

# Male and Female Student Perceptions on the Effectiveness of Online Courses at University

Burhanuddin <sup>1,\*</sup>, Bambang Budi Wiyono <sup>1</sup>, Achmad Supriyanto <sup>1</sup>

<sup>1</sup> Department of Educational Administration, Faculty of Education, Universitas Negeri Malang, Malang, Indonesia

\*Corresponding author. Email: burhanuddin.fip@um.ac.id

## ABSTRACT

Pandemic outbreak has encouraged most universities to change teaching learning strategies. Online learning courses are offered to deliver learning experiences for various students in responding the pandemic situation. The purpose of this study was to investigate how gender and years of enrolment vary students' perceptions on the effectiveness of online courses. A group of 150 students were selected using convenience sampling technique to fill in a set of survey questionnaire. ANOVA technique was used to examine whether the different perceptions exist among groups of student gender and enrolment years. Results indicate both factors potentially foster differing perceptions on valuing online learning practices at the specified university. Limitations and implications of the study are reported.

**Keywords:** online learning courses, teaching, student, pandemic outbreak, university, environment

## 1. INTRODUCTION

Universities in normal situation are places where students can study in close proximity to each other. They also become cultural hubs where students from local and different countries can meet together. However, pandemic outbreak recently has changed this situation, and impacted significantly the ecosystem and education practices implemented in the higher education institutions globally. Online courses are advised as appropriate strategies to deal with this condition students (The impact of corona virus on higher education, 2020). The problem is how students perceived the effectiveness of online courses. This research question needs to be answered through examining students' perceptions specifically their responses, variation based on their gender and enrolment years. For the purpose of study two null hypotheses ( $H_0$ ) are tested: (1) there is no significant different between male and female students in viewing online classes and (2) there is no significant different perceptions-based student years of enrolment in viewing online courses.

### a. The Ultimate Choice to Online Learning

The emerging pandemic outbreak has unified universities around the world to use online learning approach as the most effective tool in retaining students and maintaining their learning access. Such a strategy is able to increase information retention and more efficient in consuming time and other technical resources (Bartley & Golek, 2004). While conventional teaching learning models are regarded unsuitable to provide learning experiences for the learners during this pandemic situation.

Implications of the online learning approach for leaders that they have to change teaching learning strategies, renew format of learning content, design new methods and learning experiences or activities (Code, Ralph, & Forde, 2020; Dunn, Griggs, Olson, Beasley, & Gorman, 1995; Garrison & Cleveland-Innes, 2005; Hollweck & Doucet, 2020). (Bartley & Golek, 2004; Rasmitadila et al., 2020). Development of new academic initiatives have to be well planned including e-learning packages, management of information system, classroom information technology, communication design, electronic-instructional system, and the improvement of faculty or teachers capacity in delivering online classes (Baran, Correia, & Thompson, 2011; Swan, 2001; Young, 2010). These innovative steps are necessary to be done in responding to the new environment and ensure students' learning experiences can be sustained (Bolliger & Wasilik, 2009; Garrison & Cleveland-Innes, 2005; Hollweck & Doucet, 2020; Rasmitadila et al., 2020).

### b. The Impact on Market and Economics of Higher Education Sector

Impacts of the pandemic outbreak has been reported by World Health Organization, and viewed as a human tragedy experienced by most countries. One of the biggest concerns is its influence on the percentage of local and international students that foster university markets. Travel restrictions due to the emerging global environment, most students have turned back to their home countries. Universities have also left overseas students stranded and automatically decrease the number

enrolment of both local and international students (The impact of corona virus on higher education, 2020).

On the other hand not all higher education institutions can prepare innovative models in delivering learning experiences through information-technology-based systems (Joshi, Vinay, & Bhaskar, 2020). This is probably due to insufficient economic sources of both universities and students in affording the means of high technology required by the new approaches (Mullenburg & Berge, 2005; Swan, 2001).

**c. Online Learning Factors at University**

Factors that determine how teaching learning delivered at university could include technology, management, policies, human resources capacity, and process. These characterize instructional models as illustrated in Figure 1.

