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ARTICLE

Higher Secondary Commerce Students' Engagement and Attitude towards Blended Learning Environment

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ABSTRACT

At present, classroom instruction should be a self-regulated process and the learner who is self-motivated to explore problems and situations. For learning, the students are learning through the web as a source of knowledge, the learning environment should be shifted to a learner-centered rather than teacher-centered environment. Commerce education is to be directed towards mastery in its conventions and principles, towards thinking and solving problems in scientific ways, towards developing a positive outlook to the discipline at the higher secondary level. Attitude towards learning is associated with the academic performance of commerce-related tasks and improving achievement. It should be one of the basic features in designing effective commerce classroom instruction. In the present study, students' attitudes can be enhanced by using a blended learning instructional strategy targeting the variables of learner attitude towards learning of instructional transaction, learning task, classroom interaction, and assessment. The study employs pretest-posttest non-equivalence control group design under the quasi-experimental method. The sample consists of 80 students of standard XII, 40 students each in the experimental group and control group. Statistical techniques of descriptive statistics, t-test, and Cohen's d were used for comparing the pretest and posttest scores of attitude towards learning and measuring the effect size between experimental and control groups. The findings of the study showed that there is a significant difference in the mean posttest scores of attitude towards learning between the experimental group and control group and the blended learning instructional strategy is more beneficial in developing the attitude of higher secondary school students when compared to constructivist teaching strategy.

1. Introduction

Teaching technology is one of the sub-types of the system of educational technology. It concerns the systematization of the process of teaching and provides necessary theory and practice for the teachers to bring improvement in the task of teaching. It includes the means and material concerning individualized instructions and self-learning including teaching machines and computer-assisted learning, independent of the teachers and their acts. The essence of the application of technology lies in getting more and better output with the least input in terms of time and

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labor. Teaching technology as suggested by [6], equipped with technological skills like communication skill, the skill of interaction with students, the skill of making the students learn and think independently, and the skill of evaluating and reinforcing pupil learning behavior, etc. besides having a good knowledge or mastery over the subject matter. According to [6], e-learning situations are of three types. They are support learning, blended learning, and complete e-learning. In blended learning mode, attempts are made for making use of a combination of traditional and ICT enhanced learning practices. Thus, one can harvest the benefits of both the practices of traditional and e-learning.

1.1 Rationale of the Study

The foundation of commerce education is laid in the higher secondary level associated with the underlying principles of commerce and accountancy. Every topic in commerce cannot be taught alike and each learner has a unique way of collecting and organizing information, depending upon their cognitive structure. A different topic is needed a different type of strategies. The use of blended learning instructional strategy is more effective in classrooms than the use of traditional single strategy. Using a single strategy in one class will usually be monotonous and a continuous usage of the same strategy in transacting the content makes the learners lazy and exhausted. Combining or mixing the conventional methods with e-learning practices is an important and purposive approach as it helps to cross and examine the commerce outcomes at the higher secondary level. This study considered the topic of 'marketing' as it was perceived as the most important and interesting one by higher secondary school students. Marketing includes topics like marketing management, marketing mix, the concept of product, pricing, place, and promotion, which engender difficulty for a learner with a low IQ. These topics might be difficult for a higher secondary commerce learner with low field independence and low working memory capacity. So the higher secondary commerce curriculum needs the inclusion of a blended learning instructional strategy based on the content and cognitive structure of the learner. So the present study is to analyze the effect of blended learning instructional strategy in developing the attitude towards learning among higher secondary school students.

1.2 Objectives of the Study

- To compare the mean pretest scores of attitude (dimension wise) towards blended learning between experimental group and control group.
- To compare the mean pretest and posttest scores of attitude (dimension wise) towards blended learning of students in the experimental group.
- To compare the mean pretest and posttest scores of attitude (dimension wise) towards blended learning of students in the control group.
- To compare the mean posttest scores of attitude (dimension wise) towards blended learning between experimental and control group.
- To compare the effect of blended learning instructional strategy in developing the attitude towards learning among higher secondary school students.

1.3 Variables of the Study

The variables selected for the study were the following:

Independent Variable: Teaching strategy was selected as the independent variable. Two levels of the teaching strategy were

- Blended learning instructional strategy
- Constructivist teaching strategy

Dependent Variable: The dependent variable selected for the study was attitude towards learning.

Control Variable: The control variable selected for equating the two groups before the experimentation of the study was pretest scores.

1.4 Method in Brief

To understand the attitude towards learning among higher secondary commerce learners, the investigator used an experimental method for the study. Experimentation is intended to test the effect of blended learning instructional strategy on higher secondary learners' attitude towards learning. The study employed a pretest-posttest non-equivalence control group design under the quasi-experimental method. Analysis was done based on the data obtained in experimentation.

