Research Article

Learning Styles and the Hybrid Learning: An Empirical Study about the Impact of Learning Styles on the Perception of the Hybrid Learning

Ariel Ora

Carleton University, Ottawa, Canada

Roland Sahatcija

Mediterranean University of Albania, Albania

Anxhela Ferhataj

European University of Tirana, Albania

Abstract

Learning style is a crucial element in the academic life of students. It plays a fundamental role in the selection of a suitable teaching method of instruction. The aim of this research paper is the study of the perception of the hybrid learning and students' learning style. In addition, another objective of the study is to analyze the perception of the hybrid learning in accordance with the learning style. This paper employs quantitative research and the descriptive and comparative methods. The study sample consists of 89 Albanian university students. Data analysis was conducted through SPSS 20 and JASP-0.8.1.2. The statistical analyses utilized in this paper are distribution tables, crossed tabulation, student test, Pearson correlation coefficient, Bayesian Independent Samples T-Test, and One - Way ANOVA. The conclusion of the data analysis shows that most students used the visual learning style in order to study. Students have a positive perception of the hybrid learning. There exists an insignificant statistical correlation between learning styles and the perception of the hybrid learning. The area of study has an impact on the components of the hybrid learning.

Keywords: learning style, visual learning style, aural learning style, kinesthetic learning style, perception of the hybrid learning, components of the hybrid learning

1. Introduction

Students prefer to study subjects in different ways. Every student chooses the manner which appears to be the easiest. In order to be effective, students ought to apply the learning style with which they are most compatible. A fitting style is beneficial because it will help them achieve higher results. Simultaneously, acquainting themselves with their students' learning styles, will help professors to apply the most suitable instruction method. The hybrid learning is the most compatible method for all student types, as it combines the traditional and online learning (Collopy & Arnold, 2009). Moreover, this instruction method is viewed as the teaching method of the future by many (Collopy & Arnold, 2009; Dziuban, Graham, & Picciano, 2014; Gómez & Duart, 2012; Güzera & Canera, 2014; Bonk & Graham, 2006). The advantages that this teaching method offers are multifold. How do students perceive the hybrid learning? How are the components of the hybrid learning valued? Are there differences in the perceptions of students for the hybrid learning based

on learning styles? What is the learning style of students? All these questions will be answered in this study. The purpose of the paper is to study the perception of the hybrid learning and the learning styles of students. Another objective is the analysis of the perception of the hybrid learning in accordance to the learning style. The study of instruction styles are a new field of research, which is fundamentally important to both students and universities.

2. Literature Review

The hybrid learning has a number of advantages for both students and professors. It has a positive impact on students' academic achievement, student satisfaction, makes for efficient use of resources, increases students' communication abilities. Studies have concluded that it has a positive impact on students' academic performance (Boyle, Bradley, Chalk, Jones, & Pickard, 2003; Dziuban, Graham, & Picciano, 2014; Dziuban, Moskal, & Hartman, 2004; Garnham & Kaleta, 2002; Lim & Morris, 2009; O'Toole & Absalom, 2003; López-Pérez, Pérez-López, & Rodríguez-Ariza, 2011). Promsurin and Vitayapirak (2015) reached to the conclusion that the hybrid learning has a positive impact on both academic results and student satisfaction. Blankson and Kyei-Blankson (2008) obtained the same conclusion. Multiple empirical studies conclude that hybrid courses are the most effective (Means, Toyama, Murphy, Bakia, & Jones, 2010; Ajide & Tik, 2009; Atiyah, El Sherbiny, & Guirguis, 2015). Several researchers believe that the hybrid learning will be the most utilized method in universities (Norberg, Dziuban, & Moskal, 2011; Bonk & Graham, 2006). It assists students in integrating their existing and new knowledge. In this manner the student self-manages the study program (Osguthorpe & Graham, 2003). Similarly, the student decides the study time (Garnham & Kaleta, 2002; Smyth, Houghton, Cooney, & Casey, 2012; Gómez & Duart, 2012; Mitchell & Honore, 2007). Studies show that students who pursue courses through the hybrid learning are better motivated and pay more attention during the study process (Sharpe, Benfield, Roberts, & Francis, 2006; Woltering, Herrler, Spitzer, & Spreckelsen, 2009; Donnelly, 2010; Wang, Shen, Novak, & Pan, 2009; Martinez-Caro & Campuzano-Bolarin, 2011). Professors argue that hybrid courses develop critical thinking skills in students. This teaching method also has an impact on the quality of instruction (Garrison & Vaughan, 2008; Ajide & Tik, 2009; Glazer, 2011; Owston, York, & Murtha, 2013; Owston, Wideman, Murphy, & Lupshenyuk, 2008; Thorne, 2003).

