A Practice of Education Using Multiplayer Music Composition Environment on Game Console

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ABSTRACT
This paper reports on the practice of using “KORG Gadget for Nintendo Switch” (hereinafter called "Gadget Switch"), which is a multiplayer music composition software, aimed at kindergarten children to junior high school students.

The biggest feature of “Gadget Switch”, which is a port of “KORG Gadget” originally for iOS to Nintendo Switch, is that it can create songs with up to four players simultaneously.

At schools in Japan, teachers have already taught children how to compose music by using computer software, such as “Scratch” and “Pyonkee” (Moriwaki, 2017). In comparison, we consider that “Gadget Switch” has the closest function to the environments described in “Explanation Courses of Study for Elementary Schools - Music” : “use of computer software and educational equipment by children themselves”, “working with friends”, and “can create rhythms and melodies effortlessly”. Based on this idea, since February 2018, with the cooperation of various school, we have been teaching children from kindergarten, elementary school, and junior high school students to compose music consisting of approximately 1 bar loop music using “Gadget Switch”.

At present, the biggest problem that we have found is the “whole screen is soon filled up with notes” by allowing each player to easily place notes. Accordingly, the music heard is noisy and
incomplete as music. Particularly this is prominent with kindergarten and elementary school children.

In order to improve this problem, we have adjusted the teaching method and customized the software for each practice. The largest group size in our practice was a total of 30 students divided into 8 groups (8 devices for children, and one for teachers). (see Figure 1)

The following are the findings obtained from these activities.

- Regardless of student’s grade level, one “Nintendo Switch Dock” connected to a large display can be used to easily present and share the music created by each group to the entire class.

- With kindergarten children, we tuned the software and disabled the cursor repeat function to avoid entering continuous notes, but the tendency for notes to fill the entire screen did not change. (see Figure 2)

- With junior high school students, when we assigned approximately three students per group and a total of three groups, each group produced relatively coherent music.

- With elementary school students, by setting the rule of “up to 4-5 notes per student” for the rhythm track, it was possible to construct a relatively stable rhythm phrase. (see Figure 3)

- In about 50 minutes to 90 minutes, it is possible to perform 1 bar phrase composition several times. However, this depends on the number of students in the classroom.

WORK CITED

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**Figure 1:** Scene of class by 8 groups of 30 students

**Figure 2:** A screen filled with notes created by kindergarten children

**Figure 3:** Rhythm track with a limited number of notes for each student

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