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The impact of STAD (Student Teams-Achievement Division) strategy on Primary 6 pupils' continuous writing

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Abstract

This study aimed to investigate the impact of Student Teams-Achievement Divisions (STAD) on Primary 6 pupils' continuous writing, using a comparison group design over eight 60-minute teaching periods. Pre- and post-tests were administered for both the experimental and comparison groups. The results showed that, while both showed significant improvement in their post-test results, the improvement by the experimental group was significantly greater.

Introduction

Student Teams-Achievement Divisions (STAD) is a system of cooperative learning which helps to foster teamwork and independent learning. It is an alternative to conventional teaching methods and can be used to effectively teach a variety of subjects (Slavin, 1994). Slavin (1994) states that the STAD strategy is characterised by three concepts which are team rewards, individual accountability and equal opportunities for success.

Our research question was:

> *To what extent does the use of the STAD strategy improve the language component of continuous writing of Primary 6 (P6) pupils?*

Methodology

Samples

Two intact P6 classes, 6B and 6C, were selected for this study. In terms of academic ability, both classes were of high progress. There were 40 pupils in each class. The classes were taught by two different experienced teachers. One class formed the experimental class and the other the control class and the results were compared after eight 60-minute teaching periods.

The pre- and post-tests

The pre- and post-tests consisted of continuous writing questions based on the PSLE (Primary School Leaving Examination) format. While the researcher did her best to ensure equal difficulty of both tests by adhering closely to STELLAR guidelines for assessment, she was unable to ensure

scientifically that the difficulty of both the pre- and post-tests were the same. Pupils had to write a composition of about 150 words based on a given theme and the three pictures in the question. Each test carried a 40-mark weightage. Teachers used a standard rubric to mark the compositions. Standardisation exercises were carried out before the teachers marked the compositions for the pre- and post-tests. To ensure fair testing, which scripts were from the control and experiment groups was not made known to the pool of markers.

Intervention

The pupils in the experimental class were arranged in groups so that the average ability within each group was similar to that of all other groups within that class. Each learning group in the experimental class had four students, one of whom was high progress in terms of writing ability. In the control class, the pupils were paired randomly. The teacher of the experimental class deployed the STAD strategy to carry out the writing lessons, allowing pupils to earn group and individual points through activities during the writing lessons. The intervention in the experimental class was carried out according to the components of the STAD method which comprised teaching, team study and then individual work without peer assistance. The writing package prepared by the school's English Department was used in both classes.

Each lesson in the experimental class began with a lecture-style teacher presentation to introduce and discuss the materials in the writing package that had been prepared by the school for the Primary 6 level. Students were told that they would have a writing activity at the end of the teacher's presentation and so they had to pay attention. In her lecture-style presentation, the teacher included a tuning-in video. For example, when the pupils had to write a story on fire, she showed them a video clip of a burning building to trigger their schemata. Thereafter, the teacher focused on a specific aspect of continuous writing, for example writing an interesting introduction. The teacher gave examples of writing a good introduction in her presentation. This was followed by team study during which the pupils ensured that all the members in their team (i.e. group) had learnt from the teacher's presentation. During the team study, the pupils discussed what had been taught and how they could apply it in their writing. Unlike the control class, the pupils in the experimental class were given bite-sized writing tasks before they wrote their individual compositions. The pupils then did these bite-sized individual tasks during which they earned points based on progress over past performance. An example of a bite-sized activity would be writing just the first two lines of an interesting introduction if the writing lesson was on writing introductions. A total of five activities were carried out for the pupils to earn points to contribute to their STAD points. The scores for these activities were recorded by the team leaders who kept track of their members' progress. When the teams did well, the teacher praised them explicitly in front of the entire class.

In the control class, the teacher read aloud the newspaper articles included in the school's writing package to trigger pupils' schemata relevant to the theme. She then read aloud the model composition provided in the school's writing package with the class, pointing out the good phrases and ideas in the model composition. Thereafter, the pupils had to work backwards and break down this model composition to fit a graphic organiser that was included in the writing package. The teacher then brainstormed for ideas for the given continuous writing task in the school's writing package with the class. Thereafter, she gave pupils time to plan their individual continuous writing using the writing organisers in the writing package before the pupils wrote their individual pieces of continuous writing.

