

The Effect of Student Teams Achievement Divisions as a Teaching Strategy on Grade 10 Learners' Economics Knowledge

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Abstract

This article examined the impact of Student Teams Achievement Divisions (STAD) as a cooperative learning teaching strategy in building economic knowledge of secondary school learners. Data was collected from 229 grade 10 economics learners and eight teachers at secondary schools. Teachers used both STAD and direct instruction by teaching learning outcome four, Contemporary Economics Issues, from the Economics curriculum. Learners completed a 40-item multiple-choice economics test as a pre-test and post-test. Findings revealed that STAD as a teaching strategy increased learners' knowledge of contemporary economics issues statistically as compared to the direct instruction classes.

1. Introduction

The importance of economics education goes far beyond the goal of improving an understanding of the basic principles of supply and demand and the workings of our economy. Learners develop perceptions of their economic world at an early age, which, as they progress through the educational process, develop into attitudes and opinions about the subject of economics. Intended or not, teachers influence the direction of attitude development (van Wyk, 2007). By finding ways to teach learners more about economics, teachers are contributing to improved attitudes toward the subject. By teaching basic economic concepts and applying them to classroom discussions of economic issues and institutions, teachers are not indoctrinating learners, but providing a knowledge foundation for more informed learner opinions and decision making on vital issues. The more economics concepts learners know, the more they like and value the subject and the more information they have about economic issues. Learners who do not get the opportunity to learn economics and increase their economic understanding will probably never take much interest in the subject or in their economic world.

Emanating from this challenge, especially to the South African education system, economics teachers are key agents to correct these imbalances. According to the *National Policy Framework for Teacher Education and Development in South Africa* (Department of Education 2007), the right to quality education for all in South

Africa is noted as a democratic right without limitation, and schooling is described as a public good in which teachers are the key agents. The range of demands placed on teachers, evident in the seven roles set out for them in the section on *Norms and Standards for Educators*, is also quite impressive and is expected to have a significant impact on teacher training and curriculum development initiatives in all school curricula. This is critical important in relation to economics education. Walstad and Rebeck (2002) mentioned that a viable education system with committed, competent and confident teachers is a primary condition for achieving the objectives of economics education. In reference to the South African economics subject didactics teachers, a huge responsibility is placed on *what, why and how* they teach to achieve the critical outcomes within the National Curriculum Statement (NCS) curriculum policy framework for South African schools. From the latter, teacher efficacy has emerged as an important construct and teachers' beliefs in their ability to actualize the desired outcomes for their learners. Teacher efficacy has been linked to teacher effectiveness and appears to influence learners in their academic achievements (Dickie 2006).

2. Student Teams Achievement Divisions (STAD) as Cooperative learning teaching method

Scholars of the cooperative learning approach (CL) are of the opinion that this approach should be promoted in the teaching of the social sciences, especially economics education (Johnson, Johnson, & Stanne, 2000; Sharan, 1994; van Wyk, 2010). In the CL environment, learning are characterized by restructuring collaborative problem solving activities, integrating different points of view, giving explanations and analysing misconceptions, collaborative practice, high intensity of learner activities and controversial discussions, which are typically used when engaging in cooperative methods, can be labelled as cognitive elaboration. It has been frequently argued that elaborate processes of integrating new information actively into one's prior knowledge might be a fundamental explanation for the effectiveness of cooperative learning methods. Student Teams

Achievement Divisions (STAD) is such CL- teaching method which provides a cooperative learning environment which fosters learner activity, joint acquisition of content and mutual explaining. STAD is a CL-learner centredness instructional technique that could help meet this challenge in South African school classrooms. STAD restructures conventional instructional strategies to place the learner at the forefront of the learning process by transforming the teacher into a facilitator who probes and challenges learners toward constructing knowledge (e.g., van Wyk, 2010; Johnson, Johnson Maruyama, 1983.). In STAD, learners formulate and pursue their own learning objectives by researching a situation, developing appropriate questions, and producing their own solution to a problem. Teachers facilitating and coaching learners with suggestions and advices for further study or inquiry but do not assign predetermined learning activities.

The following research question is formulated for the purpose of conducting this research:

Does STAD enhance knowledge and learning of contemporary economics issues in secondary school learners as compared to the traditional direct instruction approach?

3. Research Methodology

Research design: A pre-test-post-test design (quasi-experimental design) was employed to investigate differences between the direct instructional method (comparison) and STAD (treatment) classes.

Sampling: Eight experienced teachers at eight different secondary schools in the Free State Department of Education (FSDoE) were purposefully selected for the study. Three of the secondary schools were located in the rural education districts, and five were located in urban education districts. During the second quarter 2012, each teacher taught one class in a direct instructional method in contemporary economics issues and at least one class using a STAD unit designed to meet the Curriculum and Assessment Policy Statement (CAPS) curriculum objectives. Using data from 229 grade 10 economics learners at eight secondary schools and controlling for individual characteristics.

Data collection: The teachers used both STAD and direct instruction by teaching learning outcome four, Contemporary Economics Issues, from the CAPS Economics curriculum. Learners completed a 40-item multiple-choice economics test as a pretest and posttest for the purpose of this study.