Students have their own way of studying. The manner in which they study is called a learning style (Ford & Chen, 2000). Everyone learns through different methods, as a result there exist different learning styles. Certain researchers have studied the impact that gender has on learning styles (Bidabadi & Yamat, 2010; Wehrwein, Lujan, & DiCarlo, 2007). Bidabadi and Yamat (2010) concluded that gender does not have an impact on learning style preferences. Conversely, Wehrwein, Lujan and DiCarlo (2007) concluded that gender impacts learning styles.

This research study will employ VAK (Fleming, 1995) in order to determine learning styles, which include the visual, aural and kinesthetic learning styles. Students who use the visual learning style prefer to learn through images, pictures, diagrams, and films. They have a preference for diagramatic and schematic displays. Whereas, students who use the aural learning style prefer receiving information through listening and discussing. Such students best learn by remembering what they have heard. Last, students who learn through the kinesthetic learning style prefer hands-on experiences through tactile exploration, by touching, experimenting and doing. These students tend to pursue their perceptions rather than instructions. Identifying the student's learning style assists professors in developing a compatible learning process. Its impact is direct on student engagement and outcomes (Bostrom & Lassen, 2006). The conclusions of research on a correlation between learning styles and the perception of teaching methods are contradictory. Some argue that there exists a strong correlation between the two (Graff, 2003; Dobson, 2010), while others argue that there does not exist a correlation between them (Shaw & Marlow, 1999; Yari, 2012; Torre, 2013).
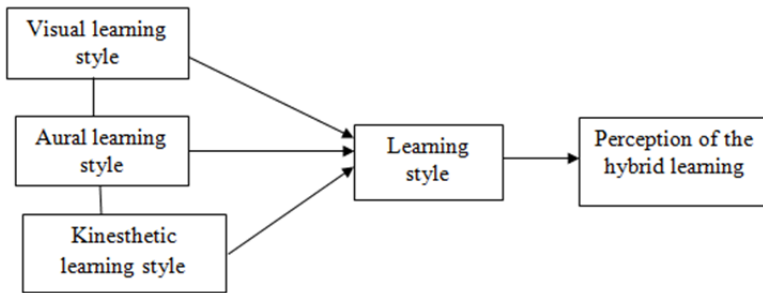
The research questions are:
1. Which is the students' learning style?
2. What is student perception of the hybrid learning?
3. Does study style impact student perception of the hybrid learning?
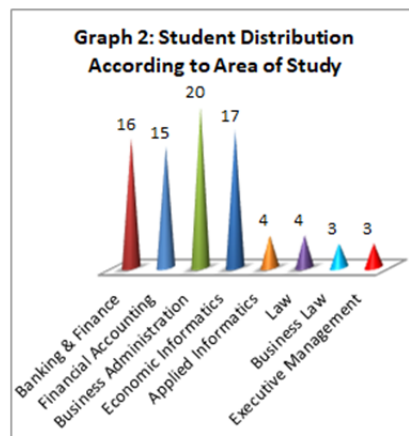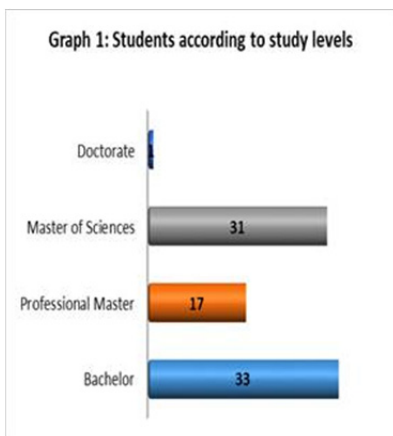
The research hypotheses are:

- ❖ H1a: Students with different learning styles have the same perception of the hybrid learning (α=0.05).
- ❖ H1b: Students with different learning styles value the same the components of the hybrid learning (α=0.05).
- ❖ H2: Gender does not have an impact on learning style (α=0.05).
- ❖ H3: Students from different study areas have the same learning style preference (α=0.05).
- ❖ H4: Male and female students have the same perception of the hybrid learning (α=0.05).
- ❖ H5: Students from different study areas have the same perception of the hybrid learning (α=0.05).
- ❖ H6: Students with different academic results have the same perception of the hybrid learning (α=0.05).