1.5 Sample for the Study

The investigator selected the sample from Govt. Higher Secondary School, Cheruthuruthy, Thrissur district. Students of standard XII were selected for experimentation. The selection of two groups for the experimentation was based on the technique of Randomization which means selecting a group of individuals for observation who are representatives of the population about which the researcher wishes to generalize or equating experimental and control groups in an experiment. Assigning individuals by random assignment, the investigator randomly selected a total of 92 students from two divisions of standard XII with 46 students each. The two groups were equated based on

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their pretest scores by eliminating the extreme values and finally selected 40 students from each division.

1.6 Tools Used for the Study

The following tools used for gathering relevant data for the study:

- Lesson transcript based on blended learning instructional strategy (for experimentation)
- Lesson transcript based on constructivist teaching strategy (for experimentation)
- Attitude scale (for measuring the effectiveness of intervention strategy after experimentation)

1.6.1 Lesson transcript based on blended learning instructional strategy

The investigator developed lesson transcripts of a unit of XII commerce syllabus 'Concept of marketing' for teaching through 'Blended learning instructional strategy'. The construction of instructional strategy involves three phases. They are:

- Specification Phase
- Drafting Phase and
- Try out Phase

The construction and its effectiveness of an instructional strategy depend on the first phase that is a specification of the topic and others. From the analysis of the various theories and suggestions from experts, the following steps were considered as important for specification. They are the specifications of the (i) unit/topic, (ii) target population, (iii) entering behavior, (iv) terminal behavior, and (v) construction of criterion test. After the above specifications and their preparations are over, the second major phase of drafting the frames will be taken up. The draft was made according to the nature of students' needs and interests. After the completion of the preliminary draft of all the frames, it requires editing and reviewing. Editing has been done concerning the accuracy and relevance of the material, style, vocabulary, and content interest. In editing the frames, the continuity of the package, the sequence, the principles of construction of the package, etc. was checked. The content in each frame was also verified by the subject experts in this phase.

1.6.2 Lesson transcript based on constructivist teaching strategy

The investigator developed lesson transcripts of a unit of XII commerce syllabus, 'Concept of Marketing' for teaching through 'Constructivist teaching strategy'. Constructivist instruction, which has been followed in Kerala schools, was used to teach the content in the control group. For the use of lesson transcripts of constructivist strategy, the investigator consulted with the school teachers who are working in the field of commerce teaching.

1.6.3 Attitude Scale

In the present study, the investigator developed an attitude scale for assessing the effect of blended learning instructional strategy on students' attitude towards learning. The criterion variables (dimensions) selected to collect information regarding students' attitude towards learning viz; attitude towards the instructional transaction, attitude towards learning task, attitude towards classroom interaction, and attitude towards assessment.

The data collected from the attitude scale to be evaluated based on the criterion variables of the attitude scale such as instructional transaction, learning task, classroom interaction, and assessment. To confirm the internal consistency of each item of the scale, the scores of each statement are summed up and the correlation of each statement with the total score was examined. Those statements, which do not show a substantial correlation with the total score were eliminated. The internal consistency of those items lies in between 0.35 to 0.85 were taken for the final study, and the criterion validity of the scale was found to be 0.85. The reliability of the attitude scale was established through the split-half method. To execute the split-half method, the investigators systematically split the questions into two sets and estimate the reliability co-efficient of the items from two sets. The Guttman split-half coefficient of correlation was found to be 0.88, showed that the scale is highly reliable.

1.7 Statistical Techniques Employed for the Study

Statistical techniques used for data analysis were the following:

- Descriptive statistics
- Test of significance of the difference between means
- Effect size (Cohen's *d*)

2. Analysis and Interpretation of Data

2.1 Compare the Mean Pretest Scores of Attitude (Dimension Wise) towards Learning between Experimental Group and Control Group

Comparison of mean pretest scores was carried out to test whether a significant difference exists between the experimental group and control group for their attitude towards learning before the experimental intervention. Test of significance of the difference between means (t-test) was used for comparison. The data were analyzed

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and the results are given in Table 1.

