# Chapter 8 Collaborative Learning Community Facilitating Inclusive Learning Settings: Providing Reasonable Accommodations

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### **ABSTRACT**

One of the authors (Shigeru Ikuta) has organized a collaborative learning community with schoolteachers to provide reasonable accommodations for students with disabilities using newly developed multimedia-enabled dot codes. He created "Post-It-like" sticker icons on which dot codes were printed; each sticker icon could be linked with up to four multimedia mediums, in addition to up to four voices/sounds. Touching a dot code icon with a speaking-pen enables audios to be replayed and touching a dot code icon with a dot-code reader enables multimedia to be replayed. Four software packages to create self-made contents were developed by Gridmark Inc. The sticker icons, a speaking-pen and dot-code reader, and software packages are distributed to schoolteachers for free; they can now create original teaching materials for students in classes. The present newly developed software and tools are quite useful to support the students with various difficulties in inclusive learning settings.

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### INTRODUCTION

A disability can be defined as being a condition judged to be significantly impairing, or a function which is significantly impaired, relative to the usual standard of an individual or group. The term is used to refer to an individual's functioning—including physical impairment, sensory impairment, cognitive impairment, intellectual impairment, mental illness, and various types of chronic disease. On the other hand, learning disabilities are neurological-based processing problems. These processing problems can interfere with learning basic skills, such as reading, writing, and/or mathematics. The problems can also interfere with higher-level skills, such as organization, time planning, abstract reasoning, long- or short-term memory, and attention (Learning Disabilities Association of America, n.d.; American Psychiatric Association, n.d.).

In some children, the loss of language is a major impairment. The inability to communicate often leads to intolerable frustrations, which in many students with severe cognitive disabilities leads to temper tantrums, screaming, biting, and self-abusive behavior. Each student with autism spectrum disorder also has some problematic core verbal and nonverbal communication symptoms (e.g., a delay in learning to talk or a complete lack of verbal ability) (National Institute of Mental Health, 2018; National Institute of Mental Health, n.d.; WebMD, 2018). The students having "reading-impaired" have obvious trouble with learning sound-symbol correspondence, sounding out words, and spelling words (Moats & Tolman, n.d.).

An inclusive setting in education is usually defined as a place such as a school or college where children of all abilities learn together. Namely in an inclusive classroom, children with learning disabilities, such as dyslexia, and physical disabilities, such as deafness, learn alongside children of both average and exceptional ability (Koenig, 2020). In Japan, this inclusive setting in education is tried at the public schools but being not widely spread still now.

Japan still has 1,149 *separated* schools for children with special needs; 144,823 students are enrolled, and 85,336 permanent teachers work in these schools. Almost half of such special needs schools is for students identified with intellectual disabilities (Ministry of Education, Culture, Sport, Science, and Technology, Japan, 2020). Outside of these special needs schools, Japanese public schools offer three methods of assistance that vary according to the severity of the children's disabilities. The lowest-need group is taught within regular classes. The next approach is the resource room system, which such special needs students attend several times a week for special instruction. The third method includes special needs education classes. These classes are for children with relatively mild intellectual or physical/motor disabilities, autism/emotional disturbance or health, visual, hearing or speech/language impairment (Kawano, 2016; Isogai, 2017).

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