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ANALYZING THE EXISTING AND DESIRED STATE OF BLENDED LEARNING IN PRIMARY SCHOOLS

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ABSTRACT

The general purpose of the present research is to analyze the current situation of applying the blended learning in the primary schools in contrast to the desired and expected situation. This research is a descriptive-survey one and is applied in terms of its purpose. The research community consists of all managers and head teachers, experts and teachers in the primary schools in Islam Abad Gharb, Kermanshah, in the 2017-2018 academic year and their statistics are 650 people during research. Based on the Morgan Table, 242 people were selected and analyzed by means of stratified random sampling. A researcher-made questionnaire was prepared and distributed in the schools to analyze the current state and the desired situation for blended learning. The face validity and content validity were confirmed by the expert professors and its reliability was 0.99 by means of Cronbach alpha in the current can desired situations. Central parameters and scattering parameters were used to carry out descriptive analysis. Kolmogorov–Smirnov Test, one sample T-test. Friedman Test and SPSS® were used to carry out inferential analysis. The findings showed that the mean of all components is lower than the medium size in the current situation and is higher than the medium size in the desired and expected situation. Moreover, a significant statistical difference was shown between the current and desired situations and there was a difference between using the components of blended learning in the current situation and applying them in the desired and expected situation of the schools.

Keywords: *Traditional Learning, Electronic Learning, Blended Learning, Current Situation, Desired Situation, Primary Schools.*

INTRODUCTION

The significance of education as an important global concern has made The World Bank to allocate its World Development Report 2018 to the subject of education and its crisis (Pakravan, 2017, p.1). The training and learning is one of the major duty of schools. Nowadays, traditional face-to-face training is one of the most common methods dominated in the schools which has been recognized as the common learning method in most of the world schools during education and training history (Sanghari, 2004, p.29). The rote learning, speech and question and answer can be mentioned for such trainings. Being cheap, motivating the enthusiasm of creative thinking, creating the enthusiasm of study and research activity, power of expression for students, effect on the learning of emotional level, shyness elimination, communication with society, self-evaluation, self-confidence, satisfying curiosity sense and fortifying exploratory and inventive desire can be the advantages of this learning method (Shabani, 2006, pp.243-289).

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The educational processes and systems have been changed with the advent of new communication toolsand brought about a revolution owing to the high capacities of these toolsin supporting the learning process (Momeni Rad, 2013, p.2). 21st-centruy students have many of technologies in their daily life they access to the desktop computers, laptops, tablets, smart phones and computing devices on a daily and connect to the information any second. Most of the educational institutions represent learning courses and programs for meeting the needs of students in this century (Randal, 2016, p.4). Optimally using the learning technology during teaching in the cause of activating learners' senses made the learning more real and practical and improved the effectiveness of education and training and enriched the quality of teaching and learning (Khoshneshin Langroudi and Hasani Jafari, 2016, p.91); but when they are properly mingled with the traditional programs of class (face to face), they will possess the higher empowerment.

Despite the presence of these tools, the traditional patterns of primary learning and training at various learning levels are turned into the same-level learning opportunities and will encounter essential changes in the form of virtual experiences (Khoshneshin Langroudi and Hasani Jafari, 2016, p.36). the researchers such as Allen et al. (2004) and Shachar and Neumann (2003) believe that e-learning can be the same or even more effective than the traditional face-to-face training (Markova et al., 2017, p.686). Mason (2002) believes: "the pioneers of e-learning now reject the perspective of online learning against the traditional face-to-face training (McDonald, 2009, p.4).

