

## **Collaborative and Cooperative Learning in Malaysian Mathematics Education**

Md. Anowar Hossain, Rohani Ahmad Tarmizi, Ahmad Fauzi Mohd Ayub

### ***Abstract***

Collaborative and cooperative learning studies are well recognized in Malaysian mathematics education research. Cooperative learning is used to serve various ability students taking into consideration of their level of understanding, learning styles, sociological backgrounds that develop students' academic achievement and skills, and breeze the social harmony among students of different ethnic backgrounds. Besides academic achievement, process skills and values are required to extend the social harmony among students in today's multiethnic schools. Therefore, teachers are expected to find the pedagogy that enables students to learn academic knowledge and professional skills to face the challenges in their everyday lives. The Malaysian scholars, based on the findings of their cooperative learning studies, emphasized the use of cooperative learning as an effective pedagogy with the aim to improve students' mathematics achievement and communication skills. This paper describes the role of collaborative and cooperative learning to the development of students' mathematics achievement along with their communication skills and with significant integration of values in Malaysian mathematics education.

**Keywords:** *Cooperative learning, mathematics education, academic achievement and skills, Malaysia.*

### **Abstrak**

Penelitian pembelajaran kolaboratif dan kooperatif telah diakui dengan baik dalam penelitian pendidikan matematika di Malaysia. Pembelajaran kooperatif telah diterapkan pada berbagai macam kemampuan siswa dengan mempertimbangkan tingkat pemahaman mereka, gaya belajar, latar belakang sosiologis yang mengembangkan prestasi akademik siswa dan keterampilan, dan kondisi sosial di antara siswa dari latar belakang etnis yang berbeda. Selain prestasi akademik, proses keterampilan dan nilai-nilai yang diperlukan untuk memperpanjang harmoni sosial di kalangan siswa pada sekolah yang multietnis saat ini. Oleh karena itu, guru diharapkan untuk menemukan pedagogi yang memungkinkan siswa untuk belajar pengetahuan akademik dan keterampilan profesional untuk menghadapi tantangan dalam kehidupan sehari-hari mereka. Para sarjana (peneliti) Malaysia, berdasarkan temuan mereka menggunakan pembelajaran kooperatif, menekankan penggunaan pembelajaran kooperatif sebagai pedagogi yang efektif dengan tujuan untuk meningkatkan prestasi matematika

dan kemampuan komunikasi siswa. Tulisan ini menjelaskan peran pembelajaran kolaboratif dan kooperatif untuk pengembangan prestasi matematika siswa bersama dengan keterampilan komunikasi mereka dan dengan integrasi signifikan dari nilai-nilai dalam pendidikan matematika Malaysia.

**Kata Kunci:** *Pembelajaran Kooperatif, Pendidikan Matematika, prestasi akademik dan kemampuan berkomunikasi, Malaysia.*

### ***Introduction***

Collaborative and cooperative learning attracts the attention of Malaysian educators in the 1990s and cooperative learning has been implemented to improve students' mathematics achievement, attitudes toward mathematics, communication skills and values at primary, secondary and tertiary levels. Cooperative learning is the instructional use of small groups through which students work together to maximize their own and each other's learning [15]. Cooperative learning is a type of collaborative learning developed by Johnson and Johnson in the 1960s [5]. Collaborative learning refers to a method of teaching and learning in which students work together to discuss, explore, solve a problem, create a project or presentation, debate, and so on [6]. Over the past three decades, the use of cooperative learning has greatly increased. Collaborative learning has grown into structured cooperative group work such as Learning Together model, student teams-achievement division (STAD), teams-games-tournaments (TGT), team accelerated instruction (TAI), cooperative integrated reading and composition (CIRC), Jigsaw, group investigation (GI), etc. Hence cooperative learning activities are structured learning activities in which students work together in small groups to achieve a shared goal. Pressel [23] reported that students in the cooperative learning environment get opportunities to help each other to improve their achievement and retention, increase self-esteem and intrinsic motivation and develop more positive attitudes toward learning skills and social skills. Cooperative learning helps students to learn academic knowledge under the guidance of a teacher and at the same time they can develop communication skills and values through cooperative interaction.

The Malaysian Vision 2020 is an aspiration to thrust the country as a fully developed nation by the year 2020. One of the challenges of the Malaysian Vision 2020 is the