

## Students' Perception on the Effectiveness of Teaching Methods

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### Abstract

Technological evolution has had an impact everywhere. One of the fields impacted by technological advances is the education system. Modern technology has transformed the way in which teaching processes are conducted. Today, there exist three teaching methods: traditional, hybrid, and the online learning. The objective of the research is the study of the impact that teaching methods have on students' perception on the effectiveness of teaching methods. The instrument employed in this research is the questionnaire. The questionnaires were distributed online during the second semester of the 2016-2017 academic year. The study sample consists of 186 Albanian university students. This study uses quantitative research and the research method is descriptive analysis. In order to analyze the data SPSS 20 and JASP.0.8.0.1 were applied.

The study utilized statistical analyses, such as: student T-Test, linear regression, Pearson correlation coefficient, One-Way Anova, frequency distribution, crossed tabulation. To prove the hypotheses a confidence interval 95% was used. It ensues from the study that the online learning and the hybrid learning has an impact on students' perceptions on the effectiveness of teaching methods. The hybrid learning is mostly preferred over the other two teaching methods by students and is perceived as most effective. Of the students' characteristics, only study program and gender impacts students' perception on the effectiveness of teaching methods.

**Keywords:** traditional learning, online learning, hybrid learning, perceptions on the effectiveness of teaching methods.

### Introduction

Technological evolution has had an impact everywhere. One of the fields impacted by technological advances is the education system. Modern technology has transformed the way in which teaching processes are conducted. Today, there exist three teaching methods: traditional, hybrid, and the online learning. According to researchers the online and hybrid learning will be used in the future (Cerf & Schutz, 2002; Dziuban, Graham, & Picciano, 2014; Anderson, Boyles, & Rainie, 2012; Güzera & Canera, 2014; Bonk & Graham, 2006) These two teaching methods, are better preferred in comparison to the traditional learning. But which method is most effective according to students in Albania? The research paper's objective is the study of the impact

of teaching methods have on students' perception on the effectiveness of teaching methods.

### 1. Literature Review

A study conducted on student satisfaction on teaching methods concluded that students are most satisfied with hybrid courses (Blankson & Kyei-Blankson, 2008). Other reaserchers concur with this conclusion (Castle & McGuire, 2010; Collopy & Arnold, 2009; Farley, Jain, & Thomson, 2011; Martinez-Caro & Campuzano-Bolarin, 2011; Owston, Garrison, & Cook, 2006; Schuhmann & Skopek, 2009; Woltering, Herrler, Spitzer, & Spreckelsen, 2009; Owston, York, & Murtha, 2013). According to Dziuban, Hartman and Moskal (2004) hybrid courses are more successful than traditional and online courses. The usage of the hybrid learning in university programs has had a positive impact for the universities themselves (Moskal, Dziuban, & Hartman, 2013). Substantial research points to the hybrid learning as most effective (Means, Toyama, Murphy, Bakia, & Jones, 2010; Ajide & Tik, 2009; Atiyah, El Sherbiny, & Guirguis, 2015). At the same time, additional researchers argue that the hybrid learning will be the most used method in universities (Norberg, Dziuban, & Moskal, 2011; Bonk & Graham, 2006). The application of technology in teaching methodology has a positive impact on students' satisfaction and effectiveness (Huang, 2014).

Ron Owston, Dennis York and Susan Murtha (2013) analyzed the existing correlation between students' perceptions and academic achievement in the hybrid learning. The research uncovered a very important correlation between students' perceptions and academic achievement. Students, whom had acheived higher academic results through the hybrid learning, were willing to complete another course through the hybrid learning and preferred to receive lessons through the hybrid learning. The opposite occurred with students who had a lower academic achievement level through the hybrid learning, they were not inclined to attend another hybrid course, and had a preference for the traditional learning. Other researchers have arrived at a similar conclusion (Castle & McGuire, 2010; Svanum & Aigner, 2011; Delaney, 2008; Melton, Graf, & Chopak-Foss, 2009).

