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EFFECT OF CO-OPERATIVE LEARNING ON STUDENTS'SELF-REGULATION IN DIFFERENT GROUPING FORMATS

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ABSTRACT

This paper attempts to ascertain the effect of co-operative learning strategies on students' self-regulation in different grouping formats. For this purpose, an intervention programme based on co-operative learning strategies of about 44 hours was developed for students of standard eighth

spreading over nine weeks. The aim of the research was to ascertain whether different strategies based on co-operative learning facilitates the self-regulation of students. Structured tools were used in the study. The participants of the study included 96 boys and 68 girls in the different grouping formats. Students were found to be significantly influenced by the intervention programme. Students in the mixed ability group scored significantly high than the students from the other three groups. The effect size of the intervention programme on self-regulation of the students was found to be 1.97 which is high in magnitude.

KEYWORDS :*Co-operative Learning Strategies, Self-regulation, Grouping Formats.*

1.INTRODUCTION:

One important aspect of active learning is social interaction among students and small group activities are an easy way to facilitate social interaction. Although a small group activity aims to accomplish one or more learning objectives, students often limit their focus to finishing assignments (Meyers & Jones, 1993). It is difficult for an instructor to ensure that students support each other and take responsibility for project goals. In order to resolve this problem and ensure efficiency, small groups should be structured. Co-operative learning occurs in the context of formal small groups, in which students collaborate in order to accomplish shared goals. In co-operative learning groups, students benefit from the positive aspects of social interaction while completing the given assignment. Because

of its flexibility, co-operative learning is a useful tool in many instructional contexts. A teacher exercises control over groups by setting group goals, distributing the roles, and supplying all the material necessary to complete the work (Corliss, 2005). Obviously, low student autonomy could cause less opportunity for self-regulated learning. Self-regulated learning is the collection of thoughts, feelings, and actions that are produced to reach an academic goal (Zimmerman, 2000). Self-regulation is related to a student's effective participation in his or her own learning process in terms of motivation and behaviour. In other words, self-regulation is the affecting, guiding, and controlling of the student's behaviour by himself/herself. Learners are assumed to construct their own meanings, goals, and strategies from the information available in the "external" environment as well as the information in their own minds (Pintrich, 2004). Due to this, the development of self-regulation competencies can be considered the most important learning outcome, and, for this reason, it is important that students be given opportunity to regulate their learning (Schunk & Zimmerman, 1997). It is possible to design a learning environment that improves self-regulated learning with the help of co-operative learning strategies which has students in different grouping formats. However, designing a positive classroom environment that supports self-regulated learning may prove to be difficult in classes where students are accustomed to the traditional teaching approach that includes high teacher control. This could be done with the help of the structure of certain methods, such as co-operative learning.

1.1 Rationale of the study:

Co-operative learning strategies based instructional programme could be used for enhancing self-regulation of the students in differing grouping formats. According to Slavin (1996), interaction among students in learning tasks will lead itself to improve student self-regulation. Students will learn from one another through their discussions of the content and as cognitive conflicts arise, inadequate reasoning will be exposed, disequilibrium will occur, and higher-quality understandings will emerge.

More formally, self-regulated learning is the conscious planning, monitoring, evaluation, and ultimately control of one's learning in order to maximize it. It means being mindful, intentional, reflective, introspective, self-aware, self-controlled, and self-disciplined about learning, and it leads to becoming self-directed. In every classroom, instructional activities are aimed at accomplishing goals and are conducted under a goal structure. Self-regulation is essential to the learning process (Zimmerman, 2008). It can help students create enhanced learning habits and build up their study skills, apply learning strategies to enhance academic outcomes, supervise their performance and assess their academic progress. Teachers thus should be familiar with the factors that influence a learner's ability to self-regulate and the strategies they can use to identify and promote self-regulated learning (SRL) in their classrooms. In order to foster self-regulated learning (SRL), teachers should provide students with learning strategies, as well as with collaborative learning environments, by placing students in different groups that allow them to self-regulate their learning. However, providing students solely with autonomy but not with means to execute strategies will not be beneficial for students. Both the instruction of co-operative strategies, as well as learning environments in different groups that requires and enable self-regulation will be effective to enhance students' self-regulation.