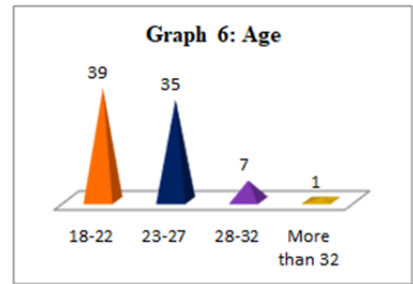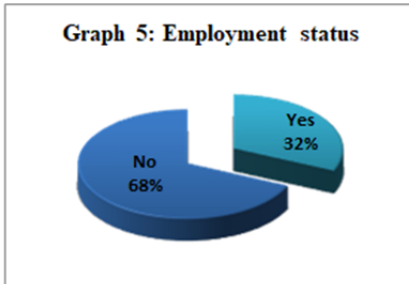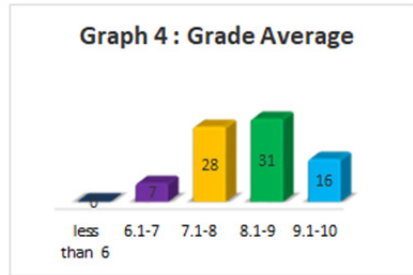The conceptual model used in this study is as follows:

3. Methodology

The method used is descriptive and comparative analysis. The research instrument is the questionnaire (Fleming, 1995). The questionnaire considers two dimensions: student learning style and the perception of the hybrid learning. The first part consists of questions with alternatives, whereas, the second part contains a 5-point Likert scale survey, ranging from "Strongly Agree" to "Strongly Disagree". The questionnaires were distributed online during the second semester of the 2016-2017 academic year. The participants are 89 Albanian university students. Fully completed questionnaires are 82. The response return rate is 92.1%. The descriptive data of the sample study is displayed below.

ISSN 2039-2117 (online)
ISSN 2039-9340 (print)

Mediterranean Journal of
Social Sciences

Vol 9 No 1
January 2018

Graph 3: Gender

Graph 4 : Grade Average

Graph 5: Employment status

Graph 6: Age
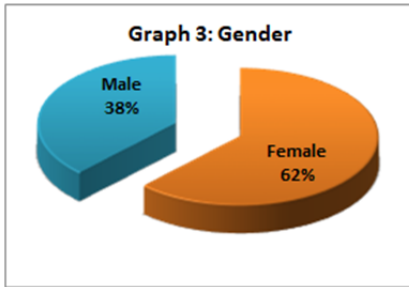
SPSS 20 and JASP-0.8.1.2 were utilized for data analysis. Cronbach' α coefficient for the questionnaire is 0.758 (Table 1). The data of the study are valid for analytical purposes. Table 2 provides the reliability coefficients for each variable.

Table 1: Cronbach's α coefficient of the questionnaire

	Cronbach's α
scale	0.758

Note. Scale consists of items perception of the hybrid learning, learning style

Table 2: Cronbach's α coefficient of variables

	If item dropped Cronbach's α
Perception of the hybrid learning	0.757
Learning style	0.752

4. Empirical analysis

The perception of the hybrid learning has the highest mean = 3.805. The standard deviation is low, for the learning style 0.8084 and the perception of the hybrid learning 0.5760. Between the values there do not exist great differences, thus the data are distributed around the mean value.

Table 3: Descriptive statistics of the variables

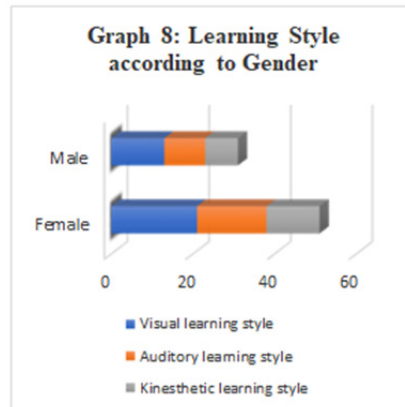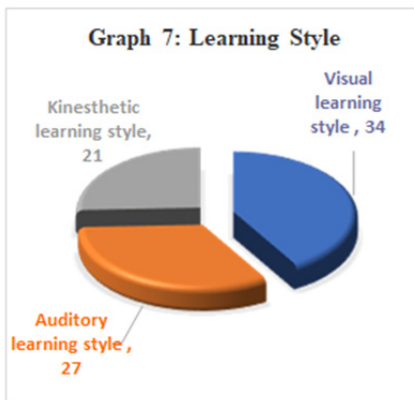|	Learning style	Perception of the hybrid learning
Valid	82	82
Missing	0	0
Mean	1.841	**3.805**
Std. Deviation	0.8084	**0.5760**
Minimum	1.000	2.000
Maximum	3.000	5.000

Which is the students' learning style?

