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Efficacy of Cooperative learning in the Heterogeneous classes: Teaming Together for excellence

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Abstract
This paper is a discussion on the efficacy of cooperative learning to bring about excellence in the heterogeneous classes. The goal of 'Education for All' will be fruitfully realized only if it meets the standards of excellence and equity. Equity and excellence is the keystone of a progressive education. Equity involves fairness and inclusion. Excellence involves quality. Excellence without equity risks leading to large economic and social disparities; equity at the expense of quality is a meaningless aspiration. Cooperative learning is an educational approach in which students share responsibility and teachers give the support. The mode of learning involves integration among students and sharing of ideas. A study has been conducted to find out the theoretical bases for Cooperative learning as the instructional solution to accelerate both excellence and efficacy in education.
The objective of the paper is to assess the efficacy of Cooperative learning approach for making equity and excellence in education.

Keywords: Cooperative, Heterogeneous, Together, excellence

Introduction
Working together in groups has always been emphasized as an interesting feature of classroom practice, especially in a heterogeneous group of students. Cooperative learning is a teaching method where students of mixed levels of ability are arranged into groups and rewarded according to the group's success, rather than the success of an individual member. Cooperative learning structures have been in and out of favor in American education since the early 1900s, when they were introduced by the American education reformer John Dewey.
Cooperative learning is characterized by Face-to-Face Interaction**.** Students are promoting each others' learning through face-to-face activities where they discuss and explain assignment topics with each other.Students have the sense that they're 'in this together,' feeling that each member's individual effort will not only help him, but the whole group. It leads to positive interdependence. The grade of each student is dependent upon the effort of other group members.Each student is accountable for their own contribution to the group. Clearly described goals ensure that each student knows what she is responsible for and what the group is responsible for. Students are given a means for analyzing their group for how well the group has learned and whether or not collaborative skills are being used.Students learn not only the subject matter, but interpersonal skills and how to work in teams. Students are taught skills of communication, leadership, and conflict management during the early stages of cooperative learning sessions.

Cooperative Learning- the Proven Tool
Many theoretical perspectives believe that learning improves when it is carried out as a constructive and social activity. According to Barros and Verdejo (1998 Barros, B., Verdejo, F. (1998). Designing workspaces to support collaborative learning. Taylor & Francis Online, [Google Scholar] defined Cooperative Learning as the instructional technique or grouping structure in which students are divided into heterogeneous/homogeneous groups to complete instructional activities. There is a considerable body of research validating the effectiveness of Cooperative Learning. (Gillies, R., Ashman, A., & Terwel, J. 2008). Computer Supported Collaborative Learning Series, (2008.Google Scholar) report that concepts such as cooperative, competitive, and individualistic learning have been investigated in social psychology and about 750 studies have been conducted on the benefits of Cooperative Learning since 1800.
The Instructional Solution to accelerate both excellence and equity is the use of a time tested, simple yet powerful tool: A research proven, school-tested solution.cooperativelearning is a complex pedagogical undertaking that has the potential to foster both individual content learning and mutual respect between peers (O'Donnell & Hmelo-Silver, 2013; Webb & Farivar, 1994). In cooperative class room culture, all students share responsibility for the success. Teachers give the necessary support, time and resources and diagnose students' learning needs and plan and evaluate teaching programmes and strategies. Cooperative learning is commonly illustrated when groups of students work together to search for understanding, meaning, or solutions or to create an artifact or product of their learning (Hattie, J. (2015). The learning activities include cooperative writing, group projects, joint problem solving, debates, study teams, and other activities.
The cooperative Learning is a powerful strategy to ensure equity in classroom performance and achievement. Cooperative learning is not new. It is rooted in Lev Vygotsky's (Taber, K. S. 2011) concept of learning called social constructivism in which he highlighted the importance of learning through communication and interactions with others rather than just through independent work. This has made way for the ideas of group learning, one of which being cooperative learning.

Characterizing the equity and excellence dynamics of a cooperative learning situation, then, call for an analysis of the research findings that supports cooperative learning over traditional ones.

The Objective of the study

The objective of the study is to explore various studies conducted to assess the efficacy of Cooperative learning approach for making equity and excellence in education. With this objective in view research questions were formulated to focus the study on the objective.

Research questions:

1. Does Cooperative learning help to foster equity in education?
2. Does Cooperative learning help to foster excellence in education?

Method of study

The method adopted for the study is to explore the empirical studies conducted on cooperative learning with research questions in view

Sources of the Data: the data for the present study were collected from secondary sources available from books and internet.

Cooperative class rooms: empirical studies

The Riverside Cooperative Learning Study by Kagan, S. Zahn, G. L., Widaman, K., Schwarzwald, J. & Tyrrell, G., (1985) demonstrated cooperative learning produced more inclusive classrooms. This was revealed by several measures, including measures of cooperativeness of students, class climate, self-esteem, and ethnic relations. Students taught with cooperative learning became more cooperative: When presented with alternatives, they more often chose to enhance rather than diminish the outcomes of their classmates. Rating of social climate, as measured by standardized class climate measures, improved markedly for minority students in cooperative learning classrooms. A variety of other outcomes of the Riverside Study support the general conclusion that minority students fare far better in cooperative learning classrooms. Attitudes toward schoolwork and social climate were more favorable in the cooperative learning classrooms for all students.

