interaction of two categories of research variables: a) The four learning styles (pragmatist, theorist, activist, and reflector); b) academic success and socio-demographics.

Learning styles refer to the cognitive, affective and psychological processes which are relatively consistent and consistent indicators on how the students percept, interpret and react to the lesson (Zarghani, 1988; Swanson, 1995)

The learning styles have been measured through the Learning Styles Questionnaire (Honey & Mumford, 1986). The instrument is made of four structural components: a) Subscale for measurement of the reflector style; b) Subscale for measurement of the theorist style; c) Subscale for measurement of the reflector style; d) Subscale for measurement of the pragmatist style.

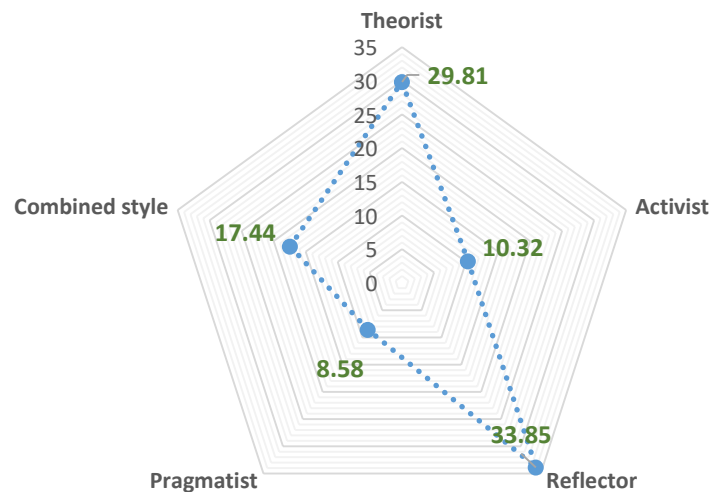
The averages of the scale are of the Likert type gained in 4 interval scales where 1 determines the disagreement with the statement and 5 determines the complete agreement with the statement. The individual learning style is obtained with the comparison of the averages obtained in each subscale, separately. The highest average in the subscale determines the dominant style. In this study, we have also examined the fifth style which is defined as the combined learning style. The noted style is treated as a categorical product, respectively, the same averages obtained in one or more subscales examine the combined style.

The dominant teacher's style is gained as a product of students' perceptions on the dominant learning style that the teacher possesses. The inner consistency of the scale expressed through Alfa Cronbach is  $\alpha=0,78$ .

The level of education and success in learning are included in the second group of variables.