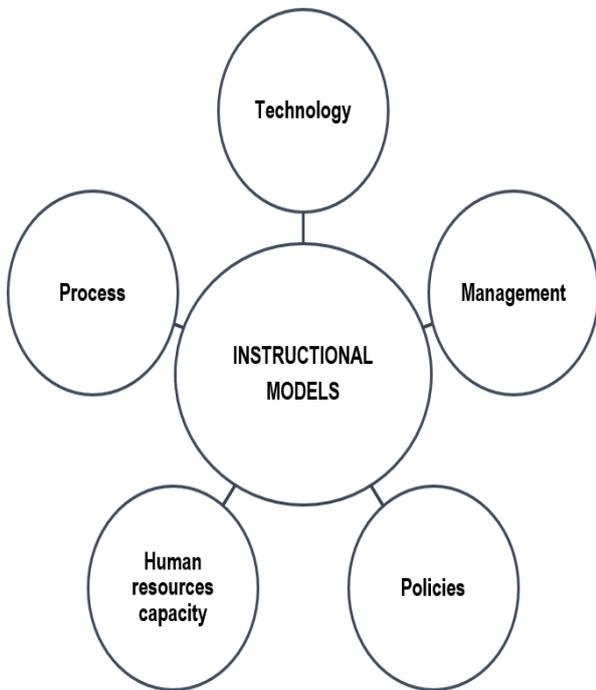


Figure 1 Instructional Model Factors at University

But its effectiveness depends on how university supports expected learning activities (Bartley & Golek, 2004; Code et al., 2020; Neuhauser, 2002; Young, 2010). This could include essential elements as shown in Figure 2 including university responsibility to provide facility; readiness in implementing online learning programs for various students; and how faculty designs instructional models to enhance student learning engagement, motivation, and satisfaction (Rasmitadila et al., 2020). Students' acceptance on designed learning models and how their concern on environment especially the pandemic condition also influences learning achievements expected by university (Aragon, Johnson, & Shaik, 2002).

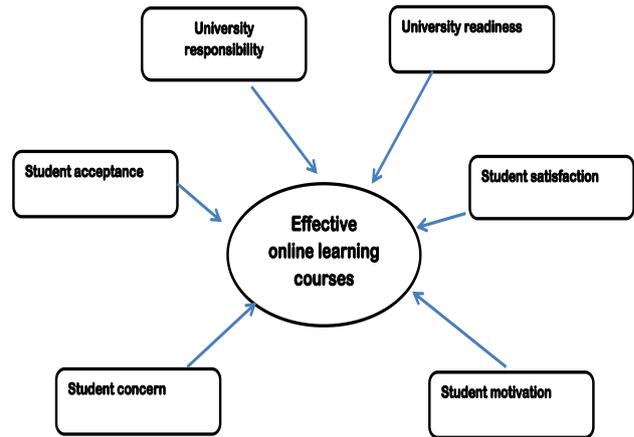


Figure 2 Factors Predicted Influencing Online Learning at University

How students respond to online courses delivered in learning environments especially universities, are probably determined by their differing individual attributes. In some studies gender (Drory & Beaty, 1991; Hau-Siu Chow, 2005; Roth, Purvis, & Bobko, 2012; Smith & Leaper, 2006) and different individual experiences in particular years of enrolment for example are predicted to influence their given perceptions on valuing university environment (Burhanuddin, 2016, 2017).

**2. METHOD**

This is a piece of quantitative research. Participants of 150 students who took online courses selected based on a convenient sampling technique at the specified faculty of State University of Malang Indonesia. They were invited to fill in survey questionnaires consisted of 36 items using five-point Likert scale and administered to students through online google form. Data were analysed employing multivariate technique statistics with one-way of ANOVA analysis procedure. This procedure was carried out to determine if significant differences exist between male and female respondents and differing years of enrolment in viewing online classes or courses.

**3. RESULTS**

It's worth seeing descriptive statistics shown in Table 1 and Table 3. Sample data from gender group produces quite variation in mean scores. Whether the difference in mean scores reaches significance need to be examined using ANOVA results.

**a. Gender Factor**

Results indicate variances within group as indicated in Table 2 are generally similar. With the exception of student satisfaction, other variables have higher significant values (> 0.05) meaning the homogeneity of variance is achieved. Estimates of the ANOVA show

university responsibility, university readiness, and student concern have *p values* higher than  $\alpha = 0.05$ , the null hypothesis is accepted.

It means that both male and female students have no different perceptions on the factor of university responsibility, readiness, and student concern upon online classes. In other words, they have similar perceptions on

the three variables. However, in terms of student acceptance, motivation, and satisfaction – both genders have different perceptions upon the variables of student acceptance, motivation, and satisfaction. The *p-values* of these variables are lower than  $\alpha = 0.05$ , so the null hypothesis ( $H_0$ ) is rejected.

