Effect Of Blended Learning Strategy On Achievement In Economics In Relation To Motivation To Learn

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Abstract: The present study investigates the effect of blended learning strategy on achievement in Economics in relation to motivation to learn Economics. The sample consisted of 120 students of XI class from two private schools of Amritsar city affiliated to CBSE, New Delhi. The study covered two independent variables viz. instructional strategies and motivation to learn Economics. The variable of instructional strategies was studied at two levels, namely blended learning strategy and conventional teaching strategy. The variables of motivation to learn was studied as three levels, namely high, average and low motivation to learn economics. The dependent variable was the performance gain which was calculated as the difference in post-test and pre-test scores. The experimental group was taught through blended learning strategy on various five topics from the Economics subject of class XI and the control group was taught by conventional method of teaching by the investigators. The instructional material and achievement test in Economics was developed by the investigators. The tool was used for data collection. The achievement test in Economics and motivation to learn Economics test was also administered. After pre and post-testing of all the students, the mean gain scores were computed. The statistical techniques such as Mean and SD were used in the analysis of data. F-ratio and t-test were employed to find the significance of difference between means related to different groups and variables. The data was analyzed using Analysis of Variance (2×3) and following conclusions were drawn: (i) The performance of blended learning strategy group was found significantly higher as compared to the conventional teaching group. (ii)The performance of high motivation to learn group was higher than that of average and low motivation to learn economics group (iii) There was significant interaction effect was found between the instructional strategies and motivation to learn economics group.

Key Terms: blended Learning Strategy, Conventional Teaching Strategy, Achievement in Economics, and Motivation to Learn Economics.

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1. INTRODUCTION

Nowadays, due to rapid advancement in technology, there are huge gaps in the subject material used in the past and those used at present. Foremost reason for the same is shift in the roles of both teacher and taught along with classrooms settings and schools. Today, the smart board, portable computers, to name few, have replaced chalkboard. This has lead to shift in educational approach from teacher centered to student centered approach where learner structures the information and teacher only acts as a facilitator [1; 2]. Based on the results of various researches in the field of learning, traditional modes of learning are less preferred by most students. As a result, educational practices demands transformation of the weaknesses of traditional method to be a boom for educational purposes. Moreover, it has been witnessed from previous results that students prefer novelty in learning [3]. With the progress in ICT, supplementary innovative deliveries and learning solutions have come up to provide significant learning experiences in the classroom settings. To deliver meaningful learning experiences, blended instructions are one of the various methods being used [4]. According to [5] "learning refers to learning as a change in behavior that is due to experience. This is essentially a very basic functional definition of learning in that learning is seen as a function that maps experience onto behavior. In other words, learning is defined as an effect of experience on behavior." Likewise, learning involves new ways of doing things with no limit to adopt the ways and means to attain the goals. It is a continuous, comprehensive process which involves different methods and covers conative, cognitive and affective domains of human behavior. More recently, however, "blending" emerged as a powerful force in the educational institution to improve teaching and learning. Dictionary meaning of blended refers to combination of various aspects, in a way that the one compliments the other. The Sloan consortium defined blended course as, "a course that blends face to face and on-line delivery where 30-79% of the content is delivered on-line" [6]. Blended learning is "the combination of pedagogic approaches" [7] or "the mix of different didactic methods (expository presentations, discovery learning, cooperative learning etc.) and delivery formats" [8]. [9] focused that in blended mode of learning, "students are not just relying on that material provided by the teacher, but can search the material in various ways, among others, searching the library, asking friends or classmates online, opening websites, searching for learning materials through search engine, portal, or blog, or it could be with the media other media in the form of learning software and also tutorial learning" [10]. Blended learning blends both e-learning and face-to-face teaching [11]. Interestingly, it has been observed that students having positive attitude and higher motivational levels towards learning showed more positive attitude with regards to e-learning in blended courses [12]. This in turn impacts the learning ability of the students in terms of achievement. Since, it enables the individuals to learn at all times and in all places as per their convenience, has made learning more purposeful and also tend to retain and make use of what they learn better and longer. Similarly, [6] defines blended learning strategy as "a combination of instruction from two historically separate models of teaching and learning: traditional face to face learning systems and computer mediated learning". [13] also defined it as, "the integration of e-learning tools such as virtual learning environment with face to face learning." [14] defines blended learning as, "a mixture of synchronous technology (video, audio) and asynchronous media (like emails, blogs) of information and communication delivery." [15] identified four diverse conducts through which blended learning can be defined as blend of

- Modes of online technology;
- Pedagogical approaches;
- Technology with face to face teaching;
- Technology with actual classroom work.