Figure 1 represents the range of the hybrid learning.

<p>Same place, same time</p> 	<p>Different place, same place, same time, different time</p> 	<p>Anytime, anyplace</p> 
<p>Traditional Learning</p>	<p>Hybrid Learning</p>	<p>E-learning</p>

Figure 1: Range of the Hybrid learning

Figure 2 represents the range of e-learning (Proctor, 2002)

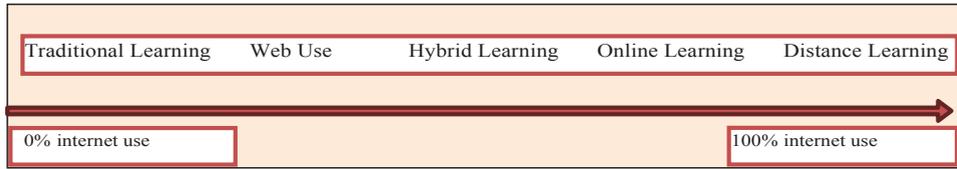


Figure 2: Spectrum of e-learning

Allen and Seaman (2011) suggested the classification of methods in four groups. The table below represents a detailed explanation.

**Table 1: Classification of instruction methods based on technology use**

Percentage of online study program	Learning	Detailed description for each teaching method
0%	Traditional	This teaching method does not make use of modern technology. Study materials are available in printed form. It is based only on the professor’s lecturing. The study program is available only on the university campus.
1% - 29%	Web use	This teaching method makes use of technology and is necessary for traditional courses. This includes, usage of an instruction management system or usage of webpages in order to display course syllabus, homework, and course materials.
30% - 79%	Hybrid	The hybrid learning is a combination between the traditional and online learning. Course materials are offered online, class discussions are also conducted online and lectures are available both online and in-class. The study program takes place on university campuses and online.
80% - 100%	Online	This type of course is available online for most or all of the duration of the study program. No parts of instruction takes place on university campuses. The study program can be pursued from anywhere and anytime.

Source: Babson Survey Research Group

Main research question is:

1. Does there exist a correlation between teaching methods and the perception of the student on the effectiveness of teaching methods?

Other research questions related to the study are:

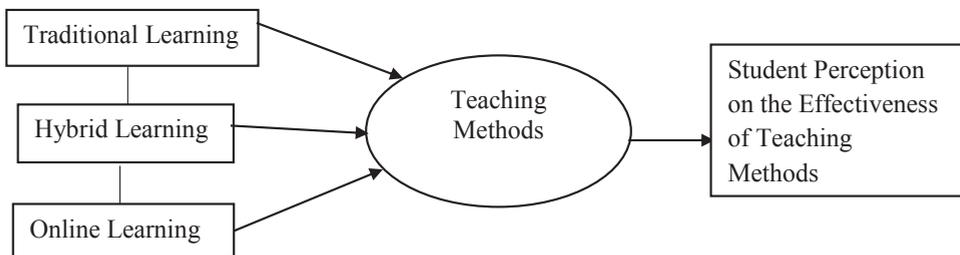
1. Which method is preferred by students to conduct lessons?
2. Which method is preferred by students to conduct seminars?

3. Which is the method preferred by students to conduct discussions?
4. Through which method a student attains the highest results?
5. Which method is most effective to study according to students?