**Table 1 Descriptive Statistics of Male and Female Student Perceptions on Online Courses**

Variable and Student Gender		N	Mean	Std. Deviation	Std. Error	95% Confidence		Min	Max.
						Interval for Mean			
						Lower	Upper		
University responsibility									
	Female	125	-.033371	100.619.258	.08999660	-.2114996	.1447574	-253.319	179.004
	Male	24	.1738077	.96898117	.19779245	-.2353572	.5829726	-147.268	179.004
	Total	149	.0000000	100.000.000	.08192319	-.1618903	.1618903	-253.319	179.004
Model	Fixed Effects			100.046.172	.08196102	-.1619741	.1619741		
	Random Effects				.08196102 <sup>a</sup>	-1.041413 <sup>a</sup>	1.0414135 <sup>a</sup>		
University Readiness									
	Female	125	-.037079	.97577261	.08727576	-.2098227	.1356636	-234.627	221.523
	Male	24	.1931225	112.033.838	.22868811	-.2799549	.6661999	-190.259	218.130
	Total	149	.0000000	100.000.000	.08192319	-.1618903	.1618903	-234.627	221.523
Model	Fixed Effects			.99977218	.08190453	-.1618625	.1618625		
	Random Effects				.08905212	-11.315.14	11.315.145		
Student concern									
	Female	125	-.034797	101.559.550	.09083762	-.2145909	.1449953	-253.752	.98804
	Male	24	.1812384	.91277073	.18631854	-.2041909	.5666677	-196.711	.98804
	Total	149	.0000000	100.000.000	.08192319	-.1618903	.1618903	-253.752	.98804
Model	Fixed Effects			100.020.509	.08193999	-.1619325	.1619325		
	Random Effects				.08193999 <sup>a</sup>	-1.041146 <sup>a</sup>	1.0411463 <sup>a</sup>		
Student acceptance									
	Female	125	-.131228	.91105295	.08148705	-.2925137	.0300577	-194.070	201.340
	Male	24	.6834793	117.424.866	.23969250	.1876376	11.793.210	-113.789	350.333
	Total	149	.0000000	100.000.000	.08192319	-.1618903	.1618903	-194.070	350.333
Model	Fixed Effects			.95702183	.07840228	-.1549412	.1549412		
	Random Effects				.48138506	-61.165.77	61.165.771		
Student motivation									
	Female	125	-.096154	.98033900	.08768419	-.2697063	.0773969	-213.884	215.977
	Male	24	.5008058	.97027394	.19805634	.0910950	.9105165	-156.190	248.860
	Total	149	.0000000	100.000.000	.08192319	-.1618903	.1618903	-213.884	248.860
Model	Fixed Effects			.97877103	.08018405	-.1584624	.1584624		
	Random Effects				.34510127	-43.849.27	43.849.273		
Student satisfaction									
	Female	125	-.080028	.94892185	.08487415	-.2480178	.0879617	-291.612	263.526
	Male	24	.4168128	116.793.605	.23840395	-.0763633	.9099890	-174.267	255.689
	Total	149	.0000000	100.000.000	.08192319	-.1618903	.1618903	-291.612	263.526
Model	Fixed Effects			.98640365	.08080934	-.1596981	.1596981		
	Random Effects				.28100957	-35.705.65	35.705.651		

**Table 2 Male and Female Student Perceptions on Online Courses**

Test of Homogeneity of Variances						
	Levene Statistic	df1	df2	Sig.		
University responsibility	.004	1	147	.947		
University readiness	.728	1	147	.395		
Student concern	.458	1	147	.499		
Student acceptance	3.218	1	147	.075		
Student motivation	.587	1	147	.445		
Student satisfaction	4.649	1	147	.033		
ANOVA						
	Sum of Squares	df	Mean Square	F	Sig.	
University Responsibility	Between Groups	.864	1	.864	.863	.354
	Within Groups	147.136	147	1.001		
	Total	148.000	148			
University readiness	Between Groups	1.067	1	1.067	1.067	.303
	Within Groups	146.933	147	1.000		
	Total	148.000	148			
Student concern	Between Groups	.940	1	.940	.939	.334
	Within Groups	147.060	147	1.000		
	Total	148.000	148			
Student acceptance	Between Groups	13.364	1	13.364	14.591	.000
	Within Groups	134.636	147	.916		
	Total	148.000	148			
Student motivation	Between Groups	7.175	1	7.175	7.490	.007
	Within Groups	140.825	147	.958		
	Total	148.000	148			
Student satisfaction	Between Groups	4.970	1	4.970	5.108	.025
	Within Groups	143.030	147	.973		
	Total	148.000	148			