The ultimate aim of employing different methods is to witness its influence on academic performance. The word achievement refers to achieving, the preferred end which require certain

amount of efforts. It is the proficiency in a given skill. Educationally achievement is level of a person's application ability of what is learnt in a given field of learning. It is the extent to which, in a given area, a learner is benefitted from instruction. In short, achievement is the product of general and specific learning experiences [16]. Knowledge of achievement is very important in order to do further improvements in instruction and learning strategies and ultimately to enhance the level of achievement. When a person is said to be an achiever we perceive him to have shown maximum of his abilities and full potential to accomplish a particular field. In the field of education achievement is generally taken as marks, grades obtained in the final examinations or level of perfection attained in particular area of work. According to [17], "achievement is the extent to which a learner is profiting from instruction in a given area of learning. It is the outcome of general and specific learning experiences." According to [18] achievement is, "the competence of a person in relation to a domain of knowledge through observing his performance." It is referred to as acquisition, learning, or knowledge representation, characterized by the degree of inference required on the part of the student to give a response. In this research, achievement is referred to the learning outcomes of a specific unit measured by marks scored by learners in the test held immediately at the completion of the unit. Hence, achievement is identified with the quality in learning achieved in a subject or subjects, after given instructions. Achievement is the foundation of almost every aspect of education. The programmes for improving education, schemes for educational accountability and the findings of most educational studies focus on achievement as an important construct. The term achievement implies the accomplishment of learning goals. Although learning can occur in an extensive range of contexts, but in an educational set up the learning goals relate with the teaching learning environment. The interaction of teacher and learners during classroom process is focused to assist learners acquire knowledge and develop understanding and skills [19]. Thus, the term achievement can be described as improvement that a student or group of students gain as a result of their learning experiences during teaching learning process. Achievement is based on documented change in performance, and requires two, parallel or linked measures of student learning; one administered at the beginning of an instructional sequence and another at the end. It is assessment of learners' academic capabilities in associated content areas, and the skills that necessary to survive in school and real world [20]. Measures of achievement provide the basis for "growth trajectories" in education and "value added" models of accountability [21; 22]. In order to learn new things with the new methods of teaching both students and teachers need motivation which plays a major role in the branch of education. Some students have problems in learning that outcomes do not correspond with the expectation. Highly motivated students will have both energy and audacity to perform. In other words, motivation and learning are closely interwoven. All learning is purposeful and goal-directed. Therefore, motivation is an essential condition of learning [23]. According to [24], "motivation is the central factor in the effective management of the process of learning. Some type of motivation must be presented in all learning." To develop right zeal among students to learn Economics is difficult. For this teacher must boost learners' motivation in learning economics. [25] argues that, "motivation is the description of person's motive to action.

It means that the teacher must use the right technique or approach to make students increase their motivation." The students' level of motivation is instrumental to determine students' learning outcomes in certain subjects like economics. Students who have high learning motivation are likely to get high results, because motivated students will try as hard as possible to get what they want [26]. Motivation is the enthusiasm and willingness of the person to achieve something. It is a reason for behaving and acting in a particular way. It is the reason for people's desire, need, action and wants. Both intrinsic and extrinsic motivation is needed in pupil and teacher in order to achieve the particular levels of education by using the new ways of learning. Motivation in the classroom can be supported and cultivated through two basic approaches which are (i) developing classroom structure and institutional method that encourages appropriate motivation, commitment, and learning; and (ii) devising system that encourages learners to be self-regulated [27]. [28] indicates that, "those students who have optimum motivation have an edge because they have adaptive attitudes and strategies, such as maintaining intrinsic interest, goal setting, and self-monitoring." In order words, "motivation is what gets you going, keeps you going, and determines where you're trying to go" [29]. According to [30] in his social cognitive approach, "motivation is the process whereby goal-directed activity is instigated and sustained. Motivation involves goals for purposeful action with an intended direction; action or activity is essential, and it can be either physical or mental; and finally, it requires taking a first step and committing to sustained action." [31] argued that, "motivation explains why people decide to do something, how hard they are going to pursue it, and how long they are willing to sustain the activity." Few people attempt to attain their targets for self-satisfaction and self-enhancement whilst others work hard to strive for prime position. Motivation and the follow-on behavior are affected by the various models of achievement motivation. Motivation determines the success rate of student learning which is an internal process and is one of the prime components [32]. Motivation is considered significant in knowing the influence of learning activity via technology or learning through face to face interaction. [28] indicates that "those students who have optimum motivation have an edge because they have adaptive attitudes and strategies, such as maintaining intrinsic interest, goal setting, and self-monitoring." In order words, "motivation is what gets you going, keeps you going, and determines where you're trying to go" [29]. Element of motivation among students is crucial for the desired quality of education. Students are motivated or not are questionable. This depends upon their concentration level, prompt response to the task, increased level of interaction, enthusiasm and eagerness [33].

2. NEED AND SIGNIFICANCE OF THE STUDY

Economics is one such subject, of which the students are often scared of. Some of its concepts and theories are technical to understand. So an attempt could be made to approach it with a versatile strategy like blended learning that focuses on convenient learning in and outside the class. The rationale of this study is to focus on the practical implementation of blended learning strategy in the classroom and target learners with different level of motivation. Motivation plays crucial role in performing various learning task that in the absence of motivation students will not do learning activities. Furthermore, student are indifferent towards economics, not because of lack

of teaching, instead, inappropriateness of the strategy followed during teaching learning process in schools. [34] "blamed poor performance of students to poor teaching methods, and teachers' inability to vary teaching techniques." Admittedly, no particular style of teaching or methodology is appropriate in order to achieve the desired outcomes of teaching. Achievement can be influenced to either direction through utilization of blended learning strategy, in relation to motivation to learn, which the need of the study is and hence the researcher is intending to highlight this very aspect in her study. Therefore, investigator made an attempt to enquire the effect of blended learning strategy on achievement in economics in relation to motivation to learn.