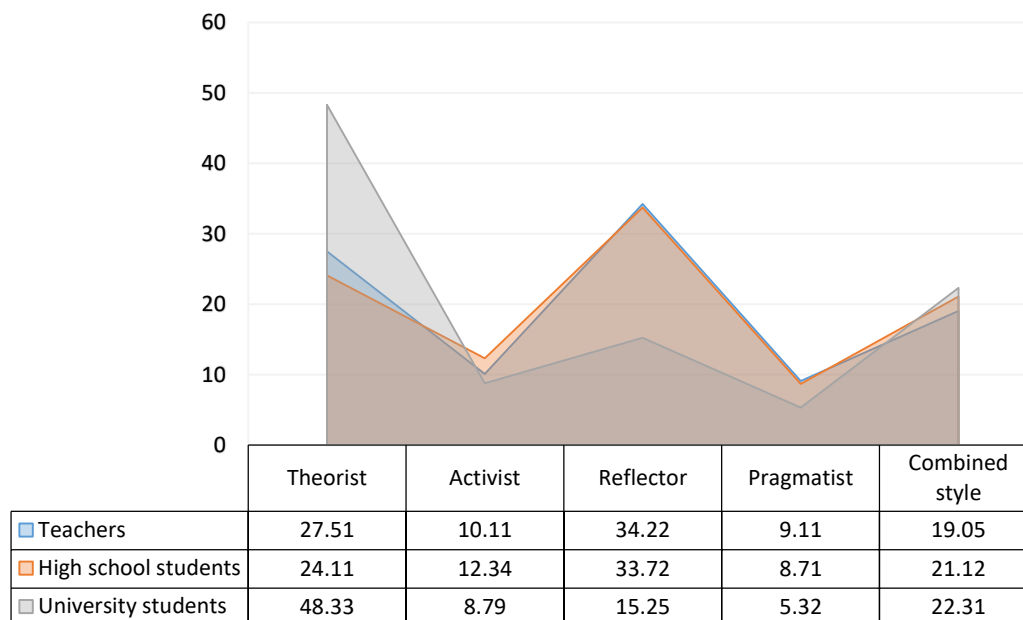
## Results

The initial goal of the study was to verify the representation of learning styles in the sample in general, including the teachers and the students. The subjects are classified based on their dominant learning style, whereas subjects that have the same averages in more than one style have been classified as subjects with a combined learning style (Ronan, 1996; Zorlah, Tey and all 2013)



Graph 1: Distribution of the learning styles in the general sample

Generally speaking, (Graph 1), the reflector style is examined as a dominant learning style (33.85%), followed by the theorist style (29.81%), the activist style (10.32%) and last the pragmatist style (8,85%). Around 17.44% of the subjects use substantial elements of two or more learning styles (more often a combination of the reflector and theorists styles or the reflector, theorist and activist styles).



Graph 2: Distribution of the learning styles in the general sample

Graph 2 answers the question on the distribution of the learning styles depending on the subsample: teachers, high school students and university students. The value of  $\chi^2 = 9.98$   $p < 0.01$ , which is considerable and statistically significant, suggests that the learning styles aren't distributed equally in the three subsamples: teachers, high school students and university students. The graph illustrates that the distribution line of the learning styles is quite similar and convey each other: the reflector style is obviously more dominant in teachers (34.22%) and high school students (33.72%), followed by the theorist style in teachers (27.51%) and high school students (24.11%). The dominant learning style in students is the theorists one (48.33%) followed by the combined style (22.31%) and the reflector style (15.25%). The pragmatist style in the three subsamples is less represented in teachers (9.11%), in high school students (8.71%) and university students (5.32%).

Table 1: Coefficients of the correlation between the learning styles and the demographic characteristics (level of education, gender, academic achievements)

		High school students				Teachers' perceived learning style			
		1	2	3	4	1	2	3	4
1	Theorists	1				0.56**			
2	Activists	0.42**	1				0.68**		
3	Reflectors	0.38**	0.31**	1				0.71**	
4	Pragmatist	0.17	0.39**	0.45**	1				0.32**

\*\*  $p < .01$ (2-tailed)

The results presented in the table above suggest interesting correlations depending on the sample. Positive correlations, not very high, but significant ones are examined among the learning styles. The correlative analysis proved the existence of correlations with mainly positive and significant algebraic signs between the students' learning styles and the teachers' perceived teaching styles. The students' theorist style significantly correlates with the activist style ( $r=0.42$ ;  $p<0.01$ ) with the reflector style ( $r=0.38$ ;  $p<0.01$ ), but does not correlate with the pragmatist style ( $r=0.17$ ;  $p>0.05$ ). The activist style significantly correlates with the reflector learning style ( $r=0.31$ ;  $p<0.01$ ), whereas with the pragmatist style ( $r=0.39$ ;  $p<0.01$ ). The reflector style correlates significantly with the pragmatist style ( $r=0.45$ ;  $p<0.01$ ).

The correlative analysis suggests interesting correlations between the students' personal learning styles and their teachers' perceived learning styles. The theorist learning style of students significantly correlates with the teachers' perceived theorist style ( $r=0.56$ ;  $p<0.01$ ). The students' reflector style significantly correlates with the teachers' perceived reflector style ( $r=0.761$   $p<0.01$ ). The students' activists style significantly correlates with the teachers' perceived activists' style ( $r=0.68$ ;  $p<0.01$ ), as does the students' pragmatist style with the teachers' perceived pragmatist style ( $r=0.32$ ;  $p<0.01$ ).

The correlative analysis has been developed (Table 2) to verify the correlation between the learning styles and the level of education, respectively, of academic achievement. The analysis proved that the problem of multi-correlation between the variables involved in the analysis does not exist.

