

HOW DOES COOPERATIVE LEARNING HELP TO INCREASE PRODUCTIVE TALKING AMONG THE STUDENTS IN SCIENCE LEARNING?

T. Sakeetharan^{1*} and T.M.S.S.K. Yatigammana²

¹*Postgraduate Institute of Science, University of Peradeniya, Sri Lanka*

²*Department of Education, University of Peradeniya, Sri Lanka*

**sakeetop@yahoo.com*

Cooperative learning is a solid scaffolding technique to bridge the gap between what students already know and what they need to know to be successful in their grade- level learning (Ngugen. A, 2010). According to the National Evaluation and Testing Service (NETS, 2010), number of science stream students was less than other streams in grade 12 and 13 because the achievement of the science and mathematics is in lower level in grade 11 General Certificate of Examination for Ordinary Level (G.C.E (O/L)). Even though several projects are introduced at national level, provincial level and zonal level, the achievement of science has not gained to the expected level for many years. Interaction is closely linked to productive talking for successful learning; talking with others can help clarify concepts, improve problem solving, and enhance retention (Educause Learning Initiative, 2005). According to our experiences, even though teachers grant opportunities to students to work as groups and present their performances, they have poor focus on students' productive talking. So we have been interested to improve the science learning through students' productive talking.

Based on easy access, 21 students from grade seven in one of the 1AB schools in Kandy district were selected for our experimental study. We used mix methods approach in the process of finding out answers for our research question of "How does cooperative learning help to increase productive talking among the students in science learning". First, a questionnaire was administered in order to assess the students' productive talking for science learning. Then five lessons were designed based on STAD (Student Team Achievement Method) method under cooperative learning approach for the 5th unit (Properties, uses and interactions of substances) of grade-7 science. During the implementation of five lessons, data were gathered as observations.

During these activities, teacher assessed students' productive talking for science learning using teacher's monitoring sheets. Further, at the end of each lesson, student's reflection form was given to the students duly filled and collected. After 5th lesson, semi structured interviews were conducted with 10 randomly selected students. Two teachers were also interviewed after 4th and 5th lessons. The interviews were audio recorded. Finally, after the implementation of all the five lessons, the same questionnaire was administered to the participants in order to assess the development of their productive talking for science learning. Then the data were analyzed using Excel 2007 version where a paired t test was conducted to analyze the data of questionnaire to compare the development of productive talking prior to the lessons and after the implementing the lessons using cooperative learning approach. Further Observational data also analyzed using thematic analysis technique and an assertion was also derived.