Ethical considerations: Before the researcher could begin with the study, consent was first obtained from the provincial department of education. Another was also

included which was send to schools principals of the schools and parents of students regarding confidentiality of any results and personal information. The purpose of the study was explained, the confidentiality clause with a consent letter obtained from the provincial department of education before the study started.

4. Results

Before discussing the results of the multivariate estimations, a description of the learners, teachers, and outcomes from this analysis samples (Table 1) is tabulated. This description provides a benchmark for explaining the subsequent multivariate analysis, which highlights changes from the averages presented in the descriptive statistics.

Table 1. Pre-test-Post-test scores between STAD and Direct instruction

Variables	N	Pre-test scores		Post-test scores		Change scores	
		M	SD	M	SD	M	SD
<i>Teacher A</i>							
STAD	35	27.0	12.6	31.0	16.3	4.0	3.4
Direct instruction	33	28.8	13.2	29.4	14.2	1.0	2.6
<i>Teacher B</i>							
STAD	29	24.9	12.0	27.3	19.2	3.1	5.4
Direct instruction	32	27.0	11.2	28.4	13.2	1.3	3.2
<i>Teacher C</i>							
STAD	41	26.0	12.4	27.0	17.0	1.0	4.4
Direct instruction	42	28.1	11.0	29.9	14.0	1.7	3.0
<i>Teacher D</i>							
STAD	29	23.0	12.4	26.2	17.2	3.1	5.4
Direct instruction	33	25.3	11.3	27.0	13.2	1.6	4.1
<i>Teacher E</i>							
STAD	40	29.7	13.2	31.3	19.2	1.6	4.8
Direct instruction	41	28.5	12.1	29.3	18.4	0.7	3.3
<i>Teacher F</i>							
STAD	33	23.3	13.5	24.3	15.0	0.9	3.4
Direct instruction	35	28.1	12.1	29.1	13.0	0.9	5.6
<i>Teacher G</i>							
STAD	29	26.2	11.6	30.0	15.2	3.8	6.0
Direct instruction	25	26.6	13.0	29.4	17.2	2.7	3.5

Note: 40-item multiple-choice contemporary economic issues test as a pre-test and post-test.

Based on the results in Table 1, significant ($p \leq .05$) differences existed between STAD and direct instruction classes (for any teacher) in performance on either the pre- or post-test. However, both teachers A (4.0) and G (3.8) had a significantly higher change in test scores from the pre- to post-test in the STAD classes. In sum, teachers A, B, D, E and G who used the STAD performance better compared to the Direct instruction method. Economics model equation (1), without any interaction terms, shows whether STAD is correlated with increased knowledge of contemporary economic issues, as measured by a multiple- choice post-test score, controlling for verbal ability, individual factors (gender, interest in economics), and teacher.

Table 2. Comparison of mean scores between STAD and the direct instruction

	N	Mean score		t-value	p-value
		Pre-test	Post-test		
STAD	229	29.2	37.7	2.113	.000*
Direct instruction	241	25.5	28.9	1.532	.089

* Statistically significant $p < .05$

Based on the data in Table 2, differences in the STAD mean score compared to direct instruction methods indicates an overall change or difference of 4.1 (10.2%) which shows that STAD is statistically significant ($p < .000$) compared to direct instruction for this study.

5. Discussion

The results of this study offer support for previous research studies in that cooperative learning instruction was used to explore student performances and motivation in a variety of ways (Nichols and Miller 1994). The results of this investigation show that grade 10 learners achievement gains were observed in the STAD experimental group when cooperative learning experience was implemented. This is consistent with similar achievement gains previously reported (Slavin 1990; Nichols and Miller 1994) In previous studies, Bernaus and Gardner (2008) and van Wyk (2007) observed increases in achievement and motivation gains when cooperative learning replaced the traditional form of instruction. The experimental group which was exposed to STAD had a statistically significant increase in economic literacy levels compared to the control group. By using the STAD experimental group and implementing cooperative learning at two different times of the year, the findings of this project provide additional support for this type of instruction technique. Emanating from this study, it has been suggested that student perceptions of the learning environment remain relatively fixed or stable after the first six weeks of contact; after this time it becomes difficult to change their impressions (Bernaus and Gardner 2008; Nichols and Miller 1994). Furthermore, several studies report that STAD is the most successful cooperative learning technique for increasing student academic achievement (Mills 2001; Zenginobuz and Meral 2008; Vaughan 2002; van Wyk 2007).

6. Conclusion

Findings revealed that STAD as a cooperative learning strategy increased learning of contemporary

economics issues at the secondary school level as compared with traditional direct instruction classes. It is found that, for this study, some teachers were positive towards the STAD as a CL-teaching strategy which showed significantly more increasing in knowledge of contemporary economics issues for grade 10 learners. This finding seems to suggest that the STAD approach is more effective than direct instruction in this investigation. Findings revealed that STAD as a cooperative learning strategy increased learning of contemporary economics issues at the secondary school level as compared with traditional direct instruction classes. It is recommended that the sample size (10-12 grade teachers) for province (352 school) in future research studies being increased, to include a more diverse and representative sample of students ($n=1879$) in the demarcated area. It is further recommended that in-service training seminars (INSET) develop to educate economics teachers on how to teach STAD.

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