Table 2: Correlation coefficients between the learning styles and the level of education, respectively of academic achievement

		<b>Theorist</b>	<b>Activist</b>	<b>Reflectors</b>	<b>Pragmatist</b>
1	Education level	-0.18	-0.31**	-0.10	-0.14
2	Academic achievement	0.01	0.09	0.35**	0.09

\*\*  $p< .01(2\text{-tailed})$

In the presentation in the table, the correlations are noted with different algebraic signs, as well as the lack of high correlations. The correlative analysis proved the existence of correlations with different algebraic signs between the learning styles and the subjects' demographic characteristics. The correlative analysis did not prove the correlation between the level of education and the three remaining learning styles: theorist style, reflector style and the pragmatist style. The only significant correlation was noted with the activist style ( $r=-0.31$ ;  $p<0.05$ ). Academic achievement/success statistically significantly corresponds only with the reflector style ( $r= 0.35$ ;  $p<0.01$ )

Table 3: Post hoc analysis on the differences between the students' academic achievement depending on the dominant learning style

	<b>style</b>	<b>style</b>	<b>M</b>
<b>Reflectors M= 4,62</b>		Activist	4,23; $p<0.05$
		Theorist	4,30; $p<0.01$
		Combined	4,10; $p<0.01$
<b>Pragmatist M= 4,61</b>		Combined	4,10; $p<0.05$

The post hoc comparisons (Table 3) from the comparative analysis between the groups found significant differences ( $F=6.28$ ,  $p<0.01$ ). Significant differences in the context of academic achievement are found between the subjects with the reflector style ( $M=4.62$ ,  $DS=0.64$ ) on one hand and the subjects with an emphasized activist style ( $M=4.23$ ,  $DS=0.81$ ), theorist style ( $M=4.30$ ,  $DS=0.79$ ) and combined style ( $M=4.10$ ,  $DS=0.68$ ) on the other hand.

Differently said, high school/university students with an emphasized reflector style, at the same time, have a higher academic achievement compared to their counterparts with the activist, theorist and combined style. Also, the post hoc analysis proved significant differences between the subjects with pragmatist style ( $M=4.61$ ), compared to their peers with a combined style ( $M=4.10$ ,  $DS=0.68$ ).

Table 4: Descriptive statistics and the ANOVA test in the context of the educational level of the subjects and depending on the dominant learning style

	<b>Average</b>		<b>High</b>		<b>t</b>	<b>p</b>
	M	SD	M	SD		
<b>Theorist</b>	37.92	4.66	37.12	3.11	0.89	0.312
<b>Activist</b>	39.96	3.14	37.98	2.86	3.76	0.016
<b>Reflector</b>	35.87	3.55	35.51	3.52	1.01	0.303
<b>Pragmatist</b>	33.16	4.89	33.43	3.89	0.99	0.405

The comparison analysis (Table 4) between the high school students and the university students' learning styles proved the existence of an only significant difference and that is in the context of the activist style in favor of students with secondary education (M=39.96; DS=3.14) compared to university students (M=37.98; DS=2.86). The comparative analysis did not prove statistically significant differences between the high school students and university students in the context of the theorist, pragmatist and reflector style.

## Discussion

This study discusses the learning styles and the way how the learning style correlates with the educational process. There are many important things to know as to why teachers need to understand the students' learning styles. Knowing and understanding the use of the specific learning styles, such as the theorist, reflector, pragmatist and activist learning styles can help the teacher do their best for their students. When we talk about the learning styles, it is important to include the usage of didactic tools, such as technology equipment in the classroom, since technology is being used more outside of education, outside of classrooms, than inside.

The obtained correlations between the personal learning styles and the teachers' perceived learning styles suggest that teachers are a resource, an important representational model from whom the personal learning style is emerging. This is more than anticipated, because both, the theorists and the empirical studies affirm the important role that the teachers have in transmitting and reinforcing students' learning styles. The mechanisms through which the transmission and reinforcement are realized are the students' exposure to the forms of the lecture that the teacher offers during classes. If the teacher uses reflection during classes, it is natural that the students will also learn the reflecting forms besides the information, and they will internalize them as theirs.

Another finding that stands out, not only in this study but consistently in other studies as well (Osmani et al, 2016, Osmani&Mehmedi, 2017; Osmani&Spahiu, 2017), is the fact that students do not use one clear style of learning, but rather pieces of various styles. Many of the theorists of the learning styles believe that people develop and practice a mixture of learning styles as they grow and learn (Silver, 1997). While assessing students at different points in time, teachers need to appropriately teach their students how to maximize their potential.