Efficacy and advantages of e-learning have been confirmed in many research; however, the challenges of using e-learning in the learning systems consist of the low-level interaction of learners and limiting it to the virtual connections, the lack of growth in social skills, indifference to the significance of sharing emotion, experience and creation of social dependence in the learning. For this reason, the learning systems shifted from the independent approach of face-to-face learning system and the e-learning system to the blended approach (Shah Vali Kuh Shouri and Gholami, 2014, p.29). The effective imbalance and isolation feeling are the most important challenges of e-learning (Markova et al., 2017, p.690). Additionally, Sloan (2002) believes that the quantity and quality of communication and interaction can cause the higher understanding and the satisfaction of the learners (Markova et al., 2017, p.686). Some of researchers and theoreticians including Astin (1975, 1977, 1993), Bean (1980, 1982, 1983, 1985), Bean and Metzner (1985), Berge (1999), Hammer (2001), Kearsley (2000), Moore (1989), Pascarella (1980, 1985), Pascarella & Terenzini (1977), Spady (1971), Sutton (2001) Terenzini & Pascarella (1971, 1980), Tinto (1975, 1982, 1987, 1988, 1993, 1997) and Wagner (1994)believe that the interaction among students and the interaction between the students and the teachers are the important factor in learning and the ingredient part in creating the effective learning experience (Kami, 2009, p.39). Thus, the intellectuals proposed the blended learning to reduce such limitations.

Blended learning is the combination of face-to-face and online sessions and assists the change and innovation in the active and collaborative processes (Soler et al., 2017, p.772). To Sloan (2008), the blended learning is a course that the combination of traditional and online classes and/or other learning components are used simultaneously; these courses are not fully online but reduced the presence of being in the classroom in contrast to the face-to-face method and is

offered according to the students' need, personality and their learning style (Lawergen, 2014, p.21).

The blended learning was introduced by March et al. (2003) as a training approach (Saeedpoor, 2010). In this respect, studies including Bartolome (2008), Ferreres (2011) and Gonzalez & Ospina (2013)have been conducted in the field of educational dynamics in the virtual environments and blended learning as well as the challenges related to the teachers and students (Soler et al., 2017, p.772) and positive feedback has been received for its performance in various researches since farm including Protecter (2003), Bock& Graham (2004), Zimen and Green (2007), Chou (2009), Tapora (2011), Innosight Institute (2011) and Clayton Institute (2014) (Aghajani, 2014). The results of researchers such as Beaudry (2011), Lefton (2012), Richardson (2010), Riddle (2010), Rosen & Beck-Hill (2012) and Ruiling & Overbaugh (2009) show that the environment of blending learning and injection of technology into the classroom activities can be effective for many students (Prouty, 2014, p.6).

The most important findings in the significance of blended learning can be the following: Yazdizadeh Ravari (2016) increased the enjoyment, hope, pride, activity emotion, outcome emotion and reduced the fear, anxiety and embarrassment by using the blended learning; Tabatabaei (2016) promoted the level of student's learning in Quran course; Shah Virin et al. (2016) and Ahmadpoor Kasghari (2015) worked on the field of attention, support and use of advantages of both traditional and electronic learnings in the blended learning; Van Lin et al. (2017) increased the motivation of students in the environment of blended learning in the mathematical courses; Audi et al. (2014) enhance the performance of students' learning; Ling et al. (2010) worked on the satisfaction of students with the group learning, flexibility, motivation and collaboration in the blended learning courses; Akoyonla & Soyla (2008)studied the compatibility of blended learning approach with the style of learners' learning, the positive perspective of learners towards blended learning and promotion of learning results; and Christiansen (2003) promoted the learning performance and better performance in the social talk and communicative skills.

Investigating the other research literatures such as Beaudry (2011), Bennett (2012), Gathany (2012), Lefton (2012), Pass (2008), Riddle (2010), Ruiling & Overbaugh (2009) shows that there is a limited extent of knowledge about the blended learning as the best method of learning and about the continuous professional development in technology integration (Prouty, 2014, p. 7). Based on the texts and the necessity of paying attention to this training method in the primary schools, the current situation versus desired and expected situation should be first measured; then, some measures and actions should be taken to apply the blended learning in the schools in that the general purpose of present research is the analysis of current situation of application of blended learning in the primary schools in contrast to the desired and expected situation; and we aim to test the following hypotheses:

1. The mean score of current situation in all components of blended learning is lower than the medium of Likert scale.
2. The mean score of current situation in all components of blended learning is higher than the medium of Likert scale.
3. There is a significant statistical difference between the current situation and desired and expected situation of applying blended learning in the primary schools.