The largest part of the surveyed students belong to the visual learning style. Of 82 students, 34 prefer studying through the visual learning style, 27 students choose the aural learning style and 21 prefer the kinesthetic learning style to study. All three styles are utilized by students. A similar distribution occurs when studying male and female preferences. Table 5 shows detailed preferences of learning style in accordance with gender. Graphs 7 and 8 are diagrammatic representations of the preferences.

Table 4: Learning style

	Frequency	Percent	Valid Percent	Cumulative Percent
Visual learning style	34	41.5	41.5	41.5
Aural learning style	27	32.9	32.9	74.4
Kinesthetic learning style	21	25.6	25.6	100.0
Total	82	100.0	100.0	

Table 5: Learning style and gender

	Gender:		
Learning style	**Female**	**Male**	**Total**
Visual learning style	21	13	34
Aural learning style	17	10	27
Kinesthetic learning style	13	8	21
Total	51	31	82

Graph 7: Learning Style

Graph 8: Learning Style according to Gender

What is student perception of the hybrid learning?

Student evaluation of the hybrid learning is positive. User-friendliness has the highest valuation of the components of the hybrid learning with mean value 3.854. Second place, general output, mean value 3.732. Third place, course quality, mean value 3.707. Last, purpose of use, mean value 3.646. Student evaluation for hybrid learning is 3.805.

Tabela 6: Hybrid Learning

	N	Mean	SD	SE
User-friendliness	82.00	**3.854**	0.669	0.074
Course quality	82.00	3.707	0.598	0.066
Purpose of use	82.00	3.646	0.655	0.072
General output	82.00	3.732	0.754	0.083
Perception of the hybrid learning	82.00	3.805	0.576	0.064

Does learning style impact student perception of the hybrid learning?

Table 7 shows that Pearson correlation coefficient is 0.092 and p = 0.412. Thus, between learning style and the perception of the hybrid learning there does not exist a significant statistical correlation. Between the two variables there exists a weak positive insignificant correlation. From the analysis it is concluded that learning style does not have an impact on student perception of the hybrid learning.

Table 7: Pearson Correlations

		Learning style	Perception of the hybrid learning
Learning style	Pearson's r	—	0.092
	p-value	—	0.412
	Upper 95% CI	—	0.303
	Lower 95% CI	—	-0.128
Perception of the hybrid learning	Pearson's r		—
	p-value		—
	Upper 95% CI		—
	Lower 95% CI		—

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

H1a: Students with different learning styles have the same perception of the hybrid learning (α=0.05).

Table 8 values demonstrate Sig .660 (Table 8). As a result, there do not exist significant differences, therefore students with different learning styles have the same perception of the hybrid learning. Mean valuations of the hybrid learning have insignificant differences between them (Table 9). However, students who study through the kinesthetic learning style have the highest valuation. Analysis shows that students have the same perception of the hybrid learning, thus hypothesis H1a is supported with confidence interval 95%.

Table 8: One – Way ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.282	2	.141	.418	.660
Within Groups	26.596	79	.337		
Total	26.878	81			

Table 9: Descriptive data of learning styles

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Visual learning style	34	3.74	.511	.088	3.56	3.91	2	4
Aural learning style	27	3.85	.662	.127	3.59	4.11	2	5
Kinesthetic learning style	21	3.86	.573	.125	3.60	4.12	3	5
Total	82	3.80	.576	.064	3.68	3.93	2	5

H1b: Students with different learning styles value the same the components of the hybrid learning (α=0.05).

Students applying the visual, aural and kinesthetic learning styles have the same valuation of the hybrid learning. There do not exist significant statistical differences between them. The perception of the components of the hybrid learning is the same between students, thus hypothesis H1b is supported with confidence interval 95%. Values are displayed in detail on Table 10: One-Way Anova.

Table 10: One – Way ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
	Between Groups	.209	2	.104	.229	.796
User-friendliness	Within Groups	36.035	79	.456		
	Total	36.244	81			
	Between Groups	1.914	2	.957	2.302	.107
Purpose of use	Within Groups	32.830	79	.416		
	Total	34.744	81			
	Between Groups	.095	2	.048	.130	.878
Course quality	Within Groups	28.880	79	.366		
	Total	28.976	81			
	Between Groups	.582	2	.291	.505	.605
General output	Within Groups	45.515	79	.576		
	Total	46.098	81			

H2: Gender does not have an impact on learning style (α=0.05).