## b. Enrolment Year Variation

Descriptive data in Table 3 indicate the trend of student perceptions' variation influenced by differing enrolment years. With the exception of variables university responsibility and student concern, data in Table 4 show other variables obtained lower p values (< 0.05). The null hypothesis ( $H_0$ ) is rejected meaning there is significant different among student year of enrolment in regarding variables of university readiness, student acceptance, motivation, and satisfaction. The validity of this finding is also supported by the homogeneity of variances that all variables have high significant values as listed in the Table 3.

## 4. DISCUSSION

Theoretical and research base developed in this study proposes several variables potentially determine the effectiveness of university online courses. It adds the literature through highlighting significant factors predicted to influence how online instructional models designed and effectively implemented. This is in line with some research finding focusing on the issues of instructional development (Bartley & Golek, 2004; Code et al., 2020; Neuhauser, 2002; Young, 2010). Responsibility and readiness of university in implementing online learning system, providing HI technological infrastructure, and how instructional models to be designed to enhance learning engagement, motivation, and satisfaction are found as relevant with the factors proposed by previous research findings (Rasmitadila et al., 2020). It is evident in other findings

that students' acceptance on learning models and their concern on pandemic condition are reported as significant factors that potentially influence learning achievements (Aragon et al., 2002).

Examining perceptions variation in terms of gender, both male and female students have similar views on the factor of university responsibility, readiness, and student concern upon pandemic situation. However, in terms of student acceptance, motivation, and satisfaction – both genders have different perceptions upon the variables of student acceptance, motivation, and satisfaction. Such findings are consistent with some other studies that gender potentially characterize individual perceptions (Drory & Beaty, 1991; Smith & Leaper, 2006).

In terms of the differing years of enrolment, students have significant different perceptions regarding university readiness, student acceptance, motivation, and satisfaction upon online classes arranged in the specified university. But they had no different views on university responsibility and concern on pandemic outbreak. Effects of a such situational factor upon framing individual opinions or perceptions also found in other previous studies (Burhanuddin, 2016, 2017).

## 5. CONCLUSION

Pandemic outbreak has broad impacts on educational practices in particular higher educational institutions. Such a condition challenges universities around the world to design and implement online learning courses in order to retain and maintain students' existence in education system.