4. There is a significant statistical difference in the application of components of blended learning in the primary schools in the current situation.
5. There is a significant statistical difference in the application of components of blended learning in the primary schools in the desired situation.

METHODOLOGY

The general purpose of the present research is to analyze the current situation of applying the blended learning in the primary schools in contrast to the desired and expected situation. This research method is a descriptive-survey one and is an applied research in terms of its purpose. The research community consists of all managers and head teachers, experts and teachers in the primary schools in *Islam Abad Gharb*, Kermanshah, in the 2017-2018 academic year and their statistics are 650 people during research according to the report of office's statisticians. 531 teachers, 115 managers and head-teachers and 4 experts included among which 242 people were selected as the sample size by means of stratified random sampling based on the Krejcie and Morgan Table.

A questionnaire was used for testing the hypotheses. The research data were extracted from a researcher-made questionnaire for blended leaning in three parts. The first part includes the demographical information of subject; the second part includes the current situation and the third part related to the analysis of desired and expected situation of blended learning in the schools. The questionnaire includes 65 items arranged in the five-scale Likert (5= very much, 1= very little). The face validity and content validity were confirmed by the professors and subject experts; its reliability was calculated 0.99 in the current and desired situations which indicates the reliability of measuring tool. Central parameters (mean, medium, mode) and scattering parameters (standard deviation, variance, and change range) were used to carry out the descriptive analysis. Kolmogorov–Smirnov Test, one sample T-test. Friedman Test and SPSS® were used to carry out the inferential analysis.

RESEARCH FINDINGS

Demographical Information: Table 1 includes the demographical information of statistical samples.

Table 1: Demographical Information of Statistical Samples

No.		Manager	Head-Teacher	Teacher	Expert	Sum (%)	
Gender	Male (%)	0.04	0.010	0.022	0.01	0.037	0.0100
	Female (%)	0.03	0.02	0.058	-	0.063	
Education	A.A. & below	-	-	0.05	-	0.05	0.0100
	B.A.	0.05	0.010	0.069	0.01	0.085	
	M.A. & above	0.02	0.02	0.06	-	0.010	
Working Background	10 &under	-	-	0.08	-	0.08	0.0100
	10-20	0.02	0.02	0.027	-	0.031	
	20 & above	0.05	0.010	0.045	0.01	0.061	
Age	35 & under	-	-	0.08	-	0.08	0.0100
	35-45	0.02	0.02	0.027	-	0.031	
	45 & above	0.05	0.010	0.045	0.01	0.061	

Based on the information given in Table 1, it is seen that 63% of subjects are female and 37% are male. In addition, the highest frequency of education relates to B.A. with 85% and the higher frequency of age and working background relate to the 45 &above, and 20 & above with 61%, respectively.

Hypothesis 1:

First, the results of descriptive analysis are presented to answer this hypothesis. In order to analyze the research variables descriptively, the central parameters such as mean and scattering parameters such as standard deviation, variance and change range have been used. Table 2 includes the results of descriptive analysis to test the current situation.

Table 2: Descriptive Analysis of Research Variables (Current Situation)

Variable	Number	Mean	Standard Deviation	Variance	Change Range	Minimum	Maximum
Tool	242	2.6458	0.89291	0.797	3.89	1.11	5.00
Content	242	2.4071	0.90854	0.825	4.00	1.00	5.00
Teaching Method	242	2.4516	0.93186	0.868	4.00	1.00	5.00
Instructional Design	242	2.7502	0.92054	0.847	4.00	1.00	5.00
Evaluation	242	2.2847	1.00404	1.008	4.00	1.00	5.00
Theory	242	2.4274	1.02168	1.044	4.00	1.00	5.00
Current Situation (Total)	242	2.4953	0.83827	0.703	3.91	1.09	5.00

Based on the statistical findings in Table 2, it is seen that total mean of current situation is 2.49 for the application of blended learning which is lower than the Likert's medium scale. i.e. 3. In addition, the statistical means of components including tool, content, teaching method, instructional design, evaluation, and learning theory are 2.64, 2.40, 2.45, 2.75, 2.28, and 2.42, respectively. Table 2 includes scores of other indexes. Thus, the H0 is confirmed due to the score of all components, M<3; that is, the score of all components of blended learning in the current situation is lower than the mean in the primary schools.

