

# Use of augmentative and alternative communication in special needs education schools for children in Japan

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## Introduction

Augmentative and alternative communication (AAC) is an effective way to support individuals with communication difficulties. In Japan, AAC is currently included in the guidelines for education of students with special needs, and it has therefore become widely recognized. Although AAC is actively used in some special needs education schools for students (hereafter referred to as 'special education schools'), its practicality is still of concern in some cases.

With rapid increases in the types and availability of AAC systems in recent years, for AAC to be a practical means of communication, it is important to consider the following factors when selecting appropriate AAC systems and assessing their use: users' intellectual ability, communication ability, willingness to communicate, physical ability to operate a device, and physical and human environment.

In this study, we investigated the use of AAC and aspects related to AAC introduction in special education schools that provide continuous education for elementary, junior high school, and high school students in Japan, in efforts to achieve practical use of AAC.

## Methods

A questionnaire was sent to the principals of 350 special education schools that provide continuous education for elementary, junior high school, and high school students across Japan in March, 2013. The schools were selected on the basis of location and regional characteristics. The heads of the elementary, junior high, and high schools in each special education school were asked to complete the questionnaire in order to collect information on the three continuous aspects of schooling. The questionnaire was composed of items related to basic characteristics of the school, use of ACC, introduction of new AAC systems, assessment of suitability of AAC, students' handicaps, and AAC system types.

## Results

Among the 444 responses received, 33.1%, 34.2%, and 31.8% were from elementary schools, junior high schools, and high schools, respectively. The non-response rate was 0.9%.

Status of AAC use: 87.2% of responders indicated use of AAC at school and/or home, 58.8% of whom reported the practical use of AAC in all aspects of life by some students, 51.61% of whom reported limited use of AAC in specific settings by some students, and 13.4% of whom reported insufficient use of AAC to fully reflect students' intentions. Furthermore, 35.0% of responders (30.7%, 35.8%, and 19.8% from elementary, junior high, and high schools, respectively) believed that some students were not using optimum AAC systems, because the concept of yes/no was not established or reliability of their yes/no answers was poor (65.3%), the purpose of AAC use was not comprehended (52.8%), the consistency between communication outputs and users' intentions was in doubt (52.1%), communication devices do not fit students' needs or abilities.

Introduction of new AAC systems: 48.6% of responders (60.6%, 51.5%, and 30.5% from elementary, junior high, and high schools, respectively) reported cases of new AAC introduction

after students started school. Also, 70.9% reported previously encountering or were expecting to encounter problems when introducing new AAC systems because there was no procedure for selecting AAC systems suited to the individual users' intellectual and language development (70.2%), the purchase of desired AAC systems was not possible due to financial constraints (50.2%), and trials with the desired AAC systems were not available (40.0%). Among students with mentally challenged, 2,616 students use utterances, 2,547 photos, and 2,441 cards used respectively. Among voice output communication aids (VOCAs), the Big (Little) Mac system was the most commonly used (667 users). On the other hand, among students with physically challenged 1219 students use utterances, 1054 eye-tracking, 918 photos, and 686 the Big (Little) Mac system respectively used.

## **Discussion**

Our questionnaire survey revealed that some means of AAC were used in approximately 90% of special education schools. Among them, nearly half of respondents reported there were some students who were sufficiently using AAC in all aspects of life. On the other hand, 30% of respondents had students who did not appear to be fully utilizing AAC to reflect their intentions, because of poor reliability of yes/no answers and doubt about consistency between communication outputs via the AAC and the user's intentions. These results indicate fundamental problems in the use of AAC, suggesting that procedures need to be established to assess the student's use of AAC. We also found that approximately 70% (60%, 50%, and 30% of elementary, junior high, and high schools), respectively, needed to newly introduce AAC systems, suggesting that it is necessary to systemize the selection of AAC systems based on the abovementioned assessment, especially during elementary and junior high school education. Financial constraints, the lack of opportunities to trial AAC devices, and a shortage of necessary information were the main reasons cited for difficulties when introducing new AAC systems. Accordingly, efforts must be made, particularly by local governments and companies, to provide sufficient information on the AAC devices available and establish systems that allow for trying out and renting these devices.

Furthermore, the types of AAC used by students with intellectual disabilities were different from those used by students with physical disabilities, and low-tech versions of VOCAs were used more by the latter than the former group. This suggests that assessing physical ability and establishing input methods suited for different levels of physical ability need to be addressed.

This study showed that, despite the more widespread use of AAC, it has not yet become a practical means of communication for many children with communication difficulties in Japan. Methods for selecting AAC systems based on users' intellectual and communication abilities and for introducing of systems that can be trialed should be established.

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