EFFECTS OF ACTIVITY BASED BLENDED LEARNING STRATEGY ON PROSPECTIVE OF TEACHERS' ACHIEVEMENT AND MOTIVATION

By

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ABSTRACT

The study investigates the effect of Activity based Blended Learning strategy and Conventional Blended Learning strategy on students' achievement and motivation. Two groups namely, experimental and control group from Sultan Qaboos University were selected randomly for the study. To assess students' achievement in the different groups, pre- and post. achievement tests were used. Three ways 2x2x3 ANCOVA and 2x2x3 ANOVA were used to test for significance. The results of the study (N = 52) show that there was a statistically significant difference between the two methods in terms of students' achievement and motivation favoring the activity based blended learning method (n =26). No significant difference was found due to gender or GPA for both achievement and motivation. In addition the results show no interaction effects for the independent variables. The study concluded with some recommendations.

Keywords: Achievement, Activity Based Blended Learning, Blended Learning, Motivation, Prospective Teachers.

INTRODUCTION

The rapid development of Internet technologies such as e-mail, course websites, and Learning Management System (LMS) has added value to traditional classroom knowledge delivery and dramatically increased the approaches of teaching and learning. Among these new approaches, e-learning and blended learning have become a promising fields. McLaughlin, et al., (2015) highlight the importance of e-learning with classroom learning and the role of blended learning in improving academic performance. E-learning refers to a computer based educational tool or system that enables learners to learn anywhere and at any time. Recently, e-learning is being introduced into University classes with the popularization of the Internet and it has been high-profile topics in Higher Education for some years (Saito & Kim, 2009). Today e-learning is mostly delivered though the internet, although in the past it was delivered using a blend of computer-based methods like CD-ROM (Epignosisllc, 2014). E-learning provides an edge on traditional learning and teaching activities by permitting a wider spread of appropriate pedagogies. In addition, it responds to different learners' needs with the use of different tools and a variety of materials (Epignosisllc, 2014). For example, e-learning commonly offers audio visual content or interactive testing on the go that can be more attractive for the learners than traditional books.

Literature Review

Blended learning is a combination of face-to-face classroom teaching with lecture and class formats and the use of an asynchronous online classroom. The students undertake a range of learning activities based on their classes. These enhance their knowledge through additional activities and through browsing relevant linked websites, with other activities such as self-assessments, exercises and group tasks and structured discussions. It is the integration of online with face-to-face instruction in a planned, pedagogically valuable manner; and not just a combination (addition) of online with face-to-face but a trade-off (replacement) of face-to-face time with online activity (Niemiec & Otte, 2005). Blended learning could be considered as an integration of the best of face-to-face and online learning while significantly reducing traditional class contact hours (p.1). When the strengths of each approach are integrated in an appropriate and creative manner, the possibility to become fully engaged in a sustained manner is increased exponentially. In this way,

blended learning designs reach the benefits of convenience, access and efficiency. The true benefit of blended learning is in integrating face-to-face verbal and online text-based exchanges and matching each to appropriate learning tasks (Vaughan & Garrison, 2005; McGee & Reis, 2012).

An activity is an educational event that helps students to understand the content better and enhances their engagement in learning. It is a process of combination of traditional and online instructional events, such as presentations, online quizzes, reflection, sharing ideas, posing questions, solving problem and so on. Activity-based instruction is an instructional approach to education focusing on the idea that students should be engaged through actions. This is in contrast to some traditional forms of teaching in which an Educator/Lectures or otherwise relays information to students who are expected to absorb what they are told. In activity-based instruction, an Educator serves the function of facilitator assisting students through the learning process and providing them with guidance. An activity based blended learning strategy is an instructional approach in which the emphasis is on the learning by doing and making sense of the content taught. It focuses on deep and meaningful learning in which learners are required to practice what they learn through engagement and active participation in both face to face and online. It is an approach in which students pursue a goal by practicing target skills and using relevant content to help them achieve their goal. During this approach students are provided with guidance just in time for them to use the information. Giving feedback in this manner allows learners to remember what they are taught. It can be either live in face to face or on online environment, as long as they contain a rich amount of content, support interesting and complex activities, and are inherently motivating to the learners. Activity Based Learning (ABL) theory is a Cognitive-Learning theory which is basically a "constructivist" learning theory (Hein, 1991, Stößlein 2009). According to constructivist view of learning each person construct their own knowledge and learning process based on previous experience. This theory asserts that learning takes place when psychological environment of an individual interacts with a particular structure.