Hypothesis 2:

Table 3 includes the results of descriptive analysis for the research variables to test the desired situation.

Table 3: Descriptive Analysis of Research Variables (Desired Situation)

Variable	Number	Mean	Standard Deviation	Variance	Change Range	Minimum	Maximum
Tool	242	4.1630	0.80932	0.655	4.00	1.00	5.00
Content	242	4.0427	0.94758	0.898	4.00	1.00	5.00
Teaching Method	242	4.0438	0.92469	0.855	4.00	1.00	5.00
Instructional Design	242	4.0651	0.92248	0.851	4.00	1.00	5.00
Evaluation	242	3.9691	1.02075	1.042	4.00	1.00	5.00
Theory	242	4.0165	1.01641	1.033	4.00	1.00	5.00
Current Situation (Total)	242	4.0500	0.87607	0.768	4.00	1.00	5.00

According to the statistical findings in Table 3, it is observed that total mean of desired situation is 4.05 for the application of blended learning which is lower than the Likert's medium scale.

i.e. 3. Additionally, the statistical means of components including tool, content, teaching method, instructional design, evaluation, and learning theory are 4.16, 4.04, 4.04, 4.06, 3.96 and4.01, respectively. Table 3 includes scores of other indexes. Thus, the H0 is confirmed due to the score of all components, M<3; that is, the score of all components of blended learning in the desired and expected situation is higher than the mean in the primary schools.

Test for Data Normality

Kolmogorov–Smirnov Test has been utilized to test the data normality. If the distribution of data is normal, we can use the inferential and statistical tests. To analyze the data normality, the H0 assumes that the distribution of data is normal. This test is examined at level of 5% error. If a significant value is achieved larger/equal than 0.05, there will be no reason to reject the H0. Therefore, the distribution of data will be normal. The results of data normality have been given in Table 4.

Table 4: Test for Normality of Research Variables in Current Situation and Desired Situation

	Tool		Content		Teaching Method		Instructional Design		Evaluation		Learning Theory	
	Current Situation	Desired Situation	Current Situation	Desired Situation	Current Situation	Desired Situation	Current Situation	Desired Situation	Current Situation	Desired Situation	Current Situation	Desired Situation
Number (N)	242	242	242	242	242	242	242	242	242	242	242	242
Mean	2.6458	4.1630	2.4071	4.0427	2.4516	4.0438	2.7502	4.0651	2.2847	3.9691	2.4274	4.0165
Standard Deviation	0.89291	0.80932	0.90854	0.94758	0.93186	0.92469	0.92054	0.92248	1.00404	1.02075	1.02168	1.01641
Statistics (ks)	1.107	2.341	1.256	2.430	1.720	2.342	1.379	2.418	1.561	2.431	2.034	2.728
Significance (Sig.)	0.172	0.064	0.085	0.092	0.065	0.067	0.092	0.075	0.074	0.087	0.086	0.056

Based on the results of Kolmogorov–Smirnov Test given in Table 4, the significance value is larger than the error level in all cases (Sig.>0.05). Thus, there is no reason to reject the H0. Therefore, the distribution of data is normal.

In the following, the results of one-sample T-test are given to analyze the current situation of blended learning in the schools. Table 5 includes a summary of results for one-sample T-test according to the means of respondents' views.