3. OBJECTIVE

1. To compare the achievement of groups taught through blended learning strategy and conventional teaching strategy in economics.
2. To compare the high, average and low motivation to learn group with regards to achievement in economics.
3. To examine the interaction effect of instructional strategies and motivation to learn economics group.

Hypotheses

H_1: There exists no significant difference between the groups taught through blended learning strategy and traditional teaching strategy on achievement in economics.

H_2: There exists no significant difference between the groups having high, average and low motivation to learn on achievement in economics.

H_3: There exists no significant interaction effect of instructional strategies and motivation to learn economics group.

Sample

The present study was conducted on random sample of 120 Economics students of XI class of two English medium private schools with broadband connection facility to teach through blended learning strategy of Amritsar in Punjab affiliated to Central Board of Secondary Education, New Delhi. The two schools were randomly selected from a list of schools of Amritsar. The sample included 60 students from Harkrishan International Public School, Amritsar and 60 students from Springdale Senior School, Amritsar. Further, from each school the two intact sections of 30 students were selected randomly to serve as experimental and control group.

Design

The present study will be experimental in nature. A pre-test and post-test factorial design will be employed. In order to analyze the data, Analysis of Variance (2×3) will be used. The experimental group will be taught through blended learning strategy, whereas, the control group will be taught same topics with conventional teaching strategy by the investigators. The study will cover two independent variables such as instructional strategies and motivation to learn economics. The variable of instructional strategies will be examined at two levels, namely blended learning strategy and conventional teaching strategy. The variable of motivation to learn group will be studied at three levels viz. high, average and low motivation to learn. These variables will work as independent variables. The dependent variable will be achievement in economics, which will calculated as the difference in post-test and pre-test scores for the subject. The schematic layout of the factorial design (2×3) is given below:

The schematic layout of the factorial design (2×3) (120)

Experimental Group (A_1)   Control Group (A_2)

B_1 B_2 B_3 B_1 B_2 B_3
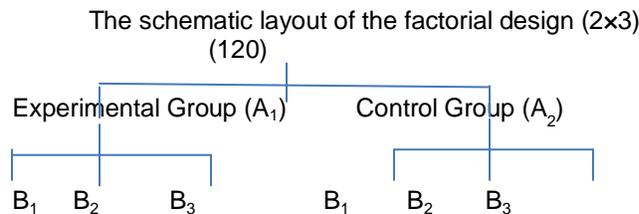
Where:

A_1 Stands for Blended Learning Strategy
A_2 Stands for Conventional Teaching Strategy
B_1 Stands for High Motivation to Learn
B_2 Stands for Average Motivation to Learn
B_3 Stands for Low Motivation to Learn

Tools used

1. General Mental Ability Test by [35] was used to access the intelligence of students for matching the group.
2. Achievement Test in Economics will be developed by the investigators.
3. Motivation to Learn Economics will be developed by the investigators.
4. Instructional Material for Blended Learning Strategy and Conventional Teaching Strategy on five topics such as Demand and its determinants, Law of demand, Types of goods, Price elastic of demand and its degrees and Factors affecting price elasticity of demand of XI class Economics subject were developed by investigators.

Procedure

After the selection of the sample and allocation of students to the two instructional strategies, the experiment was conducted in six phases. Firstly, the investigator made necessary arrangements with the Principal of the school selected for experiment. Secondly, General Mental Ability Test was administered for matching of groups. Thirdly, motivation to learn Economics test was administered in each school in order to identify the motivation levels of the students. Fourthly, an achievement test in Economics as pre-test was administered to the students of experimental and control groups. The answer-sheets were scored to obtain information regarding the previous knowledge of the students. Fifthly, the experimental group was taught through blended learning strategy and control group was taught through conventional teaching strategy by the investigators. The two groups were taught for about ten working days. Sixthly, after the completion of the course, the same achievement test in economics as post-test was administered to the students of both the groups. The answer-sheets were scored with the help of scoring key.

Analysis and Interpretation of the Results

- Analysis of Descriptive Statistics

The data were analyzed to determine the nature of the distribution of scores by employing mean and standard deviation. The Analysis of Variance (2×3) was used to test the hypotheses related to instructional teaching strategy and motivation to learn economics. The mean and standard deviation of different sub groups have been presented in table-1, 2, 3, 4 & 5.