Hameed, Badiiand Cullen (2008) found that there were no significant differences between both the groups in E-Learning and Blended learning mode in terms of the learning achievement. From this it can assume that delivery mode may not affect students learning to a significant degree. The finding suggests that collaboration is an important factor in both the learning modes to enhance the students, engagement with peers and instructors. Different teaching and learning methods such as group discussion, group assignments, class assignments, class discussions are considered the most effective learning activities for learners and all these are best practice in a blended learning environment than just in E-Learning.

Lopez-Perez et al. (2011) indicated that the use of blended learning has a positive effect on reducing dropout rates and in improving exam marks. Moreover, the students' perceptions of blended learning are interrelated with their final marks depending on the blended learning activities and on the students' age, background and class attendance rate. Al- saai et al (2011) investigated the effect of a blended e-learning environment on students' achievement and attitudes toward using e-learning at the University level. Results showed insignificant difference between the instructional treatments in gain scores of the achievement test. Yapici and Akpyin (2012) found that the blended learning model contributed more to the students' biology achievement than traditional teaching methods did and that the students' attitudes towards the Internet developed statistically significant.

Nahs and Alotaibi (2013) have conducted a study to investigate the effect of blended learning on developing critical thinking skills of a sample of students at Teachers' College in King Saud University. They found that there were no statistically significant differences between the experimental group (blended learning) and the control group (traditional learning) in critical thinking skills.Currently, there is a growing concern about the effectiveness of the blended learning strategy. Shen et al. (2013) have conducted a case study with mixed methods of data collection analysis to examine the application of blended learning in accelerated post-baccalaureate teacher

education at the program level. Findings from their study support the viability and benefits of applying blended learning in teacher education at the program level. Al-ani (2013) provides supporting evidence to move forward towards a blended learning environment using Moodle. Students' responses have shown the effectiveness of using Moodle on their learning motivations, achievements, and collaboration and communication skills. The results also demonstrate that using blended learning will help students to be more self-regulated and self-directed by reducing the number of days and hours spent in traditional face-to-face learning environments. Bhote (2013) confirmed that trainee teachers in the blended course were able to develop their professional skills and knowledge as effectively as those who attend non blended courses. Abdelraheem (2014) indicated that students in the blended learning strategy with enrichment group activities outscored ingrades significantly their counter partners in conventional method. Khatib Zanjani and Hosseinzadeh (2015) found that blended method of teaching compared with traditional method is more effective and has greater influence on educational progress of students in high school in the subject of mathematics.

Integrating motivation in the blended courses is a challenging task for instructional designers. The ARCS (Attention, Relevance, Confidence and Satisfaction) motivation theory was proposed to guide instructional designers and teachers who develop their own instruction to integrate motivational design strategies into the instruction. The ARCS model is a model for instructional design developed to enhance learner motivation (Capshew, 2005) and has been applied to courseware design (Suzuki, Nishibuchi, Yamamoto & Keller, 2004). ARCS are the four conceptual components of the theory. Attention category refers to gaining learners' attention and sustaining active engagement of learners. Relevance category includes strategies that establish connections between instructional environment and past experiences of learners. Confidence category incorporates students' feelings and expectancy for success. The last category satisfaction includes strategies that help learners establish positive feelings about their learning experiences (Keller, 2008).

Researchers have investigated the effectiveness of ARCS model in different learning environments. In terms of the blended learning environment, Colakoglu and Akdemir (2010) have conducted study to compare the students' motivational evaluation of blended course modules developed based on the ARCS Motivation Theory and students' motivational evaluation of blended course modules developed to follow the standard instructional design procedure. Results of the study indicated that designing instruction in blended courses based on the ARCS motivation theory provides more motivational benefits for students and consequently contributes to student learning. Aygun (2012) have investigated the effects of Algo–Heuristic theory based blended learning environments on students' computer skills in their preparation of presentations, levels of attitudes towards computers, and levels of motivation regarding the information technology course. Research data was collected using an Academic Achievement Test, Computer Attitude Scale for Primary School Students and Motivation Scale for the Information Technology Course. Their results revealed that the achievements and motivation levels of the students who studied in an Algo–Heuristic theory based blended learning environment in the information technology course increased significantly. In a more recent study, Alajab and Hussain (2015) found that there was a significant effect of the proposed blended learning strategy on subjects` achievement in the English for Science; as well as their motivation to learn Scientific English. Moreover, their results indicated that experimental groups' candidates reported a high degree of satisfaction with blended learning experience in Scientific English.