Table 5: Results of One-Sample T-test for Research Variables in Current Situation

Research Variables	Mean	T Value	Significance Value	Confidence Interval 95%	
				Lower Bound	Upper Bound
Tool	2.64578	46.095	0.000	2.5327	2.7588
Content	2.40711	41.215	0.000	2.2921	2.5222
Teaching Method	2.45162	40.927	0.000	2.3336	2.5696
Instructional Design	2.75021	46.476	0.000	2.6336	2.8668
Evaluation	2.28468	35.398	0.000	2.1575	2.4118
Theory	2.42739	36.884	0.000	2.2977	2.5570
Current Situation of Blended Learning (Total)	2.49529	46.307	0.000	2.3891	2.6014

According to the findings in Table 5, it is observed that the mean of respondents' views is 2.49 in the current situation which is lower than the medium limit of Likert's scale. The significance value is 0.000 which is lower than error level 0.05. The t value is 46.6307 which is higher than critical value 1.96. Meanwhile, the upper bound and lower bound of confidence interval are higher than 0 (positive) and the test claim is confirmed. Therefore, it can be said with 95% confidence that the observed mean is significant based on the statistical findings.

The results related to the calculation of one-sample T-test to analyze the desired situation of blended learning in the schools are given in the following. Table 6 includes a summary of results for one-sample T-test according to the means of respondents' views.

Table 6. Results of One-Sample T-test for Research Variables in Desired Situation

Research Variables	Mean	T Value	df	Significance Value	Confidence Interval 95%	
					Lower Bound	Upper Bound
Tool	4.16298	80.018	241	0.000	4.0605	4.2655
Content	4.04274	66.370	241	0.000	3.9227	4.1627
Teaching Method	4.04381	68.030	241	0.000	3.9267	4.1609
Instructional Design	4.06508	68.552	241	0.000	3.9483	4.1819
Evaluation	3.96911	60.489	241	0.000	3.8399	4.0984
Theory	4.01653	61.474	241	0.000	3.8878	4.1452
Current Situation of Blended Learning (Total)	4.05004	71.916	241	0.000	3.9391	4.1610

According to the findings in Table 6, it is observed that the mean of respondents' views is 4.05 in the current situation which is higher than the medium limit of Likert's scale. The significance value is 0.000 which is lower than error level 0.05. The t value is 71.916 which is higher than critical value 1.96. Meanwhile, the upper bound and lower bound of confidence interval are higher than 0 (positive) and the test claim is confirmed. Therefore, it can be said with 95% confidence that the observed mean is significant based on the statistical findings.

Hypothesis 3:

Table 7 includes the statistical results related to the comparison of data in the current situation and desired situation.

Table 7: Comparison of Current Situation and Desired Situation of Blended Learning in Primary Schools

Situation	Mean	T Value	df	Significance Value	Confidence Interval 95%	
					Lower Bound	Upper Bound
Current	2.49529	46.307	242	0.000	2.3891	2.6014
Desired	4.05004	71.916	242	0.000	3.9391	4.1610
Comparison of Current & Desired	-1.55475	-28.853	242	0.000	-1.6609	-1.4486

According to Table 7, it is observed that there is a significant difference between current situation and desired situation. The statistical means in the current situation and desired situation are 2.49 and 4.05, respectively, with 1.55 difference in between. The difference between both situations is -28.853 in terms of T-value. Thus, the claim for difference between means of current situation and desired situation is confirmed. It is concluded that the current situation of applying blended learning in the primary schools is lower than the desired and expected situation.

Hypotheses 4 and 5:

The results of Friedman test have been presented in Table 8 in order to determine the priority between the variables of current situation and desired situation.

Table 8: Ranking Minor Variables to Analyze Current Situation and Desired Situation

Main Dimensions	Friedman Rank		Importance Rank	
	Current Situation	Desired Situation	Current Situation	Desired Situation
Tool	4.15	3.86	2	1
Content	3.18	3.49	5	3
Teaching Method	3.23	3.42	4	5
Instructional Design	4.38	3.61	1	2
Evaluation	2.83	3.14	6	6
Learning Theory	3.24	3.47	3	4

Based on Table 8, for the current situation, the instructional design has the best situation with 4.38 Friedman rank. Tool is at the second rank with 4.15 score. Learning theory is at the third rank with 3.24 score. Teaching method, content and evaluation are at the next ranks. For the desired situation, tool possesses the best situation with 3.86 Friedman rank. The instructional design is at eh second rank with 3.61 score. Content is at the third rank with 3.49 score. The learning theory, teaching method and evaluation are the next ranks. The results of Friedman test have been presented in Table 9 to determine the difference in application between variables for current situation (hypothesis 4).

