

**Students' Self-evaluation and Progress in Various Forms of Learning
-- Towards a Shining Tomorrow for Everyone through Practical Education**

Tsutomu Araki¹, Haihan Liu², Mingfu Cui², Yūko Shiraki³,

Jin Tatsuoka³, Kazuko Akaishi³, Kazuki Kanbe³ and Maho Okada³

¹Professor emeritus, ²Lecturer, ³Teacher

¹Tsukuba University of Technology, 4-3-15 Amakubo, Tsukuba City, 305-8520, Japan

²Changchun University Special Education School, 6543 Weixing Road, Changchun City, 130022, China

³Watarase Special Support School, 2812 Shika Kasakakecho, Midori City, 379-2313, Japan

¹tutaraki@yahoo.co.jp, ²252854554@qq.com, ³watatoku-snes@edu-g.gsn.ed.jp

¹www.tsukuba-tech.ac.jp, ²www.cdtjxy.ccu.edu.cn, ³www.watayo-ses.gsn.ed.jp

ABSTRACT

Since its establishment, I taught in the Mechanical Engineering Department of Tsukuba University of Technology, the only university for the visually and hearing impaired in Japan. In classes, many 2D and 3D CAD teaching methods had been created and adopted, in which students self-evaluate individual tasks, learning through their own drawings and modeling.

In the "Exercise in Fundamentals of CAD" class, as a practice of 2D-CAD operation method, students learn Optimization by competing for flight distance under the theme "Making a Paper Plane". They also bring their own airplane drawings to an event in Tsukuba City and experience teaching in a workshop (social contribution: the first step to society). They make a mini stamp to practice 3D-CAD operation and experience modeling. In the "Exercises on Machine Design and Drawing" class, the shape is confirmed by comparing the drawn 2D drawing with the 3D model. The aim is to join a competitive "Paper Car Race" with Special Education College of Changchun University in China. The event, in which both presidents participate, makes effective use of video conferencing and brings about effective international exchange.

After retirement, I returned to my hometown and encountered the students' work training practice in the rich environment of Prefectural Watarase Special Support School. The work of environmental conservation by students, under the guidance of teachers, is appreciated by local people. The evaluation takes the form of an exchange of greetings and words of gratitude among those living in the area, quite different from the self-evaluation experience of Mechanical Engineering students.

I will introduce the efforts of university and special support school students in self-improvement through evaluation of their own learning. I believe an important part of education includes cultivating sociality to optimize the results of Student Self-evaluation.

Keywords: Hearing Impairment, Student Self-evaluation, Paper Car, Self-improvement, Social contribution, Optimization, Video Conferencing