Table 1. Test of Significance of Difference between mean Pretest Scores of Attitude (Dimension wise) towards Learning between Experimental and Control Groups

Variable/ Dimensions		Experimental Group		Control Group		Critical ratio (t-value)
		Mean (M_1)	SD (SD_1)	Mean (M_2)	SD (SD_2)	
Attitude	Instructional transaction	25.93	5.98	25.70	5.36	0.18*
	Learning task	21.25	7.00	21.60	6.88	0.23*
	Classroom interaction	16.35	3.44	17.13	2.51	1.15*
	Assessment	21.68	5.95	21.73	5.80	0.04*

N=40 **P*>.05

Table 1 shows that the t-value obtained for the pretest scores of attitude towards learning; instructional transaction (t=0.18), learning task (t=0.23), classroom interaction (t=1.15), and assessment (t=0.04) between the experimental group and control group, which is not significant at 0.05 level. It shows that there is no significant difference in the mean pretest scores of attitude towards learning between the experimental group and control group before their experimental intervention.

2.2 Compare the Mean Pretest and Posttest Scores of Attitude (Dimension Wise) towards Learning of Students in the Experimental Group

Comparison of mean pretest and posttest scores of attitude towards learning of students in the experimental group was carried out to test whether a significant difference exists in these two tests. Test of significance of the difference between means (t-test) was carried out for comparison. Data were analyzed and the results are shown in Table 2.

Table 2. Test of Significance of Difference between mean Pretest and Posttest Scores of Attitude (Dimension wise) towards Learning of Experimental Group

Variable/ Dimensions		Pretest		Posttest		Critical ratio (t-value)
		Mean (M_1)	SD (SD_1)	Mean (M_2)	SD (SD_2)	
Attitude	Instructional transaction	25.93	5.98	31.77	5.19	19.05**
	Learning task	21.25	7.00	25.40	6.08	8.85**
	Classroom interaction	16.35	3.44	20.25	3.15	17.05**
	Assessment	21.68	5.95	25.35	5.18	11.74**

N=40 ***P*< .05

Table 2 shows that the t-value obtained by comparing pretest and posttest mean scores of experimental group attitude towards learning; instructional transaction (t=19.05), learning task (t=8.85), classroom interaction (t=17.05), and assessment (t=11.74), which is significant at 0.05 level. It shows that there is a significant difference between mean pretest and posttest scores of attitude towards learning of students in the experimental group.

2.3 Compare the Mean Pretest and Posttest Scores of Attitude (Dimension Wise) towards Learning of Students in the Control Group

Comparison of mean pretest and posttest scores of attitude towards learning of students in the control group was carried out to test whether a significant difference exists in these two tests. Test of significance of the difference between means (t-test) was carried out for comparison. Data were analyzed and the results are shown in Table 3.

Table 3. Test of Significance of Difference between Pretest and Posttest Scores of Attitude (Dimension wise) towards Leaning of Control Group

Variable/ Dimensions		Pretest		Posttest		Critical ratio (t-value)
		Mean (M_1)	SD (SD_1)	Mean (M_2)	SD (SD_2)	
Attitude	Instructional transaction	25.70	5.36	28.18	5.43	12.42**
	Learning task	21.60	6.88	23.23	6.69	5.64**
	Classroom interaction	17.13	2.51	20.68	2.28	11.77**
	Assessment	21.73	5.80	25.85	4.75	15.23**

N=40 ***P*< .05

Table 3 shows that the t-value obtained by comparing pretest and posttest mean scores of control group attitude towards learning; instructional transaction (t=12.42), learning task (t=5.64), classroom interaction (t=11.77), and assessment (t=15.23), which is significant at 0.05 level. It shows that there is a significant difference between mean pretest and posttest scores of attitude towards learning of students in the control group.

2.4 Compare the Mean Posttest Scores of Attitude (Dimension Wise) towards Learning between Experimental Group and Control Group

Comparison of mean posttest scores of attitude towards learning was carried out to test whether a significant differences exists between the experimental group and control group. Test of significance of the difference between means (t-test) was used for comparison. The data were analyzed and the results are given in Table 4.

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Table 4. Test of Significance of Difference between mean Posttest Scores of Attitude (Dimension wise) towards Learning between Experimental and Control Groups

Variable/ Dimensions		Experimental Group		Control Group		Critical ratio (t-value)
		Mean (M_1)	SD (SD_1)	Mean (M_2)	SD (SD_2)	
Attitude	Instructional transaction	31.77	5.19	28.33	5.41	2.88**
	Learning task	25.40	6.08	23.31	6.76	1.45*
	Classroom interaction	20.25	3.15	20.74	2.27	0.80*
	Assessment	25.35	5.18	25.95	4.77	0.53*

N=40 **P*>.05 ***P*< .05

Table 4 shows that t-value obtained for attitude towards learning; the value of the instructional transaction (t=2.88), which is significant at 0.05 level. It shows that there is a significant difference in the mean posttest scores of attitude towards learning of instructional transaction between experimental group and control group. The t-value was obtained for other dimensions of attitude towards learning; learning task (t=1.45), classroom interaction (t=0.80), and assessment (t=0.53), which is not significant at 0.05 level. It shows that there is no significant difference in the mean posttest scores of attitude towards learning between the experimental group and control group on their attitude scores of the learning task, classroom interaction, and assessment.