Table 9: Freidman Test to Analyze the Difference in Application Between Variables in Current Situation

Situation	Number	Chi-square	df	Significance Value
Current Situation	242	135.799	5	0.000

According to Table 9, it is seen that the significance level is very small and estimated about 0.000 (Sig.<0.05). Therefore, it can be concluded with 95% confidence that there is a difference in the application of blended learning's components in the current situation of primary schools and the H0 is rejected.

The results of Friedman test have been presented in Table 9 to determine the difference in application between variables for desired situation (hypothesis 5).

Table 10: Freidman Test to Analyze the Difference in Application Between Variables in Desired Situation

Situation	Number	Chi-square	df	Significance Value
Desired Situation	242	23.674	5	0.000

According to Table 10, it is seen that the significance level is very small and estimated about 0.000 (Sig.<0.05). Therefore, it can be concluded with 95% confidence that there is a difference in applying components of blended learning in the desired situation of primary schools and the H0 is rejected.

DISCUSSION AND CONCLUSION

The general purpose of the present research is to analyze the current situation of applying blended learning in the primary schools in comparison with the desired and expected situation. Data analysis of first hypothesis showed that the mean of all components of blended learning in the current situation is lower than the medium point of Likert scale (M<3). The measurement of second hypothesis showed that the mean of all components of blended learning in the expected and desired situation is higher than the medium of Likert scale (M>3). The findings show that the subject of blended learning requires much more attention in the training and learning of primary schools. Data analysis of third hypothesis demonstrated that the mean of current situation is 2.49 and the mean of desired and expected situation is 4.05 with -1.55 difference. Thus, there is a significant statistical difference at Sig.<0.05 level with T-value (t=-28.853) between the current situation and desired situation for applying the blended learning in the primary schools. In addition, data analysis related to the hypotheses 4 & 5 showed that there is a significant difference in the application of components in the current situation and desired situation in the schools at Sig.<0.05 level. Beaudry (2011), Lefton (2012), Richardson (2010), Rosen and Beck-Hill (2012) and Ruiling and Overbaugh (2009) believe that the environment of blended learning and integrating technology with the classroom activities can be fruitful for many students.

Furthermore, the following studies are in line with the present research: Van Lin et al. (2017) increased the motivation of students in the environment of blended learning; Yazdizadeh Ravari (2016) increased the enjoyment, hope, pride, activity emotion, outcome emotion and reduced the fear, anxiety and embarrassment; Tabatabaei (2016) promoted the level of student's learning; Shah Virin et al. (2016) and Ahmadpoor Kasghari (2015) worked on the field of attention, support and use of advantages of both traditional and electronic learnings in the blended learning; Audi et al. (2014) enhance the performance of students' learning; Ling et al. (2010) worked on the satisfaction of students with the group learning, flexibility, motivation and collaboration in the blended learning courses; Akoyonla & Soyla (2008) studied the compatibility of blended learning approach with the style of learners' learning, the positive perspective of learners towards blended learning and promotion of learning results; and Christiansen (2003) promoted the learning performance and better performance in the social talk and communicative skills.

The interpretation of research findings shows that the training and learning in schools still depends on the traditional and common methods although there are developments in the learning and communicative technologies. So, the blended learning and using the advantages of both traditional and electronic methods required vital and serious support and conviction. In order to achieve the high level of interaction between learners, high quality in the education system and access the desirable performance and effectiveness, the schools should utilize the blending in terms of tools, content, teaching methods, instructional design, evaluation methods and learning theories. The findings have demonstrated that none of the traditional and electronic methods can individually reach the aims and missions in the training system because the aptitude, enthusiasm, interest, motivation and traits of learners differ and the type of learning and training for each learner varies on the one hand and the e-learning should be utilized to be adapted with the technology and the face-to-face and its interactions should be resulted on the other hand. Thus, applying the blended learning as an effective and modern learning method is an inevitable necessity in the schools.

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