In order to prove hypothesis H2, Table 11 is used: Independent Samples T-Test. Value of p is greater than 0.05. Gender does not have an impact of learning style. Female students have the same preferences as male students. Hypothesis H2 is supported with confidence interval 95%. Table 12 provides descriptive statistics on gender. Graph 9 is a representation of Bayesian analysis which supports diagrammatically hypothesis H2 (graph H_0).
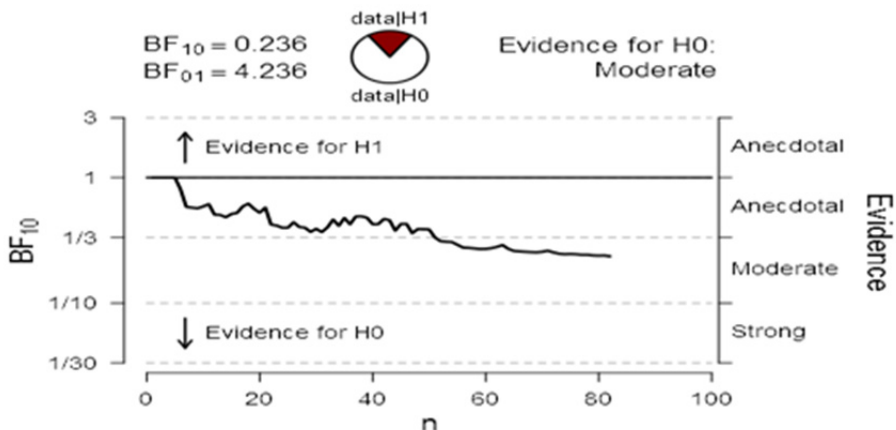
Table 11: Independent Samples T-Test

	t	df	p	Mean Difference	SE Difference	95% Confidence Interval Lower	95% Confidence Interval Upper
Studu style	0.024	80.00	0.981	0.004	0.186	-0.364	0.373

Note. Student's T-Test.

Table 12: Descriptive data of gender

	Group	N	Mean	SD	SE
Study style	Female	51	1.843	0.809	0.113
	Male	31	1.839	0.820	0.147

**Graph 9:** Gender and learning style

H3: Students from different study areas have the same learning style preference (α=0.05).

Area of study does not have an impact on learning style. Every student has their way of studying regardless of the study program. Students from different areas of study prefer similar learning styles. Sig value .805 (Table 13), which supports hypothesis H3 with confidence interval 95%. Graph 10 shows preferences for learning styles in accordance with study area.

Table 13: One – Way ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.552	7	.365	.535	.805
Within Groups	50.387	74	.681		
Total	52.939	81			
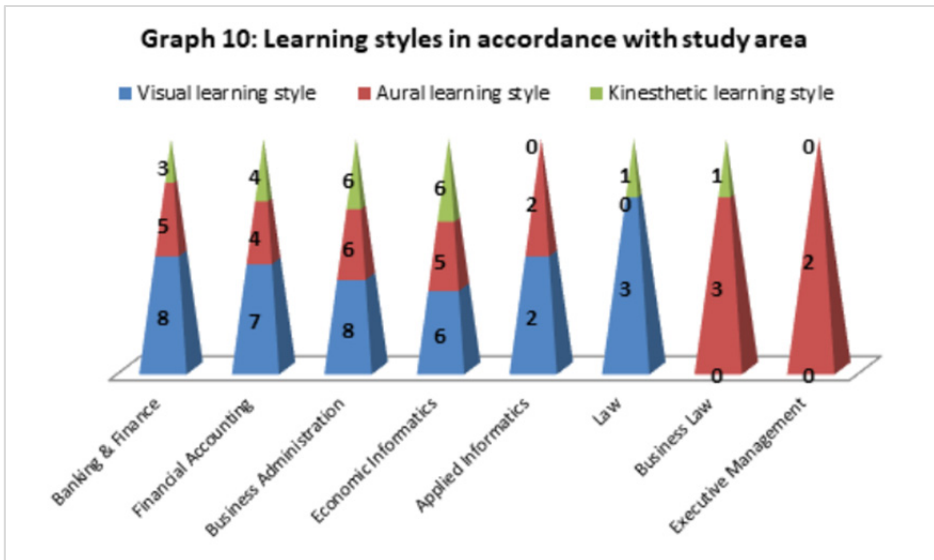
Graph 10: Learning styles in accordance with study area

H4: Male and female students have the same perception of the hybrid learning (α=0.05).

Table 14 shows values of p are greater than α = 0.05. The perception of the hybrid learning and the components of the hybrid learning is the same for male and female students. Between them there do not exist significant differences. Hypothesis H4 is supported with confidence interval 95%. Mean value for males is highest for the three components of the hybrid learning (user-friendliness, course quality, general output) and the perception of the hybrid learning. Female students have the highest mean value for purpose of use (Table 15).