Also, the graphs on the distribution of the styles suggest that the teaching environments such as high schools and institutions of higher education are in favor of one learning style, i.e. "a modality of the high school students/university students". High schools are in favor of the reflector style, whereas universities are in favor of the theorist style. On the other hand, the high school/university students highlight their personal learning model and their attitude towards different learning contents (Romanelli, Bird, & Ryan, 2009; Silver, 1997; Osmani et al, 2016).

Learning and teaching are treated as interactive and dependable processes. Consistent student rankings in Pisa and other relevant indicators suggest that the actual situation and

positioning of the substantial elements of the teaching process in schools and universities do not achieve their defining goal, neither the academic nor the legal one, i.e. for “students to develop concrete skills and competencies besides gaining knowledge”. In other words, the teaching process needs to fulfill its psycho-social role, besides the cognitive one (Osmani et al, 2016, Osmani&Spahiu, 2017) meaning that it needs to be open and oriented towards “student-centered”. Is such a re-composition of the teaching process possible in Albanian speaking schools? A realistic answer would be yes. The high school/university student processes the information from the teaching content and internalizes them in accordance with the cognitive, affective and psychological processes (Zarghani, 1988; Swanson, 1995). In this direction, nowadays, the usage of technology in the classroom can help students perform better (Naimie et al., 2010). Nowadays, technology and internet resources are considered primary sources used by students to get information. We think that the inclusion of E-learning in different educational environments would help students be “more active” and “pragmatic”.

The study offers findings that touch on the segment of assessing the achievements of high school/university students. The different learning styles seek adequate assessment forms so that the students are able to continue with their achieving performance in learning. The assessment system should be put in function of individual learning styles. Knowledge tests, other forms of assessment should not only assess the simple memorization of information, but above anything, the individual capacities for application, and critical thinking skills also (Osmani et al, 2016, Osmani&Mehmedi, 2017; Osmani&Spahiu, 2017).

The lack of correlation between the three learning styles and the academic achievement can be explained by the fact that the learning content that the high school/university students are learning is more complex, rather than one of the three learning styles to suffice to achieve good results. The reflector style correlates significantly with success in learning, which suggests that students are stimulated by teachers to reflect on what they learn. The existence of a high correlation between the student reflector learning style and the teacher perceived reflector style ( $r=0.17$ ).

After the study of the learning styles and why they are necessary in education, the results of the study conclude that if the learning styles are not assessed appropriately, schools won't be able to accomplish their mission fully. The first step is the usage of tests to assess the learning preferences of students, not only can they improve the way students learn, but it also helps teachers to execute the educational process in the most efficient and effective way possible. Even though the majority of the learning styles we talked about referred to the theory of Honey and Mumford (theorist, reflector, activist and pragmatist), there are many other theories on learning styles (visual, auditory and kinesthetic) that can be compared to the styles included in this study.

The difference in the dominance scale of styles between the two levels of education (high school and university) indicates that styles aren't consistent. Even in earlier studies, we have found (Osmani et al, 2016, 2017) that in secondary education the dominant styles appear to be the reflector and the activist style, which in higher education are going to be replaced by the theorist style. This finding is in correlation with the theoretical conceptualizations (Silver et al. 1997) that recommend that the learning styles should be assessed at an early age, the ongoing assessment should be used for the students' success.

*“Learning styles aren't fixed throughout life, but develop as a person learns and grows”* (Silver et al. 1997, p. 23).

The knowledge obtained from this study (on the dominant reflector, i.e. theorist style in students) as well as the lack of correlation between the learning styles and the academic achievement suggests the implication of this knowledge for the development and design of curricula that would be in service of student acquisition.



## Conclusions

Knowing how students learn can help both, the students and the teachers. By initiating different forms of curricular inclusion of the learning styles as well as using the appropriate assessment forms of the learning styles in schools, the students will be incited to adapt the learning styles in accordance with the specifics of the teaching materials that they are required to acquire. This way, the students are going to perform better, in school and outside of school at the same time.

Statistically significant differences have been examined between the groups in regard to learning styles. The reflector, pragmatist and activist learning styles in high school students were obviously more emphasized than in their colleagues in higher education (university students). On the other hand, the students obviously manifest the theorist and the combined learning style. No significant correlations have been evidenced between the learning styles and academic achievement.