The study hypotheses are:

- H1a: Students' perception on the effectiveness of the traditional learning, online learning and hybrid learning, is the same. ( $\alpha=0.05$ )
- H1b: Students' perception on the effectiveness of the traditional learning, online learning and hybrid learning, is the same based on classification according to study program. ( $\alpha=0.05$ )
- H1c: Students' perception on the effectiveness of the traditional learning, online learning and hybrid learning, is the same based on classification according to gender. ( $\alpha=0.05$ )
- H1d: Students' perception on the effectiveness of the traditional learning, online learning and hybrid learning, is the same based on classification according to study cycle. ( $\alpha=0.05$ )
- H1e: Students' perception on the effectiveness of the traditional learning, online learning and hybrid learning, is the same based on classification according to the students' academic results. ( $\alpha=0.05$ )
- H1f: There exists a correlation between the traditional learning and the students' perception on the effectiveness of teaching methods. ( $\alpha=0.05$ )
- H1g: There exists a correlation between the hybrid learning and the students' perception on the effectiveness of teaching methods. ( $\alpha=0.05$ )
- H1h: There exists a correlation between the online learning and the students' perception on the effectiveness of teaching methods. ( $\alpha=0.05$ )

Conceptual model used in this study:



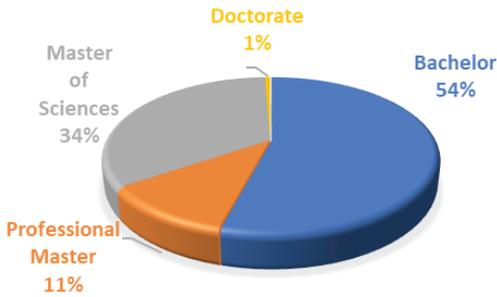
## 2. Methodology

This study uses quantitative research and the research method is descriptive analysis and comparative analysis. The instrument employed in this research is the questionnaire. The questionnaire utilized is a combination of questionnaires used in scientific research (Brooks, 2016). The questionnaire consists of 18 closed ended questions, and is divided onto 3 parts, including demographic data. The responses are scaled through a 6-point Likert scale ranging from "Not Applicable" to "Strongly

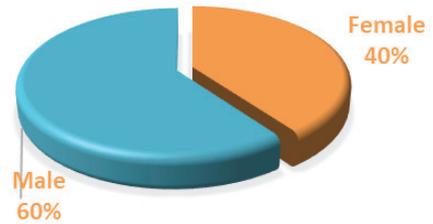
Agree". The first part consists of 7 questions about teaching methods. The second part consists of 5 questions about students' perceptions on teaching methods. The last part consists of questions regarding demographic data.

The study sample are 186 Albanian university students. Valid questionnaires concerning this study are 168, whereas 18 questionnaires are incomplete. The rate of return is 90%. The graphs below are representations of students according to study cycles, gender, study area, and Grade Average.

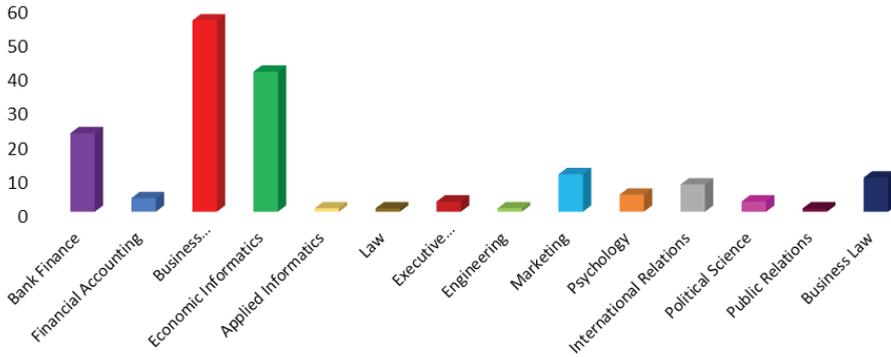
**Graph 1: Students according to study levels**



