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The Impact of Blended Instruction on Secondary School Students' Academic Growth and Critical Thinking in Hyderabad city

Kota Sai Krishna*
Associate Professor of English,
Gudlavalleru Engineering College,
Gudlavalleru – 521356, A.P, India
ORCID: 0009-0004-0441-4582

Prof. K Ratna Shiela Mani,
Professor,
Department of English,
Acharaya Nagarjuna University
Guntur – 522501, A.P, India

Abstract. The purpose of this study is to determine whether or not ninth-grade students in the Hyderabad benefit from blended learning in terms of academic performance and the cultivation of reflective thinking in the context of school education. Two classes of ninth-graders from the Narayana PrivateSchool in Hyderabad city make up the study sample. Twenty-five students were taught utilising a blended learning technique, while the remaining twenty-three served as a control group receiving instruction in the conventional fashion. The study used two instruments, an accomplishment exam and a reflective thinking scale, both of which their validity and reliability had established in order to accomplish the study's goals. The experimental group showed considerable improvement over the control group on the post-test measures of performance. The results also demonstrated that the experimental group had a significantly higher mean score than the control group on the reflective thinking scale. According to the findings, a more comprehensive approach to education, such as integrated learning, is more successful in transmitting knowledge.
Keywords: reflective thinking ,significantly,instruments,blended learning.

1.Introduction

The world is currently experiencing a major scientific and technological revolution, which has led to a plethora of innovations and incremental shifts in the technological landscape, all of which have impacted the development of pedagogical strategies and contributed to the expansion of human knowledge. New approaches to English education are needed to keep up with modern difficulties, such as encouraging critical thinking and research skills development and transforming the student into an enthusiastic, curious, and involved learner rather than a passive observer.

The state government has been eager to revise its curricula in line with quality educational standards and outcomes and to provide schools with state-of-the-art technologies and educational resources in light of the future vision of the Telagana, which aims to develop and enhance the educational system in an interactive environment. Teachers are allowed greater latitude to incorporate these resources into their classes and modify them to meet the requirements of their students. This has the dual benefit of

broadening students' exposure to new ideas and subjects and honing their capacity for critical thinking and problem solving .

In the late 1990s, blended learning quickly rose to prominence as one of the most widely used forms of digital learning. The interconnected nature of its parts has led some educators to see it as a replacement for more conventional forms of online education.Notwithstanding their differences in definition, Graham and Milheim agree that blended learning uses the strengths of both conventional classroom instruction and online learning to get optimal results.

By strengthening the connections between the learners and the available learning programmes and developing their skills and abilities, blended learning is crucial in fostering interaction and motivation towards studying the subject of English education. According to Makhdoom , blending traditional classroom instruction with online learning creates a dynamic and mutually beneficial setting for teachers and students alike. The flexibility of blended learning allows students to study whenever they choose outside of class, so they may go back and review material from different lectures at different times of day . Because of this, students have more leeway in determining when and where they study, and they may go through the material at their own speed, based on their own strengths and weaknesses.As we must maintain and improve upon the current educational system in order to take advantage of the technological developments of the present, blended learning is one of the most effective uses of modern technology in education.

In addition, introspective contemplation is a highly developed mental process. The ability to focus one's thoughts on a specific goal requires an examination of the many components of a given situation and a search for underlying links; developing this ability is crucial in assisting children to solve problems in a logical, rather than irrational, manner. Since it affords students enough time for critical and introspective thought, an English education in the United Arab Emirates is essential for the holistic development of the student's character. This is evident in verses throughout the Qur'an and Hadith, as well as in the countless actions and occurrences that prompt one to consider the vastness of the universe and its vocabulary. Due to its importance, several studies have focused on analysing reflective thinking and searching for effective strategies and techniques for its development. Recent studies byand others confirm the importance of teaching and mastering its skills across a variety of educational techniques.

The use of blended learning is also supported by a substantial amount of research from a variety of academic disciplines. Several studies, including those by,have found that using environments supported by technological developments in curricula improves students' learning and the teacher's role. Technology's integration into the classroom has had far-reaching effects on students' academic performance and their development of reflective thinking skills. This study expands upon prior research by examining a sample of ninth graders in the United Arab Emirates to determine the impact that adopting blended learning has on students' achievement and the development of reflective thinking within the framework of English education.

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Table (1): Average and standard scores on a pre- and post-test in English education for pupils in the ninth grade, broken down by demographic category (experimental, control)		Pre-Assessment		Post-Assessment	
Group	Count	ArithmeticMean	Standard-Deviation	ArithmeticMean	Standard-Deviation
Experimental	25	11	4.193	18.40	4.481
Control	23	10.22	3.692	12.00	4.824
Total	48	10.63	3.939	15.33	5.620

2. **Discussion and Analysis of the Study's Findings**
3. **First:according to the data, the first hypothesis, "There are no statistically significant differences at the significance level (α≤ 0.05) in the achievement of ninth-grade students in the subject of English education in the United Arab Emirates due to the teaching method (blended learning, the usual method)," is false.**

ninth graders were randomly split into two groups (experimental and control) and their average and standard deviation results on an achievement test were compared before and after they were exposed to English education in order to test the hypothesis (Table 1).

Pre- and post-test scores on an accomplishment exam related to English education show strong group disparities, as shown in Table (1). (Test, regulate). To assess the statistical significance of the differences between the experimental and control groups on the achievement test, we first used one-way analysis of variance (one-way ANCOVA) to remove the influence of the pretest on the posttest scores. The data is presented in Tabular form below (2).

ninth graders' post-test performance independent of their pre-test performance, as determined by the results of a one-way analysis of covariance (ANCOVA) (experimental, control).