Table-1*: Means and SD of Mean Gain Achievement Scores for the Different Sub Groups*

Motivation to	Teaching	

Learn Economics	Blended Learning Strategy N Mean SD	Traditional Teaching Strategy N Mean	Total N Mean SD
High Motivation to Learn	16 12.56 2.76	16 7.19 1.85	32 9.88 3.57
Average Motivation to Learn	28 9.72 3.03	28 6.25 1.63	56 7.98 2.99
Low Motivation to Learn	16 6.44 1.77	16 4.69 1.40	32 5.56 1.82
Total	60 9.60 3.49	60 6.08 1.88	N=120

Source: Field Study, 2019

To substantiate the data presented in table-1, a bar diagram to depict the mean gain achievement scores in economics for high, average, low and total motivation to learn economics groups of experimental and control groups has been given in fig-1.
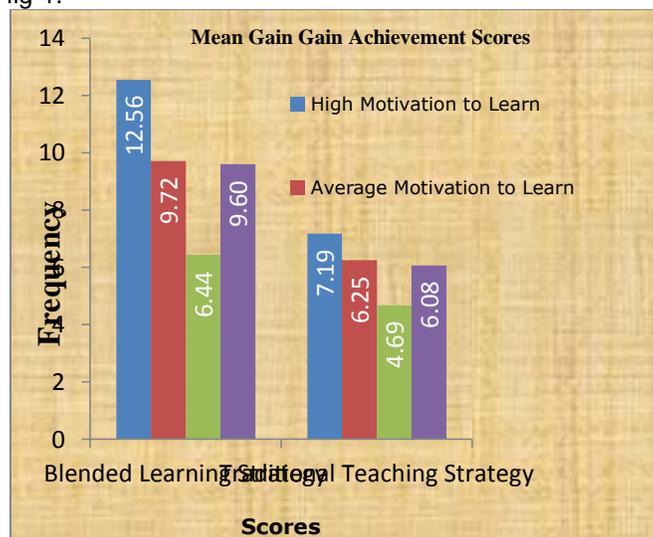
Fig-1: Bar diagram showing comparison between mean gain achievement scores of instructional teaching strategy groups

Table and fig-1 observes that the mean gain scores of blended learning strategy group (M=9.60) is higher than the traditional teaching strategy group (M=6.08). This shows that blended learning strategy group is more effective than that of traditional teaching strategy group. It is also confirmed that the mean gain of the three groups i.e. high, average and low motivation to learn group is 9.88, 7.98 and 5.56 respectively. It is concluded that the mean gain scores with blended learning strategy has shown significant differences for high, average and low motivation to learn economics students. These differences are also found with respect of the different motivation to learn group taught through traditional teaching strategy.

- **Analysis of Variance on Gain Achievement Scores**

The mean of different sub-groups, sum of squares, degree of freedom, mean sum of squares and the F - ratio have been presented in table-2

Table-2: Summary of Analysis of Variance (2×3) Factorial Designs

Source of Variance	Sum of Squares	df	Mean Sum of Squares	F- ratio
Blended Learning Strategy (A)	371.01	1	371.01	71.76**
Motivation to Learn (B)	299.64	2	149.82	28.98**
Interaction (A×B)	52.62	2	26.31	5.09**
Error Term	589.72	114	5.17	

 * *Significant at 0.01 level
(Critical Value 3.93 at 0.05 and 6.86 at 0.01 levels, df 1/114)
(Critical Value 3.08 at 0.05 and 4.80 at 0.01 levels, df 2/114)
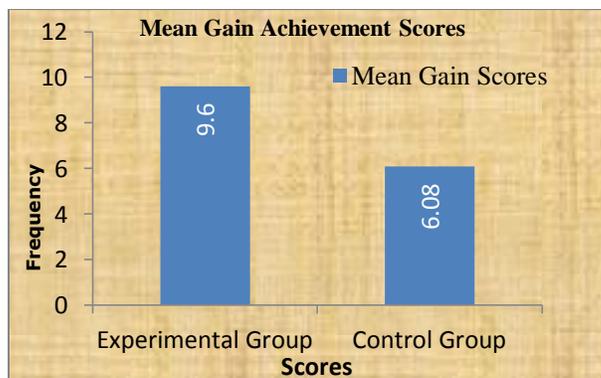Blended Learning Strategy (A)

Table-2 reveals that that the F-ratio for difference in mean gain scores of blended learning strategy and traditional teaching strategy group is 71.76, which in comparison to the table value was found significant at 0.01 levels of significance. It shows that the groups were not different beyond the contribution of chance. Hence, the hypothesis H_1: There exists no significant difference in gain achievement scores of student taught through blended learning strategy traditional teaching strategy on achievement in economics, is rejected. The result indicates that the achievement of group taught through blended learning strategy is much higher than that of traditional teaching strategy in economics.   To probe deeper F-ratio was followed by t-test. The value of t-ratio for experimental and control group have been placed in table-3.

Table–3: t-ratio of gain mean scores between experimental and control groups

Variables	Experimental Group N Mean SD	Control Group N Mean SD	SE$_D$	t-value
Gain Scores	60 9.60 3.49	60 6.08 1.88	0.51	6.90**

** Significant at 0.01 level

    The gain means achievement scores of experimental and control groups have been depicted through bar diagram in fig-2.

Fig-2: Bar diagram showing comparison between mean gain achievement scores of experimental and control groups

Table-3 and fig-2 reveals that mean gain score of experimental group is 9.60, which is higher than the corresponding mean gain score of 6.08 of the control group. The t-value testing the significance of mean differences of blended learning strategy and traditional teaching is 6.90, which in comparison to the table value (t0.01=2.62, df 118) was found significant at 0.01 level of significance. The result indicates that the performance of blended learning strategy group was more effective than that of the traditional teaching strategy group.