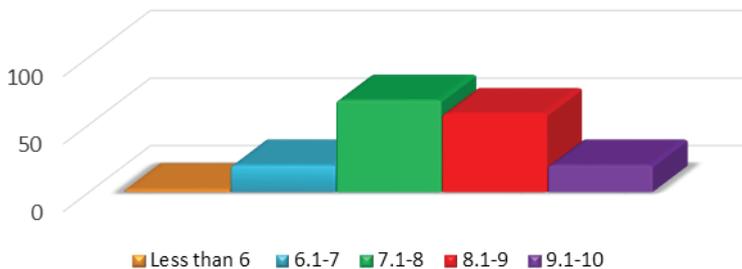
**Graph 2: Gender**



**Graph 3: Student Distribution According to Area of Study**



**Graph 4: Grade Average**



In order to analyze the data SPSS 20 and JASP.0.8.0.1 were applied. The reliability coefficient Cronbach's Alpha was used to measure the validity of the research instrument. Reliability coefficient Cronbach's  $\alpha$  for the questionnaire is 0.809. The data from Table 3 shows that the value of Cronbach's Alpha coefficient for each variable varies from 0.777 to 0.810.

**Table 2: Reliability Coefficient Cronbach's Alpha**

	Cronbach's $\alpha$
scale	0.809

*Note.* Scale consists of items online learning, traditional learning, hybrid learning, perception on the effectiveness of the traditional learning, perception on the effectiveness of the online learning, perception on the effectiveness of the hybrid learning

**Table 3: Reliability Coefficient Cronbach's Alpha for each variable**

	If item dropped Cronbach's $\alpha$
Online learning	0.786
Traditional learning	0.810
Hybrid learning	0.789
Perception on the effectiveness of the traditional learning	0.797
Perception on the effectiveness of the online learning	0.795
Perception on the effectiveness of the hybrid learning	0.777

### 3. Empirical Analysis

Descriptive statistics provides detailed information for each variable. Table 4 provides descriptive data, showing that of the three methods of teaching, the hybrid learning has the highest mean (4.554). The values of the other variables range from 3.833 to 4.554. It must be emphasized that the values of standard deviation range between 0.8594 and 0.9840. This means that there is a distribution of values about the mean.

**Table 4: Descriptive Data for the Variables**

	Traditional learning	Perception on the Effectiveness of the Traditional learning	Online learning	Perception on the Effectiveness of the Online learning	Hybrid learning	Perception on the Effectiveness of the Hybrid learning
Valid	168	168	168	168	168	168
Missing	0	0	0	0	0	0
Mean	4.208	4.018	4.274	3.833	<b>4.554</b>	4.190
Std. Error of Mean	0.07592	0.07479	0.06998	0.06630	0.06635	0.07407
Std. Deviation	0.9840	0.9694	0.9071	0.8594	0.8600	0.9600

**Table 4: Descriptive Data for the Variables**

	Traditional learning	Perception on the Effectiveness of the Traditional learning	Online learning	Perception on the Effectiveness of the Online learning	Hybrid learning	Perception on the Effectiveness of the Hybrid learning
Minimum	2.000	2.000	1.000	1.000	1.000	1.000
Maximum	6.000	6.000	6.000	6.000	6.000	6.000

The data from Table 5 show that the most significant statistical correlation exists between the hybrid learning and the perception of students on the effectiveness of teaching methods  $p < 0.001$  (0.406). The online learning is strongly correlated to the students' perception on the effectiveness of teaching methods  $p < 0.001$  (0.323). Meanwhile, the traditional learning has an insignificant statistical correlation with the perception of students on the effectiveness of teaching methods. Tables 5 answers the main research question.

**Table 5: Pearson Correlations**

		Traditional learning	Online learning	Hybrid learning	Students' Perception on the Effectiveness of Teaching Methods
Traditional learning	Pearson's r	—	-0.225**	-0.102	0.120
	p-value	—	0.003	0.190	0.121
	Upper 95% CI	—	-0.076	0.050	0.267
	Lower 95% CI	—	-0.364	-0.249	-0.032
Online learning	Pearson's r		—	0.373***	0.323***
	p-value		—	< .001	< .001
	Upper 95% CI		—	0.496	0.452
	Lower 95% CI		—	0.234	0.180
Hybrid learning	Pearson's r			—	<b>0.406***</b>
	p-value			—	< .001
	Upper 95% CI			—	0.525
	Lower 95% CI			—	0.272
Students' Perception on the Effectiveness of Teaching Methods	Pearson's r				—
	p-value				—
	Upper 95% CI				—
	Lower 95% CI				—

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

*Which method is preferred by students to conduct lessons?*

Table 6 shows that 115 students prefer lessons that combine lectures with practice, 28 prefer in-class lectures and 25 prefer online lessons with video for every topic. Analysis concludes that students prefer lessons that combine theory with practice.