It is clear from the above literature and previous studies there were many researches that explored the issue of blended learning. However, a great majority of these research were directed towards investigating the effect of a blended learning on students' achievement and motivation compared to traditional learning (Lopez-Perez et al., 2011; Yapici & Akpyin, 2012; Al-ani, 2013; Colakoglu & Akdemir, 2010; Aygün, 2012; Alajab & Hussain, 2015) or on developing critical thinking skills (Nahs & Alotaibi., 2013) there seems to be a limited supply of previous research that

has investigated the effect of activity based blended learning compared to blended learning itself. Other studies investigated the effect of a blended learning compared to E-Learning in terms of the learning achievement (Hameed, Badii& Cullen, 2008); blended e-learning environment on students' achievement and attitudes toward using e-learning at the University level (Al- saai et al, 2011). In this paper, the authors examine the comparison between two blended learning strategies which are Blended Learning and Activity Based Blended Learning.

Research Questions

1. Is there a main effect on teaching strategy on prospective teachers' post test scores? (i.e., do mean total points earned in one teaching strategy differ significantly from the other one?

2. Is there a main effect on gender? (i.e., do males scores significantly different form females on post test scores?

3. Is there a main effect on GPA? (i.e., do students with different GPA score significantly different on post test scores?

4. Is there any significant interaction between teaching strategy and gender?

5. Is there any significant interaction between teaching strategy and GPA?

6. Is there any significant interaction between gender and GPA?

7. Is there any significant interaction between teaching strategy, gender and GPA?

8. Is there a main effect for teaching strategy on prospective teachers' motivation?

Purpose of the Study

The purpose of this study is to test the effectiveness of the proposed learning strategy in teaching an introductory course in Educational Technology (TECH 3007), which is a three credit - hour course taught for all students at the College of Education of Sultan Qaboos University. In detail, the proposed study investigates the impact of activity based blended learning strategy on achievement and determines whether it will lead to better motivation towards learning. It also, examined the variations of achievement with gender and grade point average, and the variation of motivation with gender and grade point average.

Methodology

To explore the relationship between teaching methods, students' motivation and academic performance, a quasi-experimental research design was chosen. Experimental research provides the best results for the cause and effect correlation of the experiment and comparison groups. The sample was randomized by design. The respondents came from two sections of the same course that had been randomly self-selected during fall 2015 semester. The reason for dividing the class was simply because of the large number of students who needed the class. The groups were equally distributed comprising 26 in each. The study was conducted at Sultan Qaboos University. The class was an Educational Technology course and the respondents were all students who registered for this course (TECH 3007, Introduction to Educational Technology). One teacher taught two sections at two different times of the week. The students who agreed to participate in the study wrote a pre-test and a post-test, and filled out Keller's ARCS motivation scale. At the beginning of the study, the researchers made an arrangement as to how the two sections of the class would be taught differently with the same materials. One of the classes used traditional blended learning teaching methods. The other class used activities based blended learning teaching methods. The duration for this small experimental study was 8 weeks. The classes had 4-hour class period every week. The chapters' coverage were divided equally for both classes to provide equal distribution of the lessons that the experiment covered. A pre-test and a post-test were conducted for both classes before and after the intervention to test for students' academic performance. ARCS motivation model was conducted at the end of the experiment.

The researchers selected suitable media and learning devices that enable the students to achieve the stated objectives. The two groups were taught by integrating different types of learning activities and resources in classroom (face-to-face) and online learning activities using MOODLE. These activities contain group activities, such as site-based learning, online space for collaboration

and communication spaces to enable the students create groups to collaborate, communicate, and share the content with their colleagues. Concept Map in which the students were asked to create their own concept maps and then to upload them on MOODLE, application of ASSURE model on any lesson, presentations in which the students were asked to used Power Point to create their presentations. Educational Videos by using Moviemaker, writing research papers, and reflection activities in which the students were asked to write a short paragraph which summarizes their learning. The resources that students will use in doing all these activities (e.g., instructions, learning objectives, content materials, online tools etc) are created and linked into the MOODLE before the student starts the course. Pointers to resources and supports were provided. In addition, the researchers provided the students with the immediate feedback for all activities by considering the due dates for all course activities.

All activities were designed to enable students to learn easily. Students read the lesson from printed materials, understood the structural rules, read the examples and did the activities. They used MOODLE to apply what they have learned through doing activities and receiving immediate feedback. Moodle was used for discussion and knowledge exchange. The researchers presented a topic or aroused questions and students answered them and also the researchers provided some useful links as additional helper for the students. Macromedia tools were used to produce other interactive activities including drag and drop, pictures with choices and text entry.