Motivational to Learn Economics (B)
Table-2 shows that the F-ratio for difference in mean gain scores of three groups of motivational to learn are 28.98, which in comparison to the table value was found significant at 0.01 levels of significance. It suggests that the three groups were different with respect of achievement scores. Hence, the hypothesis H_2: There exists no significant difference between the groups having high, average and low motivational to learn on achievement in economics, is rejected. The result indicates that the mean gain achievement scores of high motivational to learn groups were higher than that of average and low motivational to learn economics group. To probe deeper F-ratio was followed by t-test. The value of t-ratio for experimental and control group have been placed in table-4.

Table-4: *t-ratio for different combinations of motivation to learn groups*

Motivational to Learn Economics	High Motivational to Learn N Mean SD 32 9.88 3.57	Average Motivational to Learn N Mean SD 56 7.98 2.99	Low Motivational to Learn N Mean SD 32 5.56 1.82
High Motivational to Learn N Mean SD 32 9.88 3.57	--	2.53*	6.09**
Average Motivational to Learn N Mean SD 56 7.98 2.99	--	--	4.75**
Low Motivational to Learn N Mean SD 32 5.56 1.82	---	--	--

*Significant at 0.05 level **Significant at 0.01 level

A bar diagram has been drawn to substantiate the results and has been given in fig.-3
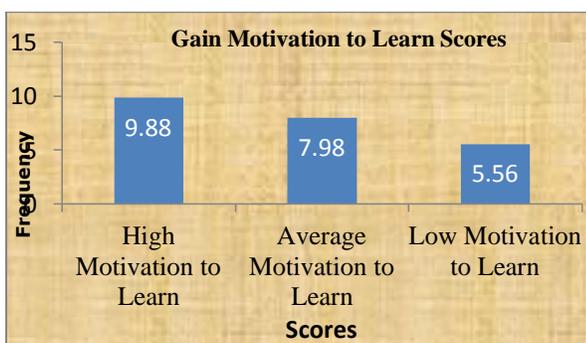
Fig 3: *Bar diagram showing comparison among mean gain achievement scores of different motivation to learn groups*

Table-4 and fig-3 shows that high motivation to learn group with mean of 9.88 exhibits higher mean gain score than that of average motivation to learn group with mean of 7.98. The t-ratio for the difference in gain mean scores of high and average motivation to learn groups is 2.53, which in comparison to the table value (t0.05=1.99 and t0.01=2.63 df 86) was found significant at 0.05 level of significance. Hence, the hypothesis of significant differences is rejected in case of high and average motivation to learn irrespective of grouping across other variable. The result indicates that high and

average motivation to learn group was significantly different with respect of gain scores. Table-4 and fig-3 observes that high motivation to learn group with mean of 9.-88 shows higher mean gain score than low motivation to learn group with mean of 5.56. The t-ratio for the difference in gain mean scores of high and low motivation to learn groups is 6.09, which in comparison to the table value (t0.01=2.66 df 62) was found significant at 0.01 level of significance. Hence, the hypothesis of significant difference is rejected in case of high and low motivation to learn irrespective of grouping across other variables. The result indicates that the mean gain achievement scores were found significant for high and low motivation to learn group with regard to achievement scores in economics. Table-4 and fig-3 reveals that average motivation to learn group with mean of 7.98 exhibits higher mean gain score than low motivation to learn group with mean of 5.56. The t-ratio for the difference in gain mean scores of average and low motivation to learn groups is 4.75, which in comparison to the table value (t0.01=2.63 df 86) was found significant at 0.01 level of significance. Hence, the hypothesis of significant differences is rejected in case of average and low motivation to learn irrespective of grouping across other variable. This infers that the mean gain achievement scores were found significant for average and low motivation to learn economics group. Interaction between Instructional Strategies and Motivation to Learn Economics (A×B) Table-2 reveals that the F- ratio for the interaction between instructional strategies and motivation to learn economics groups is 5.09, which in comparison to the table value was found significant at 0.01 levels of significance. It indicates that the two variables interact with each other. Thus, hypothesis H_3: There exists no significant interaction effect of problem solving strategies and critical thinking on achievement in mathematics, is rejected. The result indicates that there is a significant difference in gain scores on achievement in mathematics due to interaction effect of teaching strategies and critical thinking groups. Problem solving strategies and traditional teaching model did not yield equal levels of gain achievement for high, average and low critical thinking for the students. To ascertain significance of difference of means of different combination groups, t-ratio were computed which have been placed in table-5.