The most dramatic finding, however, was a radical transformation of race relations. To test race relations, students were asked a number of questions that revealed their level of intimacy with each of their classmates. Questions included low-level intimacy questions (willingness to sit next to a student; willingness to loan him or her a pencil) and high-level intimacy questions (willingness to be best friends; willingness to invite him or her home). The results were dramatic. In traditional classrooms, self-segregation among students became more intense with each year in school. Increasingly, students were not willing to be friends or even be friendly with others outside their own race. In contrast, in classrooms in which cooperative learning was used, the tendency of students to choose friends only among their own racial groups practically disappeared.

In the traditional classes, there was a slight tendency for the minority and majority students to manifest more friendliness toward others of their own group. By grades 5 and 6, this slight ethnic cleavage became an enormous chasm: Being of the same ethnicity became almost a prerequisite for friendship. In marked contrast, there was no significant ethnic cleavage at either grade level in the classrooms that included cooperative student teams. Cooperative instructional practices create an inclusive classroom climate in which self-esteem and positive race-relations blossom. That climate improves academic achievement for all students, especially for students who otherwise are likely to be excluded and alienated. Students who feel more accepted and included are more likely to participate, ask for and offer help to peers, and receive peer encouragement for achievement. A more inclusive classroom and higher self-esteem predict more participation, which in turn boosts engagement and achievement. Students who feel more liked and accepted and who are more confident are more likely to participate, feeling less fear of failure. Greater participation is built into the cooperative learning structures (Kagan, S., 2010).

Beginning in the early grades, low achieving and minority students are less likely to participate and to risk failure in front of the whole class in traditional classrooms that lack a supportive, inclusive class climate. Not receiving as much practice or reward, they become even lower achieving, more alienated, and even less likely to participate. So, as they progress through the grades, lower achieving students in traditional classrooms increasingly leave it to the high achieving students to raise their hands to be called on. With each successive grade, lower achievers progressively drop out psychologically, participating less and less. Finally, psychological dropout converts to physical dropout.

In the study by Kenneth T. Keith J., Topping D. Christiec C. Donaldso C. and Emma J., Kay L., (2010) there is conflicting evidence how group work leads to improved classroom relations. A before and after design was used to measure the impact on work and play relations of a cooperative learning programme in single- and mixed-age classes across urban and rural schools. Data were also collected on student interactions and teacher ratings of their group-work skills. Analysis of variance revealed significant gains for both types of relation. Multilevel modelling indicated that better work relations were the product of improving group skills, which offset tensions produced by trans-active dialogue, and this effect fed through in turn to play relations. Although before intervention rural children were familiar with each other neither this nor age mix affected outcomes. The results suggest the social benefits of cooperative learning are a separate outcome of group work, rather than being either a pre-condition for, or a direct consequence of successful activity, but that initial training in group skills may serve to enhance these benefits.

However researches consistently find cooperative learning dramatically improving student achievement in all subject areas, at all grades, and, most importantly, for all groups of students. Summarizing research-based strategies for increasing student achievement, noted educational research team, Marzano, Pickering, & Pollock (2001) found cooperative learning has the best, largest empirical base. “Of all classroom grouping strategies, cooperative learning may be the most flexible and powerful”, says, Ellis & Fouts (2003)

In the traditional classroom, those students who least need the practice are called for response, and those who most need the practice are least called! When cooperative learning structures are used, the teacher calls on all students to respond to the same question presented, having them engage in Pair Share. In the same amount of time that a teacher in the traditional classroom can call on and respond to three or four students, each giving one

response, the teacher using cooperative learning structures has every student in the class give several answers! (Slavin, R. E.1977).

Group Composition and Performance study on Equity Issues in cooperative Group Assessment conducted by Noreen M. Webb, Kariane M. Nemer, Alexander W. Chizhik (1998) investigated the effects of group ability composition on group processes and outcomes in science performance assessments. Students in eighth-grade science classes worked on science assessments first individually, then in groups, and finally individually again. The result of the study showed that group composition had a major impact on group discussion quality and on student achievement. Groups with above-average students produced more accurate and high-quality performance than groups without above-average students. As a result, below-average students who worked with above-average students showed higher achievement than did below-average students who worked without above-average students. The study also revealed that heterogeneous groups provide a greater benefit for below-average students than for above average students.

Niral Shah, Colleen Lewis Roxane Caires, (2013) Analyzed Equity in cooperative Learning Situations. Their paper presents a comparative case study of the different ways that equity and inequity emerged as an elementary computer science student collaborated with two different classmates on programming tasks. Data collected include audio recordings of students' interactions, field notes, written assessments, and students' digital work. Findings indicate that despite the existence of participation structures designed to foster equitable collaboration, inequities emerged as students positioned themselves and their classmates with identities as more or less competent in computer science. While in the first dyad this positioning was often overt, in the second dyad positioning assumed a more passive form. Further, there is evidence that these positioning had an impact on students' opportunities to learn.