Table 14: Independent Samples T-Test

	t	df	p	Mean Difference	SE Difference
User-friendliness	-0.182	80.00	0.856	-0.028	0.144
Course quality	-1.173	80.00	0.244	-0.159	0.136
Purpose of use	0.359	80.00	0.721	0.054	0.146
General output	-0.095	80.00	0.924	-0.016	0.162
Perception of the hybrid learning	-1.209	80.00	0.230	-0.158	0.128

Note. Student's T-Test.

Table 15: Descriptive statistics

	Group	N	Mean	SD	SE
User-friendliness	Female	51	3.843	0.731	0.102
	Male	31	3.871	0.562	0.101
Course quality	Female	51	3.647	0.594	0.083
	Male	31	3.806	0.601	0.108
Purpose of use	Female	51	3.667	0.683	0.096
	Male	31	3.613	0.615	0.110
General output	Female	51	3.725	0.827	0.116
	Male	31	3.742	0.631	0.113
Perception of the hybrid learning	Female	51	3.745	0.595	0.083
	Male	31	3.903	0.539	0.097

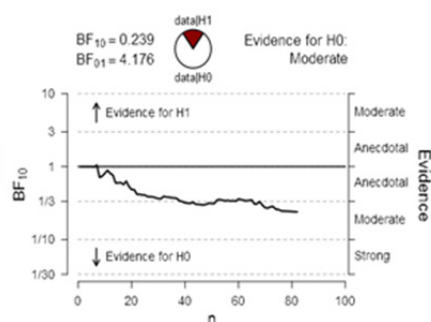*H5: Students from different study areas have the same perception of the hybrid learning (α=0.05).*
Perception of the hybrid learning is the same. However, valuations of its components are not the same. Students of different study areas rate the purpose of use in the hybrid learning differently. For the three other components there do not exist significant differences. Nevertheless, Sig = 0.005 for one component rejects hypothesis H5. Graphs below show the Bayesian analysis of each correlation.

Table 16: One – Way ANOVA

|		Sum of Squares	df	Mean Square	F	Sig.
Perception of hybrid learning	Between Groups	1.893	7	.270	.801	.589
	Within Groups	24.986	74	.338		
	Total	26.878	81			
User-friendliness	Between Groups	2.461	7	.352	.770	.614
	Within Groups	33.783	74	.457		
	Total	36.244	81			
Purpose of use	Between Groups	8.079	7	1.154	3.203	**.005**
	Within Groups	26.665	74	.360		
	Total	34.744	81			
Course quality	Between Groups	3.075	7	.439	1.255	.284
	Within Groups	25.900	74	.350		
	Total	28.976	81			
General output	Between Groups	5.894	7	.842	1.550	.164
	Within Groups	40.204	74	.543		
	Total	46.098	81			
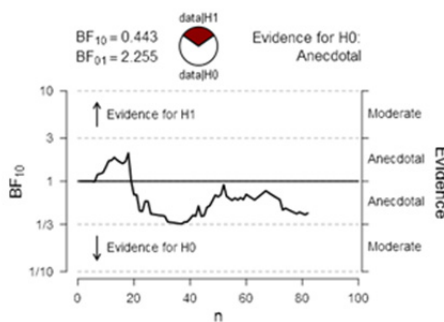
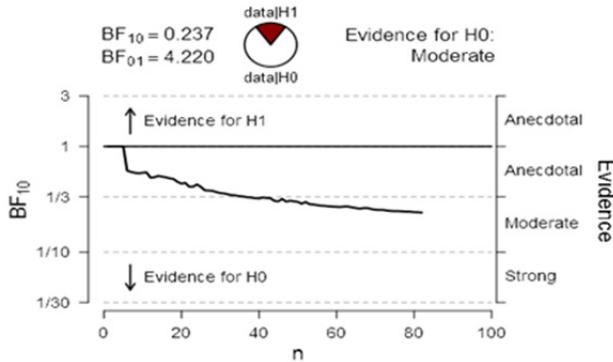Graph 11: Study area and perception of the hybrid learning

Graph 12: Study area and user-friendliness
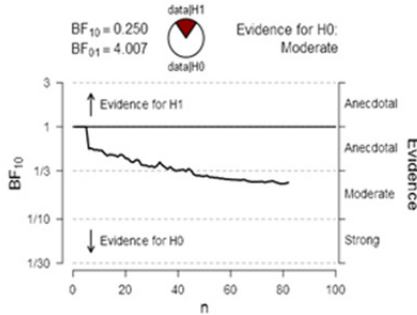
Graph 13: Study area and course quality
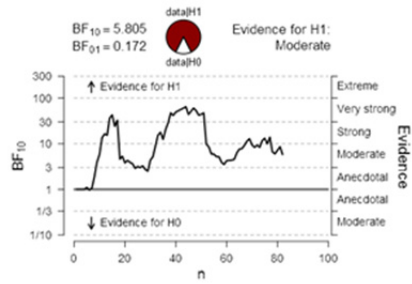
Graph 14: Study area and purpose of use

Graph 15: Study area and general output

H6: Students with different academic achievement have the same perception of the hybrid learning (α=0.05).