Table-5: *t-ratio for difference in mean gain achievement scores of instructional strategies and different critical thinking levels*

	Variables	Experimental Group			Control Group		
		B_1 Mean 12.56 SD 2.76	B_2 Mean 9.72 SD 3.03	B_3 Mean 6.44 SD 1.77	B_1 Mean 7.19 SD 1.85	B_2 Mean 6.25 SD 1.63	B_3 Mean 4.69 SD 1.40
Experimental Group	B_1 Mean 12.56 SD 2.76	---	3.16**	7.46**	6.47**	8.30**	10.22**
	B_2 Mean 9.72 SD 3.03	—	—	4.56**	3.42**	5.34**	7.51**
	B_3 Mean 6.44 SD 1.77	---	--	_	1.17	0.35	3.07**
Control Group	B_1 M 7.19 SD 1.85	---	---	—	---	1.68	4.31**
	B_2 Mean 6.25 SD 1.63	—	—	—	—	—	3.32**

	B₃ Mean 4.69 SD 1.40	---	---	—	----	----	---

*Significant at 0.05 level
**Significant at 0.01 level
Note: B₁ for High motivation to learn, B₂ for Average motivation to learn, B₃ for Low motivation to learn
A bar diagram has been drawn to substantiate the results and has been given in fig.-4.
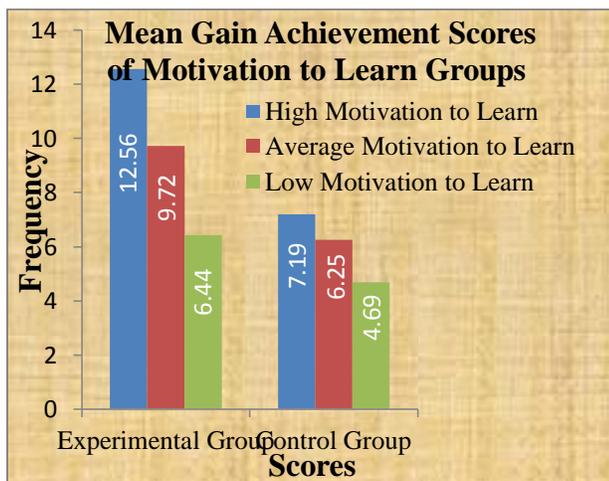
Fig-4: *Bar diagram showing mean gain achievement scores for different motivation to learn groups of experimental and control groups*

Table-5 and fig-4 observes that high motivation to learn of experimental group with mean of 12.56 shows higher mean gain score than average motivation to learn of experimental group with mean of 9.72. The t-ratio for the difference in gain mean scores of high and average motivation to learn of experimental group is 3.16, which in comparison to the table value (t0.01=2.71, df 42) was found significant at 0.01 level of significance. Hence, the hypothesis of significant differences is rejected in case of high and average motivation to learn of experimental group irrespective of grouping across other variable. Table-5 and fig-4 reveals that high motivation to learn of experimental group with mean of 12.56 shows higher mean gain score than that of low motivation to learn of experimental group with mean of 6.44. The t-ratio for the difference in gain mean scores of high and low motivation to learn of experimental group is 7.46, which in comparison to the table value (t0.01=2.75, df 30) was found significant at 0.01 level of significance. Hence, the hypothesis of significant differences is rejected in case of high and low motivation to learn of experimental group irrespective of grouping across other variable. Table-5 and fig-4 observes that high motivation to learn of experimental group with mean of 12.56 shows higher mean gain score than high motivation to learn of control group with mean of 7.19. The t-ratio for the difference in gain mean scores of high motivation to learn of experimental group and high motivation to learn of control group is 6.47, which in comparison to the table value (t0.01=2.75, df 30) was found significant at 0.01 level of significance. Hence, the hypothesis of significant differences is rejected in case of high motivation to learn of experimental group and high motivation to learn of control group irrespective of grouping across other variable. Table-5 and fig-4 indicates that high motivation to learn of experimental group with mean of 12.56 shows higher mean

gain score than average motivation to learn of control group with mean of 6.25. The t-ratio for the difference in gain mean scores of high motivation to learn of experimental group and average motivation to learn of control group is 8.30, which in comparison to the table value (t0.01=2.71, df 42) was found significant at 0.01 level of significance. Hence, the hypothesis of significant differences is rejected in case of high motivation to learn of experimental group and average motivation to learn of control group irrespective of grouping across other variable. Table-5 and fig-4 observes that high motivation to learn of experimental group with mean of 12.56 shows higher mean gain score than low motivation to learn of control group with mean of 4.69. The t-ratio for the difference in gain mean scores of high motivation to learn of experimental group and low motivation to learn of control group is 10.22, which in comparison to the table value (t0.01=2.75, df 30) was found significant at 0.01 level of significance. Hence, the hypothesis of significant differences is rejected in case of high motivation to learn of experimental group and low motivation to learn of control group irrespective of grouping across other variable.
Table-5 and fig-4 observes that average motivation to learn of experimental group with mean of 9.72 shows higher mean gain score than low motivation to learn of experimental group with mean of 6.44. The t-ratio for the difference in gain mean scores of average and low motivation to learn of experimental group is 4.56, which in comparison to the table value (t0.01=2.71, df 42) was found significant at 0.01 level of significance. Hence, the hypothesis of significant differences is rejected in case of average and low motivation to learn of experimental group irrespective of grouping across other variable. Table-5 and fig-4 reveals that average motivation to learn of experimental group with mean of 9.72 shows higher mean gain score than high motivation to learn of control group with mean of 7.19. The t-ratio for the difference in gain mean scores of average motivation to learn of experimental group and high motivation to learn of control group is 3.42, which in comparison to the table value (t0.01=2.71, df 42) was found significant at 0.01 level of significance. Hence, the hypothesis of significant differences is rejected in case of average motivation to learn of experimental group and high motivation to learn of control group irrespective of grouping across other variable. Table-5 and fig-4 indicates that average motivation to learn of experimental group with mean of 9.72 shows higher mean gain score than average motivation to learn of control group with mean of 6.25. The t-ratio for the difference in gain mean scores of average motivation to learn of experimental group and average motivation to learn of control group is 5.34, which in comparison to the table value (t0.01=2.68, df 54) was found significant at 0.01 level of significance. Hence, the hypothesis of significant differences is rejected in case of average motivation to learn of experimental group and average motivation to learn of control group irrespective of grouping across other variable. Table-5 and fig-4 shows that average motivation to learn of experimental group with mean of 9.72 shows higher mean gain score than low motivation to learn of control group with mean of 4.69. The t-ratio for the difference in gain mean scores of average motivation to learn of experimental group and low motivation to learn of control group is 7.51, which in comparison to the table value (t0.01=2.71, df 42) was found significant at 0.01 level of significance. Hence, the hypothesis of significant differences is rejected in case of average motivation to learn of experimental group and low motivation to learn of control group irrespective