1.2 Review of Related Literature

Co-operative Learning and Self-Regulation

Hulya (2010) conducted a study on the effects of cooperative learning and learning journals on teacher candidates' self-regulated learning. The research has discerned that there is a difference between experimental and control groups and experimental groups' students have been affected more

positively on self-efficacy for learning and performance, elaboration, organization, critical thinking and metacognitive control strategy dimensions of self-regulated learning. DiDonato (2012) conducted a study on effective self- and co-regulation in collaborative learning groups: an analysis of how students regulate problem solving of authentic interdisciplinary tasks. Despite these limitations, the data extends theory by suggesting that co-regulated processes in a group context may lead to increases in self- and co-regulatory learning processes, and noting the conditions under which it is likely to occur. Trost (2014) conducted a study on physical activity, self-regulation, and early academic achievement in preschool children found the benefits of active play for promoting self-regulation and offer insight into possible interventions designed to promote self-regulation and academic achievement. Gilbert (2015) conducted a study on affective self-regulation trajectories during secondary school predict substance use among urban minority young adults found that that interventions that build affective self-regulation skills in adolescence may decrease the risk of young adult substance use. Hong (2016) in a study Factors Influencing self-regulation in E-Learning 2.0: confirmatory factor model found consistent positive correlation between learners' self-regulation and their success rate in e-learning. Elizabeth (2016) in a study an empathetic beginning in education: exploring the prospects of self-regulation skills on pro-social behaviour in the early childhood environment found that one avenue substantially researched and supported in early childhood research is the importance and the cultivation of self-regulation skills in the classroom. Carl (2016) conducted a study on understanding children's self-regulation within different classroom contexts found those practical implications for educators working in early year's settings; classroom grouping, play and transition contexts set the scene for children's engagement and opportunities to self-regulate.

II. METHODOLOGY

2.1 Statement of the Problem

The present paper seeks to study whether there is any effect of grouping formats in co-operative learning on self-regulation of students.

2.2 Operational Definitions of the Terms

Co-operative Learning Strategies: Co-operative learning is defined by a set of processes which help students interact together in order to accomplish a specific goal or develop an end product which is usually content specific.

Self-Regulation: Self-regulation is an integrated, planned learning process, consisting of the development of a set of constructive behaviours that affect one's learning and refers to the self's capacity to alter its behaviours.

Grouping Formats: It refers to the criteria used by the researcher for making the groups in the classroom for instruction and includes random, self-selected, mixed ability and similar ability groups in the present study.

2.3 Scope and Delimitations of the Study

The study included students of various English medium secondary schools from greater Mumbai. The study was delimited to secondary schools of Greater Mumbai. It does not include secondary schools from any other city, state of the country. The experiment was conducted on students of standard eighth only. The study excluded other standards from its purview. The present study was

confined to English medium secondary schools students and does not include regional medium students. The study restricted itself to the study of implementing of co-operative learning strategies on secondary school students' and observes its effect on self-regulation.

2.4 Aim of the study

To ascertain the effect of the intervention programme on self-regulation of students in different grouping formats.

2.5 Objectives of the study

1.To compare the pre-test scores of self-regulation of students in different grouping formats.
2.To compare the post-test scores of self-regulation of students in different grouping formats.
3.To compute the effect size of the intervention programme on self-regulation of students in different grouping formats.

2.6 Null hypotheses of the Study

1.There is no significant difference in pre-test scores of self-regulation of students in different grouping formats.
2.There is no significant difference in post-test scores of self-regulation of students in different grouping formats.

2.7 Methodology of the Present Study

The study has been adopted the quasi- experimental method. In the present research, quasi experimental design of the pre- test post-test, non -equivalent groups was used. It can be described as follows:

$O_1 X_1 O_2$
$O_2 X_2 O_2$
$O_5 X_3 O_6$
$O_7 X_4 O_8$
Where,
O_2 ,O_2 ,O_5 and O_7= Pre-test scores
O_2 ,O_2 ,O_6 and O_8= Post-test scores
and
X_1: Intervention Group1 (Mixed Ability Group)
X_2: Intervention Group 2 (Similar Ability Group)
X_3: Intervention Group 3 (Randomly Selected Group)
X_4: Intervention Group 4 (Self Selected Group)
The duration of the treatment was for 40 hours in each group.

2.8 Sample of the Study

In the present study, the sample consisted of students from four secondary schools affiliated to the state board of Maharashtra. The four groups had 164 students in all from English medium schools situated in Greater Mumbai of Mumbai district in Maharashtra out of which three schools were private un-aided and one school was private-aided.

Table 1: Sample of the Study

Grouping	Boys	Girls	Total
Mixed ability group	30	12	42
Similar ability group	19	20	39
Random sampling group	20	19	39
Self selection group	27	17	44

2.9 Tools of the Study

In the present study, the following tools were used by the researcher to collect the data:

1.Self-Regulation Scale (Brown, Miller, & Lawendowski, 1999). Items were developed to mark each of the seven sub–processes of the Miller and Brown (1991) model, forming seven rationally-derived subscales of the SRQ. Receiving relevant information, Evaluating the information and comparing it to norms, Triggering change, Searching for options, Formulating a plan, Implementing the plan, Assessing the plan's effectiveness. SRQ consisted of 63 items on a 5-point Likert scale with the following scale points: Strongly disagree, Disagree, Uncertain or Unsure, Agree, Strongly Agree.

2.10 Intervention Programme

In order to achieve the objectives of the present research, a carefully prepared set of study material was developed. Thus, the researcher prepared lesson plans on co-operative learning strategies. It had four different modules with different co-operative learning strategies.