In addition to the above activities which were used for both groups, the experimental group took additional enrichment and more activities than the control group such as practicing online communication skills; critical thinking in an online discussion; practice online quizzes; create their own ASSURE model; create presentations by using different type of presentation software programs such as Prezi, PresntationTube, PowToon, and Emaze; create videos by using different type of video production software such as Camtasia and VideoStudio; create concept maps out of textual materials; and evaluate their materials using rubrics.

Population and Sample

The target population is all 128 Undergraduate students who are studying and will study Educational Technology courses in the Department of Instructional and Learning Technologies at the College of Education of Sultan Qaboos University at Oman. The sample consists of the students who studied TECH 3007: Introduction to Instructional Technology, in the year 2014 /2015 at the second semester with total number of 52 divided into two classes. Each class consisted of 26 students. The researchers chose one class randomly to be the experimental group and the other as control group. The period of study was about eight weeks as Table 1 shows the distribution of the sample.

Variables of the study

The independent variables were the teaching methods (categorical variable) which are the strategy of blended learning based on enrichment activities and conventional blended learning methods both electronically designed in the MOODLE course management system, gender and GPA. Both control and experimental group attended the face to face classes and online classes at MOODLE environment. However, the experimental group was exposed to the enrichment activities in the learning management system which is MOODLE based and in class activities. The study involved two dependent variables which are achievement and motivation.

Instruments

Achievement Tests (Pre and Post test)

Given the nature of this study which would require the identification of the student level of knowledge about the content covered before and after the experiment, an achievement test about technological knowledge and understanding was prepared on the basis of the unit objectives and featuring items drawn from the set text. The achievement test items consisted of 40 questions (20

Variables	Label	N
Groups	Control	26
	Experimental	26
GPA	1 &< 2	20
	2 &< 3	18
	3 & 4	14
Gender	Male	20
	Female	32

Table 1. The distribution of the sample

true/false questions and 20 multiple-choice questions with half mark for each). However, in the light of the assessors' comments and suggestions the achievement test was modified in its final draft consisting of 40 questions having objective questions. To verify the face validity of the achievement test, it was submitted with the general aims, behavioral objectives and the content of the unit to a number of assessors from the Department, in order to benefit from their advice and comments regarding the suitability and clarity of test questions. The test was also piloted with 30 students who were not the members of the study. Sample and the level of difficulty assessed, ranging from 0.18 to 0.51 which was considered acceptable. The reliability (internal consistency) was 0.83 and considered sufficient to use in the main study (Zinbarg, Yovel, Revelle, & McDonald, 2006). After preparation and confirmation of validity and reliability of the environment and research instruments, the teaching experiment was undertaken over a 8-week block. The two groups were taught the same unit by the same instructor (who was one of the researchers) in each of the conditions.

Motivation Scale (ARCS)

The present study adapted the Instructional Materials Motivation Survey (IMMS) by Keller for assessing subjects' motivation towards learning technological content. The survey consists of thirty six items; twelve for attention, nine for relevance, nine for confidence and six for satisfaction. The (IMMS) administrated at the end of the course for the two groups. Alpha Cronach reliability for the total survey was 0. 91and for each dimension of the survey was 0.81 for attention, 0.81 for relevance, 0.67 for confidence and 0.64 for satisfaction. The survey can be scored for each of the four subscales or the total scale score. The response scale ranges from 1 to 5. This means that, the minimum score on the 36 item survey is 36, and the maximum is 180 with a midpoint of 108. The minimums, maximums, and midpoints for each subscale vary because they do not all have the same number of items. Also, since the scale contains negative items the scoring process took into consideration by reversing the value of response (i.e. 5=1, 4=2, 3=3, 2=4, 1=5).

Results and Discussion

In order to answer the first seven questions descriptive statistic and 2x2x3 ANCOVA with a prestest as a covariate were used. Table 2 and Table 3 below show the statistic.

It is clear from Table 2 that the experimental group has a mean of (17.0577) which is greater than the control group (mean= 14.6731). The standard deviation indicated that the experimental group is more homogenous than the control group. With regard to the gender, variable male (mean= 16.5000) is greater than female (mean= 15.4688). The standard deviation indicated that the male is more homogenous than female. The GAP variable indicated that students with low GPA (mean= 16.2000) is greater than the other average and high GPA (mean =15.4722, 15.8929) respectively. In order to check for significant analysis of covariance in Table 3, it was carried out with the pretest as a covariate.