**Table 6: Lesson**

	Frequency	Percent	Valid Percent	Cumulative Percent
In-class lesson	28	16.7	16.7	16.7
Lesson with video for every topic	25	14.9	14.9	31.5
Lesson combining lectures with practice	115	68.5	68.5	100.0
Total	168	100.0	100.0	

*Which method is preferred by students to conduct seminars?*

Most preferred are seminars that are a combination of in-class seminars and online seminars. In-class seminars and online seminars follow in that order. Table 7 presents the three options in detail.

**Table 7: Seminar**

	Frequency	Percent	Valid Percent	Cumulative Percent
In-class seminars	53	31.5	31.5	31.5
Online seminars	24	14.3	14.3	45.8
Combination of the two	91	54.2	54.2	100.0
Total	168	100.0	100.0	

*Which is the method preferred by students to conduct discussions?*

An important element of the teaching process is discussions. Students tend toward discussions that combine online with in-class discussions. In-class discussions come second and online discussions come third. Table 8 presents students' choices for the different types of discussions.

**Table 8: Discussion**

	Frequency	Percent	Valid Percent	Cumulative Percent
In-class discussions	51	30.4	30.4	30.4
Online discussion	20	11.9	11.9	42.3
Combination of the two	97	57.7	57.7	100.0
Total	168	100.0	100.0	

*Through which method a student attains the highest results?*

Academic achievement is very important to a student. The values from Table 9 show that students partaking of the traditional learning have attained the highest results. It must be noted that a large number of students had not taken online or hybrid courses before. Results attained through the hybrid learning are second and results attained through the online learning are third.

**Table 9: Results**

	Frequency	Percent	Valid Percent	Cumulative Percent
Online learning	23	13.7	13.7	13.7
Hybrid learning	51	30.4	30.4	44.0
Traditional learning	94	56.0	56.0	100.0

**Table 9: Results**

	Frequency	Percent	Valid Percent	Cumulative Percent
Total	168	100.0	100.0	

*Which method is most effective to study according to students?*

Practice is the method deemed most effective to study according to 69 students. Solving problems and reading are evaluated similarly effective and the method least effective is the discussion. Table 10 provides data in detail.

**Table 10: Most effective method to study**

	Frequency	Percent	Valid Percent	Cumulative Percent
Practice	69	41.1	41.1	41.1
Solving problems	34	20.2	20.2	61.3
Reading	34	20.2	20.2	81.5
Discussion	31	18.5	18.5	100.0
Total	168	100.0	100.0	

*H1a: Students' perception on the effectiveness of the traditional learning, online learning and hybrid learning, is the same. ( $\alpha=0.05$ )*

In order to prove hypothesis H2a One Sample T-Test is used. The value of p is analyzed. The value of p is smaller than  $\alpha=0.05$ , which means that there exist significant differences in students' perception on the effectiveness of the methods. Table 11 values show that there exist differences between students' perceptions on the effectiveness of the online learning, students' perceptions on the effectiveness of the hybrid learning and students' perceptions on the effectiveness of the traditional learning. Based on this analysis hypothesis H2a is rejected.

**Table 11: One Sample T-Test**

	t	df	p	Mean Difference	95% Confidence Interval	
					Lower	Upper
Perception on the effectiveness of the traditional learning	53.72	167	< .001	4.018	3.870	4.166
Perception on the effectiveness of the online learning	57.82	167	< .001	3.833	3.702	3.964
Perception on the effectiveness of the hybrid learning	56.58	167	< .001	4.190	4.044	4.337

*Note.* Student's T-Test.