of grouping across other variable. Table-5 and fig-4 observes that low motivation to learn of experimental group with mean of 6.44 shows higher mean gain score than low motivation to learn of control group with mean of 4.69. The t-ratio for the difference in gain mean scores of low motivation to learn of experimental group and low motivation to learn of control group is 3.07, which in comparison to the table value (t0.01=2.75, df 30) was found significant at 0.01 level of significance. Hence, the hypothesis of significant differences is rejected in case of low motivation to learn of experimental group and low motivation to learn of control group irrespective of grouping across other variable. Table-5 and fig-4 indicates that high motivation to learn of control group with mean of 7.19 shows higher mean gain score than low motivation to learn of control group with mean of 4.69. The t-ratio for the difference in gain mean scores of high and low motivation to learn of control group is 4.31, which in comparison to the table value (t0.01=2.75, df 30) was found significant at 0.01 level of significance. Hence, the hypothesis of significant differences is rejected in case of high and low motivation to learn of control group irrespective of grouping across other variable. Table-5 and fig-4 reveals that average motivation to learn of control group with mean of 6.25 shows higher mean gain score than low motivation to learn of control group with mean of 4.69. The t-ratio for the difference in gain mean scores of average and low motivation to learn of control group is 3.32, which in comparison to the table value (t0.01=2.71, df 42) was found significant at 0.01 level of significance. Hence, the hypothesis of significant differences is rejected in case of average and low motivation to learn of control group irrespective of grouping across other variable. Table 5 and fig-4 shows that rest of the combination group i.e. low motivation to learn of experimental group with high and average motivation to learn of control group; high and average motivation to learn of control group did not yield significance difference on achievement in economics even at 0.05 level of significance.

4. DISCUSSION

The finding of present study reveals that blended learning strategy was more effective than that of conventional teaching strategy for achievement in economics. Hence, the hypothesis H_1: There exists no significant difference between the groups taught through blended learning strategy and traditional teaching strategy on achievement in economics, is rejected. The results are supported by the findings of [36] found that grades were significantly higher for the web-based classes than for the face-to-face classes, which were significantly higher than for the correspondence classes. [37] who reported that blended learning have positive impact on student outcomes. [38]showed that there was a statistically significant difference favoring the experimental group taught through blended web-based learning. [39] found that students enjoyed taking part in the blended learning environment and students' achievement levels improved positively. [40]through his case studies provide evidence for the use of blended learning approaches to improve students' academic performance in higher education courses, as well as enhancing student satisfaction. [41]revealed that the blended learning model contributed more to the students' biology achievement than traditional teaching methods. [42] found that the experiment group taught through blended learning is more successful in terms of academic achievement than the control group. [43] Revealed that there was a significant effect of the proposed

blended learning strategy on subjects` achievement in Scientific English. [44] Indicated the presence of statistically significant differences in the post-achievement due to the teaching through blended learning method. [45] found that blended learning environment had generated a significant difference in students' academic achievement on behalf of experimental group. [46] found that group taught through blended learning strategy was more effective than conventional teaching strategy group. [47] Concluded that blended learning strategy is found significantly more effective in enhancing students' learning achievement as compared to the conventional learning strategy. The results are contradicted by the findings of [48] revealed that there is no significance difference between the groups taught through blended learning and face to face learning in terms of academic achievement. [49] who conducted a quasi-experimental study to examine the learning achievement for groups of learners in two sections of a course, with one being blended and the other a face-to-face. The results reveal that instructional mode does not have a significant effect on learning achievement. The finding of the present study indicates that the performance of high motivation to learn economics group was higher than that of average and low motivation groups. Hence, the hypothesis H_2: There exists no significant difference between the groups having high, average and low motivation to learn on achievement in economics, is rejected. The findings are supported by [50] revealed that there is significant relationship between academic performance and motivation. Furthermore, [51] showed that maintaining high motivation influences psychological and social functioning, in addition to facilitating academic performance. [52] have identified motivational orientation as a reliable and accurate predictor of school success and failure [53] showed that motivation is positively related with students' cognitive achievement in senior secondary school economics. It implies that students with high motivation also have high achievement in economics and vice-versa. [54] their findings showed significant difference in the mean of pupils' grades in the achievement test and pupils' performance on motivation scale in favor of the experimental group. [55] Showed that there were significant positive associations between students' motivational orientations and science achievement. [56] Indicated that motivation serves as a good predictor of students' performance. This shows that for any increase in students" motivation, there will be a positive improvement in their academic performance. [57] Revealed that response to learning model by low motivated group of students to achieve the same or higher learning achievement is less than high motivated group of students. [58] Conducted a multilevel analysis which confirmed the importance of motivation for learning in predicting their achievement. The results are contradicted by the findings of [59] found that Asian students of both sexes rated parents and friends as more important in contributing to academic success. [60] Found that various motivational variable has no significant relationship with their achievement or persistence. [61] Revealed that students' attitude and academic achievement were correlated negatively. [62] Analyzed the correlation between motivational orientation and academic success and found no relationship. Hence, concluded that students' motivational orientation did not moderate differences in academic success. The finding of the present study indicates that the interaction effect among instructional strategies and motivation to learn economics groups yield significant difference in mean gain scores on