The goal of this study was limited because the focus was mainly on the correlation between learning styles and academic achievement. Therefore, further research should take into consideration the detailed investigation of the learning styles, intrinsic and extrinsic motivation and the other defining variables of the report. On the other hand, many studies have been conducted on university students: more studies should be conducted in the primary school context. Conducting more research in the primary and high school level might help in defining the learning style in children to create a quality experience in learning that will help their acquisition in general.

## References

- [1]. Dunn, R. (1983). Learning Style and its Relation to Exceptionality at Both Ends of the Spectrum. *Exceptional Children*, 49, 496–506.
- [2]. Fatt, J. P. (2000). Understanding the learning styles of students. *International Journal of Sociology and Social Policy*, 20(11), 31-45. Retrieved May 23, 2012, from <http://dx.doi.org/10.1108/01443330010789269>
- [3]. Honey, M. and Mumford, A. (2000). The Learning Styles Questionnaire. Peter Honey Publications.
- [4]. Jensen E. (2003). *Supernastava*. Zagreb: Educa.
- [5]. Kolb, D. A. (1984). *Experiential Learning: Experience as the Source of Learning and Development*. New Jersey: Prentice-Hall.
- [6]. Kolb, D. A. (1999). *Learning Style Inventory, Version 3*. Boston: Hay Group.
- [7]. Kolb, D. A. & Fry, R. (1975). *Toward an applied theory of experiential learning*. Cooper (ed.) Theories of Group Process, London: John Wiley.
- [8]. Naimie, Z., Siraj, S., Abuzaid, R. A., & Shagoholi, R. (2010, October). Hypothesized Learners' Technology Preferences Based on Learning Style Dimensions. *The Turkish Online Journal of Educational Technology*, 9(4), 83-93. Retrieved May 30, 2012
- [9]. Osmani, Q., Gashi, K. (2016). Vlera prediktive e komponentëve strukturore të satisfacionit në punë në parashikimin e angazhimit, përfshirjes dhe mundësisë për punë te punonjësit në banka”. *Kumtesat nga konferenca vjetore e shkencës "Java e Shkencës" 2015*. Vol 2. pp.555-562.
- [10]. Osmani, Q., Mehmedi, F. (2017). “The secondary/higher education environment and the academic experience as an articulation of dominant learning styles of students”. *Mesleki Bilimler Dergisi*. ISSN 2146-7420, Vol 6 (2), pp.155-161.
- [11]. Osmani, Q., Musai, M., Jonuzi, M. (2016). Stilet e të mësuarit në funksion të avancimit të nxënies dhe suksesit akademik. *Kumtesat nga konferenca vjetore e shkencës "Java e Shkencës" 2015*. Vol 2. pp.311-322.
- [12]. Osmani, Q., Spahiu, B. (2017). “Stilet e të mësuarit në funksion të konceptualizimit të programeve të edukimit”. *Naučni Bilten. International Scientific Journals*. ISSN1800-9794. Vol 9-2. pp.128-135.

- [13]. Osmani, Q., Xheladini, F., Gashi, K. (2016). “*Raporti mes stileve të të mësuarit, nxënies dhe suksesit mësimor*”. 5th International Vocational Schools Symposium – Prizren: Importance of vocational education in word. Umyos, Vol 2, pp.1183-1191.
- [14]. Romanelli, F., Bird, E., & Ryan, M. (2009). Learning styles: a review of theory, application, and best practices. *American Journal of Pharmaceutical Education*, 73, 9.
- [15]. Ronan, N. (1996). Learning styles and academic performance in an African university. *Research in Education*, Nov, 87-92.
- [16]. Silver, H., Strong, R., & Perini, M. (1997). Integrating learning styles and multiple intelligences. *Educational Leadership*, 55(1), 22.
- [17]. Willis M., Kindle H. V. (2004). Otkrijte stil učenja vašeg djeteta. Zagreb: Ostvarenje.
- [18]. Zoriah A., Tey X.Y., Syireen A., Chong N.J. (2013). Learning Style Preferences of Pharmacy Students. *The European Journal of Social & Behavioural Sciences*, 14, 819-835.