Both classes were taught by teachers who had at least 10 years of experience teaching Upper Primary English Language. Both classes adhered to the Writing Process Cycle (WPC) as recommended by the STELLAR Curriculum.

Data collection

The pre-test and post-test results of both classes were used in the analysis where the respective means and *p*-values were calculated. The critical *p* value was set to <.05.

Results

The following tables show the pre-test results of the classes in the study. The pre-test results of both the experimental and control groups were analysed in Table 1 and confirm that there was no statistically significant difference between the two classes in terms of their ability in the continuous writing component of the test. From the data, the two-tailed *p* value of .28 confirms that there was no significant difference between the two classes before the intervention.

Table 1
Pre-Test results of Experiment & Control Classes

t-Test: Two-Sample Assuming Equal Variances		
	Experimental Class Pre-test N= 40	*Control Class Pre-test N= 40*
Mean	20.9	19.93
Variance	18.3	14.02
Observations	40	40
df	78	
t Stat	1.08	
P(T<=t) two-tail	.28	
t Critical two-tail	1.99	

The post-experiment scores of both the experimental and control classes were analysed and appear in Tables 2 and 3 below. The one-tail *p* values of .000 from Table 2 and Table 3 show that there was a significant difference for both groups at the end of the intervention, i.e. that both classes had made significant improvement. While it is possible that the improvement in scores for the two classes may have been due to differences in the difficulty levels of the pre- and post-tests, the researcher tried to ensure equal difficulty of both tests by adhering closely to STELLAR guidelines for assessment. In view of this, it is believed that both groups had progressed.

Table 2
Post-Test results of Experiment Group

t-Test: Paired Two Sample for Means		
	Experimental Class Pre-test N= 40	*Experimental Class Post-test N= 40*
Mean	20.9	27.65
Variance	18.3	13.31
Observations	40	40
Hypothesized Mean Difference	0	
df	39	
t Stat	-8.74	
P(T<=t) one-tail	.000	
t Critical one-tail	1.68	

Table 3
Post-Test results of Control Group

t-Test: Paired Two Sample for Means		
	Control Class Pre-test *N= 40*	*Control Class Post-test* *N= 40*
Mean	19.93	24.28
Variance	14.02	14.10
Observations	40	40
Hypothesized Mean Difference	0	
df	39	
t Stat	-5.95	
P(T<=t) one-tail	.000	
t Critical one-tail	1.68	

As presented in Table 4, a two-sample *t*-test was used to analyse the difference between the two classes' performance in the post-test. The one-tail test was used as the researcher expected there would be a significant difference between the classes after the intervention was carried out with the experimental class making more progress than the control class. The one-tail *p*-value was less than .001, which shows that there was a significant difference between the two classes' performance in the post-test and this supports the expectation that the STAD strategy to a very large extent did improve the language component of continuous writing of the Primary 6 pupils. The data thus indicates that, while both groups improved their test performance over the period of the study (eight 60-minute teaching periods), the experimental group's improvement was significantly greater than that of the control group.

Table 4
Post-test comparison

t-Test: Two-Sample Assuming Equal Variances		
	Experiment Class Post-test *N= 40*	*Control Class Post-test* *N= 40*
Mean	27.65	24.28
Variance	13.31	14.10
Observations	40	40
Hypothesized Mean Difference	0	
df	78	
t Stat	4.08	
P(T<=t) one-tail	.000	
t Critical one-tail	1.66	

Discussion

While both classes made progress at the end of the research, the use of the STAD strategy appeared to be significantly successful in helping the Primary 6 pupils in the English Language continuous writing component. It is possible that the STAD approach provided a motivating experience for students in the experimental class. Motivation is crucial in learning and motivation is

heightened when students are exposed to motivating experiences on a regular basis (Debnath, 2005; D'Souza & Maheshwari, 2010; Palmer, 2007).

Conclusion

The STAD strategy appeared to be a success in this research in helping Primary 6 pupils improve the language component in their continuous writing. It helped to boost pupils' self-esteem, enabling them to be good writers. Furthermore, it strengthened teamwork in the classroom. This study could be extended to cover other areas of language learning in order to test its impact on the English Language classroom.

References

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