achievement in Economics. Hence, the hypothesis H_3: There exists no significant interaction effect of instructional strategies and motivation to learn economics group, is rejected.   The results are supported by the findings of [63] who concluded that students' motivational factors have a direct impact on their engagement learning strategies in constructivist blended learning environment. [46] found that significant interaction effect between instructional strategy and computer self efficacy group. The results are contradicted by the findings of [57] revealed that interaction of blended learning model and motivation does not affect student achievement.

Findings

The present study revealed the following conclusions:

1. The performance of students taught through blended learning strategy group was found more effective than that of taught through traditional teaching strategy group in economics.
2. The mean gain scores of high motivation to learn economics group were higher than that of average and low motivation to learn economics groups in economics.
(i) The mean gain achievement scores in economics of high motivation to learn group were found significantly higher than that of average motivation to learn economics group.
(ii) The mean gain achievement scores in economics of high motivation to learn group were found significantly higher than that of low motivation to learn economics group.
(iii) The mean gain achievement scores in economics of average motivation to learn group were found significantly higher than that of low motivation to learn economics group.
3. There was significant interaction effect of instructional strategies and motivation to learn on achievement in economics. Further analysis revealed that:
(i) The high motivation to learn of blended learning strategy group exhibited higher mean gain scores than that of average and low motivation to learn of experimental group.
(ii) The high motivation to learn of blended learning strategy group exhibited higher mean gain scores than that of high, average and low motivation to learn of control group.
(iii) The average motivation to learn of blended learning strategy group exhibited higher mean gain scores than that of low motivation of experimental group.
(iv) The average motivation to learn of blended learning strategy of experimental group exhibited higher mean gain scores than that of high, average and low motivation to learn of control group.
(v) The low motivation to learn of blended learning strategy of experimental group -exhibited higher mean gain scores than that of average and low motivation to learn of control group but lower mean gain scores of high motivation to learn economics of control group.
(vi) The high motivation to learn of blended learning strategy of control group exhibited higher mean gain scores than that of average and low motivation to learn of control group.
(vii) The average motivation to learn of blended learning strategy of control group exhibited higher mean gain scores than that of low motivation to learn of control group.
Conclusion
        The present study reveals that blended learning strategy gives better results than traditional teaching strategy for secondary school students. Furthermore, the mean gain scores of high motivation to learn economics group were higher than that of average and low motivation to learn economics groups in economics. There is significant effect of interaction between instructional strategies and motivation to learn on mean gain scores of achievement in economics. Hence, for better performance of students the study suggests the use of blended learning strategy.

Educational Implications

The present study has widespread educational implications. Higher achievement is considered very crucial in the process of learning in our existing educational system. The meaningful learning experiences to students in the academic settings can be better addressed through innovative instructional delivery methods like blended learning strategy than teacher-centered conventional teaching strategy. The rationale behind blended learning is to redesign the way the instruction is imparted to students in order to derive the advantages of both face-to-face classroom teaching and online mode of instruction. This greatly benefits students having different learning styles, providing greater flexibility in terms of accessibility besides reducing the workload of teachers. Thus, results in greater retention, increased student engagement and satisfaction; ultimately higher academic achievement. Further, the study revealed that students with high motivation to learn economics showed higher achievement than students having average or low motivation to learn economics. Since some of the activities which students do in the classroom such as listening to lectures, taking notes, participating in quizzes etc. can be done online in advance through using technology device. The students can be asked by teachers, for instance, to utilize one of the applications in the smart phone like Whatsaap, Khan Academy, EconBiz, and so on. Through these apps, the educator can keep a check on the quality of Economics study of learner. Moreover, it can enhance motivation level of the students to study Economics as model of blended learning offers various interesting learning activities using various technology platforms. The increased interaction between students and teachers, as well as between students themselves may establish various learning practices and virtual communities where ideas, experiences, knowledge and learning outputs are interchanged and valued. Institutions of higher education can use blended learning in order to improve pedagogy, increase access to and the flexibility of learning environments, and to improve its cost-effectiveness but the most common reason is to improve pedagogical practices.

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