**Table 3 Descriptive Statistics of Enrolment Year and Student Perceptions on Online Courses**

Variable and the Year of Student Enrolment		N	Mean	Std. Deviation	Std. Error	95% Confidence		Min.	Max.
						Interval for Mean			
						Lower	Upper		
University responsibility									
	2017	51	.0468182	.93659152	.13114905	-.2166024	.3102388	-158.017	179.004
	2018	79	.0015746	108.729.579	.12233033	-.2419664	.2451156	-253.319	179.004
	2019	19	-.132216	.79871910	.18323873	-.5171872	.2527533	-139.147	142.400
	Total	149	.0000000	100.000.000	.08192319	-.1618903	.1618903	-253.319	179.004
Model	Fixed Effects			100.531.420	.08235855	-.1627690	.1627690		
	Random Effects				.08235855 <sup>a</sup>	-.3543602 <sup>a</sup>	.3543602 <sup>a</sup>		
University Readiness									
	2017	51	.0675474	.93589859	.13105202	-.1956783	.3307731	-190.259	218.130
	2018	79	-.259860	.90606054	.10193977	-.4628065	-.0569135	-234.627	218.130
	2019	19	.8991592	103.393.325	.23720056	.4008193	13.974.990	-.92724	221.523
	Total	149	.0000000	100.000.000	.08192319	-.1618903	.1618903	-234.627	221.523
Model	Fixed Effects			.93292660	.07642832	-.1510488	.1510488		
	Random Effects				.31148054	-13.401.92	13.401.926		
Student concern									
	2017	51	.0451663	104.503.718	.14633448	-.2487551	.3390877	-253.752	.98804
	2018	79	-.096804	102.316.868	.11511547	-.3259814	.1323732	-253.752	.98804
	2019	19	.2812656	.72231238	.16570982	-.0668778	.6294090	-.77474	.98804
	Total	149	.0000000	100.000.000	.08192319	-.1618903	.1618903	-253.752	.98804
Model	Fixed Effects			.99880940	.08182565	-.1617158	.1617158		
	Random Effects				.09148274	-.3936184	.3936184		
Student acceptance									
	2017	51	.0703450	113.322.437	.15868315	-.2483795	.3890695	-194.070	350.333
	2018	79	-.169614	.83821127	.09430614	-.3573637	.0181345	-194.070	195.900
	2019	19	.5164187	109.024.120	.25011849	-.0090607	10.418.981	-158.502	196.128
	Total	149	.0000000	100.000.000	.08192319	-.1618903	.1618903	-194.070	350.333
Model	Fixed Effects			.98066162	.08033893	-.1587775	.1587775		
	Random Effects				.18273458	-.7862434	.7862434		
Student motivation									
	2017	51	.0139169	104.258.313	.14599084	-.2793143	.3071482	-213.884	248.860
	2018	79	-.151754	.93549729	.10525167	-.3612945	.0577854	-181.385	178.640
	2019	19	.5936236	.96793948	.22206055	.1270917	10.601.555	-115.621	248.860
	Total	149	.0000000	100.000.000	.08192319	-.1618903	.1618903	-213.884	248.860
Model	Fixed Effects			.97740012	.08007174	-.1582494	.1582494		
	Random Effects				.19452601	-.8369779	.8369779		
Student satisfaction									
	2017	51	.1396652	.97200496	.13610792	-.1337156	.4130460	-172.161	263.526
	2018	79	-.232914	.96297879	.10834358	-.4486100	-.0172190	-291.612	202.583
	2019	19	.5935432	.95611013	.21934671	.1327128	10.543.735	-131.309	218.187
	Total	149	.0000000	100.000.000	.08192319	-.1618903	.1618903	-291.612	263.526
Model	Fixed Effects			.96523798	.07907538	-.1562803	.1562803		
	Random Effects				.23301921	-10.026.00	10.026.007		

**Table 4 Year of Enrolment and Student Perceptions on Online Courses**

Test of Homogeneity of Variances						
	Levene Statistic	df1	df2	Sig.		
University responsibility	1.565	2	146	.213		
University readiness	.621	2	146	.539		
Student concern	1.198	2	146	.305		
Student acceptance	2.543	2	146	.082		
Student motivation	.532	2	146	.588		
Student satisfaction	.175	2	146	.840		
ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
University Responsibility	Between Groups	.444	2	.222	.220	.803
	Within Groups	147.556	146	1.011		
	Total	148.000	148			
University readiness	Between Groups	20.929	2	10.464	12.023	.000
	Within Groups	127.071	146	.870		
	Total	148.000	148			
Student concern	Between Groups	2.347	2	1.174	1.177	.311
	Within Groups	145.653	146	.998		
	Total	148.000	148			
Student acceptance	Between Groups	7.592	2	3.796	3.947	.021
	Within Groups	140.408	146	.962		
	Total	148.000	148			
Student motivation	Between Groups	8.525	2	4.262	4.462	.013
	Within Groups	139.475	146	.955		
	Total	148.000	148			
Student satisfaction	Between Groups	11.974	2	5.987	6.426	.002
	Within Groups	136.026	146	.932		
	Total	148.000	148			

The study has limitations because being conducted at a university setting in Indonesia. However, the findings add literature that effectiveness of online learning programs is determined by certain factors as well as gender and differing ages or year of enrolment. Universities need to provide supporting facility and environment where students with differing individual characteristics as well as different gender and experiences can obtain significant learning experiences during the pandemic outbreak.

**REFERENCES**

[1] Aragon, S. R., Johnson, S. D., & Shaik, N. (2002). The Influence of Learning Style Preferences on Student Success in Online Versus Face-to-Face Environments. *American Journal of Distance Education*, 16(4), 227-243. doi: 10.1207/S15389286AJDE1604\_3.

[2] Baran, E., Correia, A.-P., & Thompson, A. (2011). Transforming online teaching practice: critical analysis of the literature on the roles and competencies of online teachers. *Distance Education*, 32(3), 421-439. doi: 10.1080/01587919.2011.610293.

[3] Bartley, S. J., & Golek, J. H. (2004). Evaluating the cost effectiveness of online and face-to-face instruction. *Educational Technology & Society*, 7(4), 167-175.