STAD. Student Teams Achievement Divisions (STAD) is acooperative learning method that has students practice in teams to master academic content. They earn points for their team by improving their achievement compared to their usual level of achievement. The lower achieving minority students did dramatically better, closing the achievement gap! Each teammate leaves the team, and works with like-topic members from other teams. Students then return to teach their teammates their portion of the content. The result that all students learned equally well in competitive classes. Using a different cooperative learning method, with a different student population, at a different grade level, in a different part of the country, and with a different curriculum content, the same result obtained (Kagan, S. & Kagan, M. n (2009).

Mills Hill Elementary School in England has posted extremely dramatic gains in excellence and equity by adopting Kagan Cooperative Learning Structures. As part of a leadership team cross-school survey of the impact of cooperative learning, 14 teachers attributed the gains to the peer support in cooperative learning compared to the isolation and alienation created by traditional instructional strategies. Some teachers were choked up as they described the transformation resulting from cooperative learning: "It was a real lump in your throat moment; they'd say, 'before you just sat there and you didn't know what was going on and you were frightened to ask, but now you can just ask your friends, or ask your team'. You just got an idea of how that child had been going through school and you just don't realise; it was a very powerful moment."

Students at Mills Hill explained the power of cooperative learning quite simply: "Working with my team helped me do things I couldn't on my own. We did this thing on our table called Rally Robin and you talk with your partner and take turns in sharing ideas." The failure to create engagement among all students in the traditional classroom extends beyond Question-Answer time. During independent practice, students are on their own. With little to no support, they often find repeated worksheet work boring or difficult, and often tune out. In contrast, students in the cooperative learning classroom are placed in teams. The instructional strategies are designed so that students are on the same side as their teammate; there is a high degree of interaction; everyone is held individually accountable for participating.

In engaging students take turns responding, receiving encouragement and praise, and tutoring if necessary. Students keep each other engaged. It is this greater engagement of all students that best explains the increased excellence and equity found. The dramatic, intense engagement among all students indicates the remarkable outcomes of cooperative learning research. Structural conditions encourage full and equal participation for all students. Plus students have the support of their peers. Simply put, cooperative learning engages every student while traditional instruction engages a select few.

The foregone discussion validate the effectiveness of cooperative learning for accelerating both excellence and equity. The merits of cooperative learning include celebration of diversity by whichstudents learn to work with all types of people. During small-group interactions, they find many opportunities to reflect upon and reply to the diverse responses fellow learners bring to the questions raised. Groups also allow students to add their perspectives to an issue based on their cultural differences. This exchange inevitably helps students to better understand other cultures and points of view:

Diversity of the groups has an enriching effect. Students work with all types of individuals. Different students will have a variety of responses to the questions raised. Multi-Modal Stimulus Input and novelty of presentations caters to the individual differences of the students. Each student can address the diverse responses fellow learners bring based on their cultural differences and experiences and can add their perspectives.

Cooperative learning provides room for Constructive Interdependence of the students, Individual Responsibility, Equal Involvement of all the participants, and Synchronized Interface among students

Students learn to relate to their peers and other learners as they work together in group enterprises. This can be especially helpful for students who have difficulty with social skills. They can benefit from structured interactions with others.

Acknowledgment of individual differences, when questions are raised, different students will have a variety of responses. Each of these can help the group create a product that reflects a wide range of perspectives and is thus more complete and comprehensive. Instruction Tailored to Individual Differences in Intelligences and Learning Styles promotes active involvement of students. Each student has opportunities to contribute in groups. Students are apt to take more ownership of their material and to think critically about related issues when they work as a team.

Because there are more exchanges among students in groups, students receive more personal feedback about their ideas and responses. This constructive personal feedback also boosts up their self-concept.

Findings of the study

From the discussion of the empirical studies conducted on cooperative learning the following pointed have been generated:

- Cooperative Learning produced more inclusive classrooms compared to traditional teaching
- Minority students fared far better performances in Cooperative Learning
- Cooperative Learning Improves race relations with no ethnic cleavage
- Social benefits of group work and group skills influence better work relations
- Group composition and group discussion quality impacts on student achievement
- Below-average student's benefit from heterogeneous groups but above average students does not show significant benefit.
- Positioning has positive impact on students' learning opportunities
- Lower achieving minority students show improvement on achievement in Team learning
- Peer support has positive effect on excellence and equity
- Greater engagement of all students in the class has higher impact on the excellence and equity.

Studies conducted globally suggest that Cooperative learning fosters excellence and equity in education.

The characteristic features of cooperative learning that promotes excellence and equity are: Celebration of diversity; Multi-Modal Stimulus Input; Novelty of presentations; Constructive Interdependence; Individual Responsibility; Equal Involvement; Synchronized Interface; structured interactions; Acknowledgment of individual differences and Constructive Personal Feedback.

The single most important influence on students' achievement and progress is the effectiveness of the teaching they receive (Alton-Lee, A. (2003). The enormous body of research, affirms with great confidence, that cooperative learning is a powerful antidote to lagging achievement and the achievement gap.

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