2.5 Compare the Effect Size of Attitude (Dimension Wise) towards Learning between Experimental Group and Control Group

Comparison of attitude towards learning was carried out to test the effect size between the experimental group and control group. Test of Cohen's *d* was used for data analysis. Results of the analysis are given in Table 5.

Table 5. Effect size of Attitude (Dimension wise) towards Learning between Experimental and Control Groups

Variable/ Dimensions		Experimental Group		Control Group		Cohen's *d*	Cohen's Category
		Mean (M_1)	SD (SD_1)	Mean (M_2)	SD (SD_2)		
Attitude	Instructional transaction	31.77	5.19	28.18	5.43	.67	Medium
	Learning task	25.40	6.08	23.23	6.69	.34	Small
	Classroom interaction	20.25	3.15	20.68	2.8	-.30	Very small
	Assessment	25.35	5.18	25.95	4.77	-.12	Very small

Table 5 shows that the Cohen's *d* value obtained for the instructional transaction and learning task (Cohen's *d*=.67 & .34) has a significant effect on students' attitude towards learning between experimental group and control group. But the Cohen's *d* value of classroom interaction and assessment (Cohen's *d*=-.30 & -.12) indicate that students' have a nominal effect (very small in Cohen's category) on their attitude towards learning after the experimental intervention of blended learning instructional strategy.

3. Major Findings of the Study

- The mean pretest score of attitude (dimension wise) towards learning between the experimental group and control group does not differ significantly.
- There is a significant difference in the mean pretest and posttest scores of attitude (dimension wise) towards learning of students in the experimental group.
- There is a significant difference in the mean pretest and posttest scores of attitude (dimension wise) towards learning of students in the control group.
- There is a significant difference in the mean posttest scores of attitude learning, i.e., the instructional transaction between the experimental group and control group.
- The mean posttest scores of attitude towards learning; dimensions of learning task, classroom interaction, and assessment between experimental group and control group do not differ significantly.
- Blended learning instructional strategy has a significant effect on students' attitude; dimensions of instructional transaction and learning task towards learning when compared to constructivist teaching strategy.
- Higher secondary commerce students' have a nominal effect on their attitude; dimensions of classroom interaction and assessment towards learning when compared to constructivist teaching strategy.

4. Discussion

The results of the significance of the difference between the mean posttest scores of the experimental and control groups of attitude towards learning in commerce show that there is a significant difference between the groups. So, the blended learning strategy and constructivist teaching strategy which were used for the content transaction in the experimental group and control group was also found success in making a significant difference between mean posttest scores of attitude towards learning in commerce. But the mean scores of attitude towards learning in commerce (dimension wise) for the experimental group (Instructional transaction M_1=31.77, and learning task M_1=25.40) were found high when compared to that of the control group (Instructional transaction M_2=28.33, and Learning task M_2=23.31). It showed that the experi-

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mental group which was taught using a blended learning instructional strategy is in an advantageous position when compared to the control group which was taught using a constructivist teaching strategy.

Previous studies also revealed a significant effect on blended learning environment – Students' perception in a blended learning environment based on learning styles [1], Student perception of social preference and satisfaction in a blended learning environment [3], Learners' perceptional typology and relationship in blended e-education environment [4], Attitude, satisfaction and academic performance in blended learning [5], Student perception in blended learning strategic initiative [7] and Students opinion on Facebook supported blended learning environment [2]. It showed that the strategy of instruction developed for experimental group classroom instruction has a significant effect on students' attitude towards learning in commerce when compared to control group constructivist teaching strategy.

5. Educational Implications of the Study

- The use of multiple strategies is more effective for classroom instruction than the use of a single strategy.
- Blended learning instructional strategy should add more information to classroom interaction. These need to be supported teachers' handbooks.
- Teacher education curriculum should pay due consideration to integrate innovative instructional strategies.
- The blended learning instructional strategy used in this study, should focus on the need of incorporating ICT in the classroom.

6. Conclusions

This study highlights the value of bringing instructional strategy, which gives a variety of learning experiences into the classroom, creates interest and develops a positive attitude towards learning. So the systematic application of blended learning instructional strategy in classroom instruction highlight the need for researchers and teacher educators to pay due consideration to create a better learning environment with a long term effect. Hence, the blended learning instructional strategy used in this study could enhance the attitude towards learning and resulted in learning outcomes of higher secondary school students over and above the extent of constructivist classroom instruction.

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