Chapter 5
Original Teaching Materials and School Activities for Students With an Intellectual Disability

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ABSTRACT

Most of the present authors, the teachers at the School for the Mentally Challenged at Otsuka, University of Tsukuba, have been creating original teaching aids and materials using low-tech and high-tech methods. Original teaching aids created with woodworking and metalworking are usually used for students with an intellectual disability. The original teaching materials with Grid Onput dot code, which could link multimedia, such as audio, movies, web pages, html files, and PowerPoint files were created in collaboration with one of the present authors, Professor Shigeru Ikuta, who organized a large research project, and Gridmark Inc. that developed Grid Onput dot code. The present authors have recently developed a new software program, SmileNote, to help students create presentation slides in expressing their feelings, will, and desires to classmates, teachers, and parents. Basic information on these materials and their use in schools is presented in this chapter.

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INTRODUCTION

In Japan, there are 1,135 special needs schools, with approximately 142,000 students enrolled, and nearly 84,000 teachers work in these schools. Of these schools, 553 (nearly one-half; a majority) are for students (91,083 students) with an intellectual disability (Statistics Japan, 2017).

The School for the Mentally Challenged at Otsuka (Otsuka School) is one of 11 schools attached to the University of Tsukuba. The University of Tsukuba, the former Tokyo University of Education, has big Colleges of Education and Disability Sciences. The Otsuka School has four divisions, Kindergarten, Elementary, Junior High, and Senior High Schools, and plays a central leading role. Its successful outcomes are distributed to all of the schools in Japan.

Each student with a disability needs individual, customized teaching aids and materials (Dell et al., 2012). The present schoolteachers have been creating handcrafted teaching aids and materials for students with intellectual disabilities by using woodworking and metalworking, as most special needs schoolteachers do (Figure 1).

In collaboration with Professor Shigeru Ikuta, one of the present authors who organized a fairly large research project, the teachers at the Otsuka School have been creating handcrafted teaching materials using Grid Onput dot codes developed by Grdimark Inc. These novel dot codes can link a maximum of four multimedia, such as audios, movies, web page, etc. Dot codes are so tiny that they can invisibly overlay any graphical letters, photos, and illustrations without impacting the designed visual images.

The Otsuka School teachers, in collaboration with Unity Company, have recently developed a new application called *SmileNote*, which is available on iPad. This software enables students with intellectual

Figure 1. Handcrafted teaching aids created at the Otsuka School