It is clear from the results of Table 3 that, there is a significant difference in the mean scores of the post test between the control group and experimental group (F-value= (6.865)

Variables		N	Mean	Std. Deviation
Groups	control	26	14.6731	2.12105
	experimental	26	17.0577	1.75685
gender	male	20	16.5000	1.98680
	female	32	15.4688	2.37913
GPA	1 &< 2	20	16.2000	1.65752
	2 &< 3	18	15.4722	2.71960
	3 & 4	14	15.8929	2.48981

Table 2. Means and Standard Deviations of the three variables in post test scores

Dependant variable: posttest Source	Type III Sum of Squares	df	Mean Square	F	Sig.
CorrectedModel	125.310[a]	11	11.392	3.296	.003
Intercept	705.915	1	705.915	204.246	.000
pretest	20.971	1	20.971	6.068	.018
group	23.728	1	23.728	6.865	.012
GPA	6.768	2	3.384	.979	.384
gender	1.217	1	1.217	.352	.556
group* GPA	5.673	2	2.837	.821	.447
group* gender	.027	1	.027	.008	.931
GPA * gender	5.640	2	2.820	.816	.449
group * GPA * gender	2.330	1	2.330	.674	.416
Error	138.248	40	3.456		
Total	13352.500	52			
Corrected Total	263.558	51			

a. R Squared = .475 (Adjusted R Squared = .331)

Table 3. 2x2x3 ANCOVA Factorial Design

with df = (1, 51) significant at 0.012) in favor of the experimental group. This means that the group in the activity based blended learning strategy outscored significantly their counter partners in the conventional blended learning group. This result could be attributed to the benefits of the extra activities received by the experimental group. They required to practice what they learn through more engagement and active participation in both face to face (f2f) and online. In this strategy students pursue a goal by practicing target skills and using relevant content to help them achieve their goal. During this strategy, students were provided with guidance just in time for them to practice the activities and put their hand on the content. Providing them with feedback in this manner allows learners to retain what they are taught. The enrichment activities such as practicing online communication skills; critical thinking in an online discussion; practice online quizzes; create their own ASSURE model; create presentations by using different type of presentation software programs using Prezi, PresntationTube, and Emaze; create concept maps out of textual materials; and evaluate their materials using rubrics, all these activities play the major role in increasing prospective teachers' performance in the post test. This result is supported by Abdelraheem (2014) who used blended learning strategy with enrichment activity and found that it was effective in teaching. Conventional blended learning strategy was found to be effective as shown by (Lopez-Perez et al., 2011; Yapici & Akpyin, 2012; Al-ani, 2013; Colakoglu & Akdemir, 2010; Aygün, 2012; Alajab & Hussain, 2015) but these findings focuses on comparing the blended learning strategy with the traditional teaching and e-learning. If this is the case that implies activity based blended learning is better than the conventional blended learning strategy, traditional teaching and e-learning. Also, this result is in alignment with what Bonwell & Eison (1991, p.83) state that 'instructional activities involving students in doing things and thinking about what they are doing.' and that increases their performance. Fallows & Ahmet (1999, p.34) assert that 'learning is most effective when student involvement, participation and interaction is maximized.'

In addition, Table 3 shows there is no a significant difference in post test scores of the male and female and there is no a significant difference in post test scores due to GPA variable. In terms of interaction between independent variables Table 3 shows there is no interaction effect between the teaching methods and gender, between the teaching methods and the GPA, between gender and GPA, and between methods, gender and GPA.

In order to answer question eight which states "Is there a main effect for teaching strategy on prospective teachers' motivation?" descriptive statistic and 2x2x3 ANOVAwere used. Table 4 and Table 5 below show the statistic.

It is clear from the Table 4 the experimental group has a mean of (3.9925) which is greater than the control group (mean= 3.4882). The standard deviation indicates that the experimental group is more homogenous than the control group. With regard to the gender variable male (mean= 3.8764) is greater than female (mean= 3.6554). The GAP variable indicated that students with low GPA (mean= 3.8264) is greater than the other average and high GPA (mean =3.6975, 3.6726) respectively. In order to check for significance three ways analysis of variance in Table 5 was

Variables		N	Mean	Std. Deviation
Groups	control	26	3.4882	.37161
	experimental	26	3.9925	.32457
gender	male	20	3.8764	.28592
	female	32	3.6554	.48318
GPA	1 &< 2	20	3.8264	.34281
	2 &< 3	18	3.6975	.56671
	3 & 4	14	3.6726	.33443