2.11 Techniques of data analysis: The present research used statistical techniques of ANOVA and Wolf's formula.

III. FINDINGS AND CONCLUSIONS

1.Null Hypothesis 1: There is no significant difference in pre-test scores of self-regulation of students in different grouping formats.

Table 2: Pre-test SRS in different grouping formats

Grouping	Mean
Mixed ability group	179.98
Similar ability group	185.95
Random sampling group	181.03
Self selection group	188.82

The technique used to test this hypothesis was the One-Way ANOVA. The following table shows the relevant statistics of the pre-test scores of SRS of students' in different grouping formats.

Table 3: Pre-test ANOVA for SRS in different grouping formats

Source	SS	df	MS	F	P
Treatment (between groups)	2194.5517	3	731.5172	4.42	0.005141
Error	26456.334	160	165.35		
Total	28650.9451	163			

The preceding table shows the F-ratio is significant (0.005141). Hence the null hypothesis is rejected.

It may be concluded that the mean pre test self-regulation scores of the students in different

grouping formats differ significantly. The mean post-test scores of the self-selection group is significantly greater than the mixed ability group, similar ability group and randomly selected group.

The following table shows the relevant statistics of the Tukey HSD test of SRS of students in different grouping formats.

Table 4: Tukey HSD Test for pre-test SRS in different grouping formats

M_1 vs M_2 nonsignificant
M_1 vs M_3 nonsignificant
M_1 vs M_4 $P < .05$
M_2 vs M_3 nonsignificant
M_2 vs M_4 nonsignificant
M_3 vs M_4 $P < .01$

It may be concluded from the table 2 and table 4 that the mean SRS on the pre-test is the highest in case of students from self-selection group followed by similar ability group, randomly selected group and mixed ability group in that order.

Moreover, the mean pre-test SRS of students from mixed ability group was significantly smaller than from the other three groups.

2.Null Hypothesis 2: There is no significant difference in post-test scores of self-regulation of students in different grouping formats.

Table 5: Post-test SRS in different grouping formats

Grouping	Mean
Mixed ability group	239.93
Similar ability group	217.62
Random sampling group	229.28
Self selection group	214.25

The technique used to test this hypothesis was the One-Way ANOVA. The following table shows the relevant statistics of the post-test scores of SRS of students in different grouping formats.

Table 6: Post-test ANOVA for SRS in different grouping formats

Source	SS	df	MS	F	P
Treatment (between groups)	17280.1958	3	5760.0653	33.85	< .0001
Error	27226.1639	160	170.1635		
Total	44506.3598	163			

The preceding table shows the F-ratio is significant (P = < .0001). Hence the null hypothesis is rejected.

It may be concluded that the mean post-test self-regulation scores of the students in different grouping formats differ significantly. The mean post-test scores of the mixed ability group is significantly greater than the similar ability group, randomly selected group and self-selection group.

The following table shows the relevant statistics of the Tukey HSD test of SRS of students in different grouping formats.

Table 7: Tukey HSD Test for post-test SRS in different grouping formats

M_1 vs M_2 P < .01
M_1 vs M_3 P < .01
M_1 vs M_4 P < .01
M_2 vs M_3 P < .01
M_2 vs M_4 nonsignificant
M_3 vs M_4 P < .01

It may be concluded from the table 5 and table 7 that the mean SRS on the post-test is the highest in case of students from mixed ability group followed by randomly selected group, similar ability group and self-selection group in that order.

Moreover, the mean pos-test SRS of students from self-selection group was significantly smaller than from the other three groups.

3.1 CONCLUSION

It may be concluded that the mean SRS of students is significantly greater. Thus, the co-operative learning strategies were found to be effective in enhancing the self-regulation of students' in different grouping formats. The self-selection group had scored highest than mixed ability group, similar ability group and randomly selected group in the pre-test scores. The mixed ability group had scored highest than similar ability group, randomly selected group and self-selection group in the post-test scores.

IV. DISCUSSION

The treatment i.e the intervention programme developed by the researcher is found to be effective for enhancing self-regulation of students in different grouping formats. The mean scores of the self-selection group is highest in the pre-test as due to self-selection, there may be a number of differences between the people who choose to become a part of the group and those who choose not to, such as socioeconomic status, category, gender or IQ. Due to self-selection according to such factors, a significant difference in mean pre-test scores could be observed between the groups. The mean scores of the mixed ability group is highest in the post-test as co-operative learning is an educational approach which aims to organize classroom activities into academic and social learning experiences. Students work in groups which has members of different academic ability to complete tasks collectively towards their goals. Everyone succeeds when the group succeeds. These groups are set up to so that members provide support to each other so that all can succeed academically. Thus the teachers should make an attempt to adapt co-operative learning strategies to enhance the social and academic skills of the students and also they collectively get involved in the groups to attain mastery over the content.

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