Table 17 data shows that students with differing academic performance have the same perception of the hybrid learning. Students have a positive perception of the hybrid learning. Analysis shows that hypothesis H6 is supported with confidence interval 95%.

Table 17: One – Way ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
	Between Groups	2.093	3	.698	2.195	.095
Perception of the hybrid learning	Within Groups	24.785	78	.318		
	Total	26.878	81			
	Between Groups	3.201	3	1.067	2.519	.064
User-friendliness	Within Groups	33.043	78	.424		
	Total	36.244	81			
	Between Groups	1.201	3	.400	.931	.430
Purpose of use	Within Groups	33.543	78	.430		
	Total	34.744	81			
	Between Groups	.593	3	.198	.543	.654
Course quality	Within Groups	28.382	78	.364		
	Total	28.976	81			
	Between Groups	2.038	3	.679	1.202	.314
General output	Within Groups	44.060	78	.565		
	Total	46.098	81			

5. Conclusions and Recommendations

Students are users of all three learning styles, although the visual learning style is best liked. Generally, students evaluate positively the hybrid learning. Students who belong to the kinesthetic learning style, value the most the hybrid learning. Students' gender does not have an impact on learning style and perception of the hybrid learning. The conclusions of the study are in line with the literature review.

There exist significant statistical differences between students of different study areas and the component of the hybrid learning, the purpose of use. The motivation for taking hybrid courses differs from one study area to another. Students are generally satisfied with hybrid courses and therefore recommend them to their friends. Universities need to conduct further research on learning styles in order to select the most compatible teaching methods. Based on the study's conclusions, it is recommended the creation of hybrid courses in the future.

References

Ajide, O. E., & Tik, C. C. (2009). A study on the effectiveness of blended learning. *2nd International Conference of Teaching and Learning* (pp. 1-7). Malaysia: INTI University College.

Atiyah, J. M., El Sherbiny, M. M., & Guirguis, S. K. (2015). Evaluation of E-Learning Program versus Traditional Education Instruction for Undergraduate. *International Journal of Advanced Research in Science, Engineering and Technology , 2* (7), 776-786.

Bidabadi, F. S., & Yamat, H. (2010). Learning style preferences by Iranian EFL freshman university students. *Procedia - Social and Behavioral Sciences , 7*, 219-226.

Blankson, J., & Kyei-Blankson, L. (2008). Nontraditional Students' Perception of a Blended Course: Integrating Synchronous Online Discussion and Face-to-Face Instruction. *Journal of Interactive Learning Research , 3* (19), 421-438.

Bonk, C. J., & Graham, C. R. (2006). *The Handbook of Blended Learning: Global Perspectives, Local Designs.* San Francisco: Pfeiffer Publishing.

Bostrom, L., & Lassen, L. M. (2006). Unraveling learning, learning styles, learning strategies and metacognition. *Education & Training , 48*, 178-189.

Boyle, T., Bradley, C., Chalk, P., Jones, R., & Pickard, P. (2003). Using blended learning to improve student suçess rates in learning to program. *Journal of Educational Media , 28* (2-3), 165-178.

Collopy, R. M., & Arnold, J. M. (2009). To blend or not to blend: Online and blended learning environments in undergraduate teacher education. *Issues in Teacher Education , 18* (2), 85-101.

Dobson, J. (2010). A comparison between learning style preferences and sex, status, and course performance. *Advances in Physiology Education , 34* (4), 197-204.

Donnelly, R. (2010). Harmonizing technology with interaction in blended problem-based learning. *Computers & Education , 54* (2), 350-359.

Dziuban, C. D., Moskal, P., & Hartman, J. (2004). *Blended Learning.* Colorado: Research Bulletin of Educause Center for Applied Research.

Dziuban, C., Graham, C., & Piçiano, A. (2014). *Blended learning: Research perspectives.* New York: Routledge.

Fleming, N. (1995). I'm different; not dumb. Modes of presentation (VARK) in the tertiary classroom. *Proceedings of the 1995 Annual Conference of the Higher Education and Research Development Society of Australasia* (pp. 308-313). Queensland: HERDSA.

Ford, N., & Chen, S. (2000). Individual differences, hypermedia, navigation, and learning: An empirical study. *Journal of Educational Multimedia and Hypermedia , 9*, 281-311.