Table 4. Means and Standard Deviations of the three variables in motivation scale

Dependant variable: posttest

Dependent Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	4.678[a]	10	.468	4.068	.001
Intercept	586.069	1	586.069	5097.035	.000
group	1.857	1	1.857	16.149	.000
GPA	.129	2	.064	.559	.576
gender	1.521E-005	1	1.521E-005	.000	.991
group*GPA	.595	2	.297	2.587	.088
group*gender	.022	1	.022	.188	.667
GPA*gender	.167	2	.084	.727	.489
group*GPA* gender	.169	1	.169	1.468	.233
Error	4.714	41	.115		
Total	736.897	52			
Corrected Total	9.392	51			

a. R Squared = .475 (Adjusted R Squared = .331)

Table 5:2x2x3 ANOVA

carried out.

Table 5 shows that there is a significant difference in the mean scores of the motivation between the control group and experimental group (F-value= (16.149) with df = (1, 51) significant at 0.000) in favor of the experimental group. This means that the group in the activity based blended learning strategy shows high motivation level than their counter partners in the conventional blended learning strategy. This result could be explained by considering the role of activities on motivation since those activities focus on deep and meaningful learning in which learners are required to practice what they learn through engagement and active participation in both face to face (f2f) and online. In addition providing students with immediate formative feedback and giving them enough time and support during these activities served and raised their motivation level. The flexibility of the extra activities in both f2f and online learning help to increase students' motivation and expectation to meet the desired objectives. This result is supported by Al-ani (2013), Aygün (2012) and Alajab & Hussain (2015) who reported that the students in blended learning strategy exhibit greater motivation than their counter partners in other strategies.

In addition, Table 5 shows there is no a significant difference in motivation of the male and female and there is no a significant difference in motivation due to GPA variable. In terms of interaction between independent variable Table5 shows there is no interaction effect between the teaching methods and the gender, between the teaching methods and the GPA, between gender and GPA, and between methods, gender and GPA.

Conclusion & Future works to be done

The purpose of this study is to test the effectiveness of the proposed learning strategy in teaching an introductory course in educational technology (TECH 3007), which is a three credit - hour course taught for all students at the College of Education of Sultan Qaboos University. In detail, the proposed study investigates the impact of activity based blended learning strategy on achievement and determines whether it will lead to better motivation towards learning. It also, examined the variations of achievement with gender and grade point average, and the variation of motivation with gender and grade point average. The study found that there is a significant difference in the mean scores of the post test between the control group and experimental group (F-value=(6.865) with df = (1, 51) significant at 0.012) in favor of the experimental group. The study also showed that there is a significant difference in the mean scores of the motivation between the control group and experimental group (F-value= (16.149) with df = (1, 51) significant at 0.000) in favor of the experimental group. In addition, the result indicated that there is no significant difference in post test scores of the male and female and there is no a significant difference in post test scores due to GPA variable. In terms of interaction between independent variable the result showed that, there is no interaction effect between the teaching methods and the gender; between the teaching methods and the GPA; between gender and GPA; and between teaching methods, gender and GPA. Moreover, the study found that there is no a significant difference in motivation of the male and female and there is no a significant difference in motivation due to GPA variable. In terms of interaction between independent variable, it showed that there is no interaction effect between the teaching methods and the gender; between the teaching methods and the GPA; between gender and GPA; and between methods, gender and GPA. Given these findings, it can be stated that good progress is being made towards realizing some of the main goals of blended learning at the SQU. However, there is still much to be done. The following are target areas for continuing the work:

1. Performance activities should be based on dealing with specific real problems, rather than on simply finding out what is happening in the work place. Hence, course objectives should be expressed more in terms of 'what to do' related to the real problem or opportunity, rather than 'what the participant will know about'.

2. Collaboration and sharing activities should make even more use of the opportunity for participants to learn from each other and work collaboratively.

3. Efforts should be made by the course design teams to integrate knowledge-sharing networks and best practice databases within the courses

Recommendation

Based on the findings of this study the researchers recommended the following:

- Higher education institutions must consider activity based blended learning in their teaching.
- When using blended learning strategy, emphasis should be focused on activities.
- Various activities should be used to suite face to face mode.
- Various activities should be used to suite online mode.
- Activities should be accompanied by immediate formative feedback.
- Teacher must be equipped with the knowledge and skills of implementing activity based approach in the school through pre-service and in-service program. Training packages may be developed in this regard.

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