[4] Bolliger, D. U., & Wasilik, O. (2009). Factors influencing faculty satisfaction with online teaching and learning in higher education. *Distance Education*, 30(1), 103-116. doi: 10.1080/01587910902845949.

[5] Burhanuddin, B. (2016). *Leading the university to build a greater performance*. Paper presented at the The 4th International Conference on Language, Society and Culture in Asian Contexts, Malang.

[6] Burhanuddin, B. (2017). Behaviours of the effective leadership in universities: Findings of a meta-analysis study. *Advances in Social Science, Education and Humanities Research*, 128(3rd International Conference on Education and Training (ICET 2017)), 271-277.

[7] Code, J., Ralph, R., & Forde, K. (2020). Pandemic designs for the future: perspectives of technology education teachers during COVID-19. *Information and Learning*

- Sciences. <https://www.emerald.com/insight/2398-5348.htm> doi:10.1108/ils-04-2020-0112.
- [8] Drory, A., & Beaty, D. (1991). Gender Differences in the Perception of Organizational Influence Tactics. *Journal of Organizational Behavior*, 12(3), 249-258. <https://www.jstor.org/stable/2488412>.
- [9] Dunn, R., Griggs, S. A., Olson, J., Beasley, M., & Gorman, B. S. (1995). A Meta-Analytic Validation of the Dunn and Dunn Model of Learning-Style Preferences. *The Journal of Educational Research*, 88(6), 353-362. doi: 10.1080/00220671.1995.9941181.
- [10] Garrison, D. R., & Cleveland-Innes, M. (2005). Facilitating Cognitive Presence in Online Learning: Interaction Is Not Enough. *American Journal of Distance Education*, 19(3), 133-148. doi: 10.1207/s15389286ajde1903\_2.
- [11] Hau-Siu Chow, I. (2005). Gender differences in perceived leadership effectiveness in Hong Kong. *Women In Management Review*, 20(4), 216-233. <https://doi.org/10.1108/09649420510599052>.
- [12] Hollweck, T., & Doucet, A. (2020). Pracademics in the pandemic: pedagogies and professionalism. *Journal of Professional Capital and Community*. <https://www.emerald.com/insight/2056-9548.htm> doi:DOI 10.1108/JPC-06-2020-0038.
- [13] The impact of corona virus on higher education. (2020). *Times Higher Education*.
- [14] Joshi, A., Vinay, M., & Bhaskar, P. (2020). Impact of coronavirus pandemic on the Indian education sector: perspectives of teachers on online teaching and assessments. *Interactive Technology and Smart Education*, Vol. ahead-of-print No. <https://doi.org/10.1108/ITSE-06-2020-0087> doi:10.1108/ITSE-06-2020-0087.
- [15] Muilenburg, L. Y., & Berge, Z. L. (2005). Student barriers to online learning: A factor analytic study. *Distance Education*, 26(1), 29-48. doi: 10.1080/01587910500081269.
- [16] Neuhauser, C. (2002). Learning Style and Effectiveness of Online and Face-to-Face Instruction. *American Journal of Distance Education*, 16(2), 99-113. doi: 10.1207/S15389286AJDE1602\_4.
- [17] Rasmitadila, R., Aliyyah, R. R., Rachmadtullah, R., Samsudin, A., Syaodih, E., Nurtanto, M., & Tambunan, A. R. S. (2020). The perceptions of primary school teachers of online learning during the COVID-19 pandemic period: A case study in Indonesia. *Journal of Ethnic and Cultural Studies*, 7(2), 90-109.
- [18] Roth, P. L., Purvis, K. L., & Bobko, P. (2012). A Meta-Analysis of Gender Group Differences for Measures of Job Performance in Field Studies. 38(2). doi: DOI: 10.1177/0149206310374774.
- [19] Smith, T. E., & Leaper, C. (2006). Self-Perceived Gender Typicality and the Peer Context During Adolescence. *Journal of Research on Adolescence*, 16(1), 91-104. doi: <https://doi.org/10.1111/j.1532-7795.2006.00123.x>.
- [20] Swan, K. (2001). Virtual interaction: Design factors affecting student satisfaction and perceived learning in asynchronous online courses. *Distance Education*, 22(2), 306-331. doi: 10.1080/0158791010220208.
- [21] Young, S. (2010). Student views of effective online teaching in higher education. *American Journal of Distance Education*, 20(2), 65-77. <https://doi.org/10.1207/s15389286ajde20022>.