*H1b: Students' perception on the effectiveness of the traditional learning, online learning and hybrid learning, is the same based on classification according to study program. ( $\alpha=0.05$ )*

One-Way Anova (Table 12) is used for hypothesis H2b, where Sig(p) value is of importance. Analyzing the value that Sig attains shows that there exist significant differences in the perception of the effectiveness of the traditional learning. Simultaneously, there do not exist significant differences in the perception of the effectiveness of the online and hybrid learnings, because Sig is greater than  $\alpha=0.05$ . Therefore, hypothesis H2b is rejected, as there exist significant differences in the

perception of effectiveness of the traditional learning.

**Table 12: One - Way ANOVA**

		Sum of Squares	df	Mean Square	F	Sig.
Perception on the effectiveness of the traditional learning	Between Groups	34.263	13	2.636	3.308	.000
	Within Groups	122.684	154	.797		
	Total	156.946	167			
Perception on the effectiveness of the online learning	Between Groups	12.982	13	.999	1.394	.168
	Within Groups	110.351	154	.717		
	Total	123.333	167			
Perception on the effectiveness of the hybrid learning	Between Groups	9.644	13	.742	.792	.668
	Within Groups	144.261	154	.937		
	Total	153.905	167			

*H1c: Students' perception on the effectiveness of the traditional learning, online learning and hybrid learning, is the same based on classification according to gender. ( $\alpha=0.05$ )*

Table 13 values show that perception on the effectiveness of the hybrid learning changes according to gender. Value p is taken for analysis, smaller than  $\alpha=0.05$ , which shows that there exist significant statistical differences. Value  $p=0.846$  standing for perception of effectiveness of the traditional learning and value  $p=0.345$  standing for perception of the effectiveness of the online learning show that there are no significant statistical differences on perception of the effectiveness between females and males. Hypothesis H2c is rejected because there exist differences for one of the variables.

**Table 13: Independent Samples T-Test**

	t	df	p	Mean Difference	SE Difference	95% Confidence Interval	
						Lower	Upper
Perception on the effectiveness of the traditional learning	-0.194	166.0	0.846	-0.030	0.151	-0.332	0.273
Perception on the effectiveness of the online learning	0.947	166.0	0.345	0.128	0.135	-0.139	0.396
Perception on the effectiveness of the hybrid learning	3.068	166.0	<b>0.003</b>	0.453	0.142	0.161	0.744

Note. Student's T-Test.

*H1d: Students' perception on the effectiveness of the traditional learning, online learning and hybrid learning, is the same based on classification according to study cycle. ( $\alpha=0.05$ )*  
 In this case One-Way Anova is used. The value Sig.(p) in Table 14 is greater than value  $\alpha=0.05$  for all three variables. This means that there do not exist significant statistical differences. Hypothesis H2d is supported with confidence interval 95%.

**Table 14: One - Way ANOVA**

		Sum of Squares	df	Mean Square	F	Sig.
Perception on the effectiveness of the traditional learning	Between Groups	6.660	3	2.220	2.423	.068
	Within Groups	150.286	164	.916		
	Total	156.946	167			
Perception on the effectiveness of the online learning	Between Groups	3.933	3	1.311	1.801	.149
	Within Groups	119.400	164	.728		
	Total	123.333	167			
Perception on the effectiveness of the hybrid learning	Between Groups	4.024	3	1.341	1.468	.225
	Within Groups	149.881	164	.914		
	Total	153.905	167			

*H1e: Students' perception on the effectiveness of the traditional learning, online learning and hybrid learning, is the same based on classification according to the students' academic results. ( $\alpha=0.05$ )*

Table 15 values show that there do not exist significant differences, value p for all three variables is greater than  $\alpha=0.05$ . This means that the students' perception of the effectiveness of a teaching methodology is the same regardless academic results. Hypothesis H2e is supported with confidence interval 95%.