Sourceofvariance	sum ofsquares	Degrees of-freedom	Mean sumofsquares	Fvalue	Level ofSignificance	ETA Squareη2
Pre-measurement	397.965	1	397.965	30.046	.000	.400
Group	401.534	1	401.534	30.315	.000	.403
Error	596.035	45	13.245			
Total	1484.667	47				

Grades on the accomplishment exam for the topic of English education vary significantly (α≤ 0.05) across the groups of ninth graders, as shown in Table 2. (Experimental, control). The group effect is statistically significant, with an F value of 30.315, p=0.000. Based on the value of ETA square (η2) interpreted (predicted), Table (2) shows that the teaching approach significantly impacted the dependant variable, the accomplishment test.

This might be due to the impact of peers when doing classroom and home chores, to the greater interaction between students, educational content, and learning tools, and between students and the teacher, or to a combination of these factors. All of these elements work together to make learning

more interesting and enjoyable for students, which in turn improves academic outcomes.You can see which group gained the most from the adjustments by comparing their corrected arithmetic means and standard errors, which have been extracted and shown in Table 1. (3).

Table (3): Means and standard deviations on the achievement test after adjusting for group size (experimental, control)

Group	A weighted average with post-hoc adjustments	Standarderror
Experimental	18.122	.730
Control	12.303	.761

Table 3 shows that the integrated learning group significantly outperformed the control group across the board. The null hypothesis is thus incorrect, and the alternative hypothesis, which asserts that "there are statistically significant differences at the level ($\alpha \leq 0.05$) in the average grades of the students in the control and experimental groups on the post-achievement exam," is true.

To put it simply, the qualities of this kind of education make it possible to learn in a variety of situations and in ways that are engaging and enjoyable, which in turn enhances the efficiency with which information is delivered, absorbed, and internalised. As a result, this method of instruction is different from the norm, especially in the context of English education. It has led to higher levels of interest in learning, a broader scope of information acquired, a firmer understanding of key ideas, and longer-lasting memorization.

Research by (Utami, 2018), (al-Massad, 2017), (Saqaria, 2018), and (Kintu & Zhu, 2016) all support the idea that blended learning is effective in terms of student achievement and the development of positive attitudes, therefore these results make sense.

Second: The data support the second hypothesis, which states, "There are no statistically significant differences in the development of reflective thinking among ninth-grade students in the subject of English education in the United Arab Emirates due to the teaching method (blended learning, the usual method) at the level of significance ($\alpha \leq 0.05$)."

In order to evaluate the hypothesis, the means and standard deviations of ninth graders' reflective thinking scale scores on the issue of English education by group (experimental, control) are shown in Table (4) below.

Table (4): Calculating the mean and standard deviation of ninth graders' pre and post-test scores on a reflective thinking scale related to English education (experimental, control)

		Pre-Measurement		Post-Measurement	
Group	Number	Arithmetic-mean	Standarddeviation	Arithmetic-mean	Standarddeviation
Experimental	25	10.40	2.828	15.16	1.841
Control	23	9.00	2.576	9.78	1.930
Total	48	9.73	2.773	12.58	3.293

Mean scores on the reflective thinking scale varied significantly between the pre- and post-tests for each subgroup of ninth graders, as shown in Table 4. (Experimental, control). In order to assess whether or not the differences between the experimental and control groups on the reflective thinking

scale were statistically significant, we used one-way analysis of covariance (one-way ANCOVA) after correcting for changes in pre- and post-test scores. Table 5 below displays these findings:
Table(5):Summary of a one-way analysis of covariance (ANCOVA) of reflective thinking scale post-test scores by group (experimental, control) for students in ninth grade who are learning about Telugu.

Sourceofvariance	Sum ofsquares	Degrees of-freedom	Mean sumofsquares	Fvalue	Level ofsig-nificance	ETA squareη2
Pre-measurement	43.603	1	43.603	16.396	.000	.267
Group	266.152	1	266.152	100.082	.000	.690
Error	119.670	45	2.659			
Total	509.667	47				

When comparing groups of ninth graders on the reflective thinking scale related to English education, Table 5 shows that there are significant differences at the $\alpha \leq 0.05$ level. (Test, regulate). Since the F value is 0.000, indicating a statistically significant group effect (16.396).

For the dependent variable, a measure of reflective thinking, the interpreted (predicted) variance was 69% of the ETA squared ($\eta 2$) value (Table 5).

You can see which group gained the most from the adjustments by comparing their corrected arithmetic means and standard errors, which have been extracted and shown in Table 1. (6).

Table (6): Group means and standard deviations for mathematical modifications made to the reflective thinking scale (experimental, control)

Group	Modifiedpostarithmetic mean	Standarderror
ExperimentalControl	14.919 10.045	.332 .346

Students in the experimental group who used the integrated learning method did better than those in the control group, as seen in Table 6.

These positive outcomes are probably attributable to the use of blended learning, which involves a variety of activities and applications conducted throughout the lesson stages to increase motivation to learn, engage students in an integrated and interactive educational process, activate their previous knowledge, and render it a starting point. All these factors combined to increase pupils' attention, enjoyment, and suspense while also strengthening their ability to reflect.Studies byall come to similar conclusions, demonstrating the importance of educating students to think critically and reflectively.

Recommendations

- Blended learning should be incorporated into all aspects of English education as well as other academic subjects, and the teacher's guide should feature blended learning pedagogical models.

- The significance of including time for critical reflection in a variety of settings all through the curriculum design and creation process.
- The value of introducing students to technology and getting them ready to utilise it in the classroom, especially in the context of English education but also in other fields.
- Making sure teachers in all types of English schools are aware of and able to take use of blended learning's numerous strengths.

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