Garnham, C., & Kaleta, R. (2002). Introduction to hybrid courses. *Teaching with Technology Today , 8* (6), 1-6.

Garrison, D. R., & Vaughan, N. D. (2008). *Blended learning in higher education: Framework, principles, and guidelines.* San Francisco: Jossey-Bass.

Glazer, F. S. (2011). *Blended Learning: Across the Disciplines, Across the Academy (New Pedagogies and Practices for Teaching in Higher Education).* Virginia: Stylus Publishing.

Gómez, L., & Duart, J. (2012). A hybrid approach to university subject learning activities. *British Journal of Educational Technology , 43* (2), 259–271.

Graff, M. G. (2003). Cognitive Style and attitudes towards using online learning and assessment methods. *The Electronic Journal of E-learning , 1* (1), 21-28.

Güzera, B., & Canera, H. (2014). The past, present and future of blended learning: an in depth analysis of literature. *Social and Behavioral Sciences , 4596 – 4603*.

Lim, D. H., & Morris, M. L. (2009). Learner and instructional factors influencing learning outcomes within a blended learning environment. *Educational Technology & Society , 12* (4), 282-293.

López-Pérez, M. V., Pérez-López, M. C., & Rodríguez-Ariza, L. (2011). Blended learning in higher education: Students' perceptions and their relation to outcomes. *Computers & Education , 56* (3), 818-826.

Martinez-Caro, E., & Campuzano-Bolarin, F. (2011). Factors affecting students' satisfaction in engineering disciplines: Traditional vs. blended approaches. *European Journal of Engineering Education , 36* (5), 473–483.

Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2010). *Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies.* Washington, DC: U.S. Department of Education.

Mitchell, A., & Honore, S. (2007). Criteria for suçessful blended learning. *Industrial and Commercial Training , 39* (3), 143–149.

Norberg, A., Dziuban, C. D., & Moskal, P. D. (2011). A time-based blended learning model. *On the Horizon , 19*, 207-216.

Osguthorpe, T. R., & Graham, C. R. (2003). Blended learning environments: Definitions and directions. *Quarterly Review of Distance Education , 4* (3), 227-233.

O'Toole, J. M., & Absalom, D. J. (2003). The impact of blended learning on student outcomes: Is there room on the horse for two. *Journal of Educational Media , 28* (2-3), 179-190.

Owston, R., Wideman, H., Murphy, J., & Lupshenyuk, D. (2008). Blended teacher professional development: A synthesis of three program evaluations. *The Internet and Higher Education , 11* (3-4), 201-210.

Owston, R., York, D., & Murtha, S. (2013). Student perceptions and achievement in a university blended learning strategic initiative. *The Internet and Higher Education , 18*, 38–46.

Promsurin, S., & Vitayapirak, J. (2015). Comparison of e-Learning, Blended and Traditional English Teaching Methods: A Case Study of Ban Hong Community Education College. *International Journal of Languages, Literature and Linguistics , 1* (2), 80-86.

Sharpe, R., Benfield, G., Roberts, G., & Francis, R. (2006). *The undergraduate experience of blended e-learning: A review of UK literature and practice.* York: The Higher Education Academy.

Shaw, G., & Marlow, N. (1999). The role of student learning styles, gender, attitudes and perceptions on information and communication technology assisted learning. *Computers & Education , 33* (4), 223 - 234.

Smyth, S., Houghton, C., Cooney, A., & Casey, D. (2012). Students' experiences of blended learning across a range of postgraduate programmes. *Nurse Education Today , 32*, 464–468.

Thorne, K. (2003). *Blended learning: how to integrate online and traditional learning.* London: Kogan page.

Torre, J. M. (2013). Variances on Students' Blended Learning Perception Açording. *Journal of Education and Practice , 4* (20), 160-167.

Wang, M., Shen, R., Novak, D., & Pan, X. (2009). The impact of mobile learning on students' learning behaviours and performance: Report from a large blended classroom. *British Journal of Educational Technology , 40* (4), 673-695.

Wehrwein, E. A., Lujan, H. L., & DiCarlo, S. (2007). Gender differences in learning style preferences among undergraduate physiology students. *American Journal of Physiology - Advances in Physiology Education , 31* (2), 153-157.

Woltering, V., Herrler, A., Spitzer, K., & Spreckelsen, C. (2009). Blended learning positively affects students' satisfaction and the role of the tutor in the problem-based learning process: Results of a mixed-method evaluation. *Advances in Health Science Education , 14*, 725-738.

Yari, T. (2012). Exploring the relationship between various learning preferences and final results achieved by Iranian EFL learners: A case study. *Advances in Asian Social Science , 2* (3), 526-531.