**Table 15: One - Way ANOVA**

		Sum of Squares	df	Mean Square	F	Sig.
Perception on the effectiveness of the traditional learning	Between Groups	3.870	4	.968	1.030	.393
	Within Groups	153.076	163	.939		
	Total	156.946	167			
Perception on the effectiveness of the online learning	Between Groups	.596	4	.149	.198	.939
	Within Groups	122.738	163	.753		
	Total	123.333	167			

Perception on the effectiveness of the hybrid learning	Between Groups	8.218	4	2.055	2.299	.061
	Within Groups	145.687	163	.894		
	Total	153.905	167			

To prove hypotheses H1f, H1g, H1h linear regression analysis is used. The results from Table 16 show that the independent variables (traditional learning, online learning and hybrid learning) explain 22.7% of the variance, where Adjusted R<sup>2</sup>=0.227, F=17.34 and p<0.001. This means that there exists a significant correlation between the independent variables and the dependent variable.

**Table 16: Regression results between teaching methods and perception of effectiveness of teaching methods**

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	RMSE	R <sup>2</sup> Change	F Change	df1	df2	p
Teaching Methods	0.491	0.241	0.227	0.556	0.241	17.34	3	164	< .001

**Table 17: Regression results between each teaching method and perception of effectiveness of teaching methods**

Model		Unstandardized	Standard	Standardized	t	p
		$\beta$	Error	$\beta$		
1	(Constant)	1.538	0.356		4.319	< .001
	Traditional learning	0.134	0.045	0.209	2.997	0.003
	Online learning	0.171	0.052	0.245	3.269	0.001
	Hybrid learning	0.247	0.054	0.336	4.586	< .001

*H1f: There exists a correlation between the traditional learning and the students' perception on the effectiveness of teaching methods. ( $\alpha=0.05$ )*

The traditional learning has a significant positive correlation to student perception on the effectiveness of teaching methods, with coefficient Beta=0.209, t=2.997 and p=0.003 (Table 17). Both variable move in the same direction. The traditional learning has an impact on student perception on the effectiveness of teaching methods. Hypothesis H1f is supported with confidence interval 95%.

*H1g: There exists a correlation between the hybrid learning and the students' perception on the effectiveness of teaching methods. ( $\alpha=0.05$ )*

The hybrid learning has the strongest correlation to student perception on the effectiveness of teaching methods, with coefficient Beta =0.336, t= 4.586 and p<0.001 (Table 17). It has great impact on the perception of students for the effectiveness of teaching methods. Hypothesis H1g is supported with confidence interval 95%.

*H1h: There exists a correlation between the online learning and the students' perception on the effectiveness of teaching methods. ( $\alpha=0.05$ )*

There exists a significant correlation between the online learning and student perception on the effectiveness of teaching methods, with coefficient Beta=0.245, t=3.269 and p=0.001 (Table 17). The positive correlation between variables means that the increase of one variable influences the increase of the other variable. Hypothesis

H1h is supported with confidence interval 95%.

## Conclusions and Recommendations

This research paper focuses on analyzing the impact of teaching methods on the perception of students about the effectiveness of these teaching methods. Students prefer to pursue their program of study though the hybrid learning. The same conclusion developed when students were asked about specific elements. The literature review concurs with such conclusion. The hybrid learning is being visited by students in greater numbers. Teaching methods have a positive impact on dependent variable. The most significant correlation exists between the student perception of the effectiveness of teaching methods, with coefficient Beta =0.336, t= 4.586 and  $p < 0.001$ . Students perceive the hybrid learning as the most effective teaching method. Whereas, the online learning is perceived as the least effective teaching method. There exist significant differences in the perception of students on the effectiveness of teaching methods.

Students were inclined to attend again courses through the online and hybrid methods. Albanian universities must implement study programs with online and hybrid courses. Another recommendation is the reviewing of the curricula, so that more technology is include in teaching processes.

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