



templates and paper craft templates of other objects appearing in the game. This makes it possible to check whether users have been making their paper craft after the workshops.

As a motivation for accessing the website, game content containing the paper craft templates is published. The screen of the game content is shown in Figure 2. The game can be played with a three-dimensional object using the paper craft template as a texture. It can also be played as a game after the workshops.

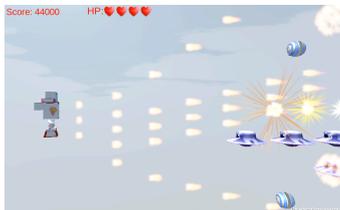


Fig. 2. Screen of game content

The website records the participant identification, start and end times for browsing, page identifier, and the user agent for each page. In addition, it records the paper craft template and the user identifier for each evaluation, download or print. This makes it possible to check which page the participant was browsing and for how much time, and the paper craft template of the participant, can be checked whether affected to the other participants.

### III. RESULT AND CONCLUSION

For the data on website, will discuss by comparing the users who posted and all users.

Hold of 11 workshops, there were introduction of the Web site in the workshops. A total of 941 people participated, and 988 paper craft templates were made. There were 128 registered users on the website, and there were 282 logins and 6088 page views. The average number of logins per user was 2.20, and the average number of page views per user was 19.87. The evaluation comprised of 74 cases. There were 44 users in the evaluation, who evaluated the paper crafts made by themselves or by other users. The average number of evaluations carried out by these users was 1.68.

There were 31 photos posted of the 10 paper craft templates. The users who posted were 10 people who participated in one of the 3 workshops. These users who posted can download or print, and there were 6 cases of downloads, and 8 cases of printing. The users who downloaded or printed, downloaded or printed their own paper craft templates. The average number of downloads among users who downloaded was 3.00. The average number of prints among users who printed was 2.67.

When restricted to users that posted, the average number of logins was 4.7, page views were 65.50, and evaluation cases was 3.86. In comparison with all of the users, the number of logins was 113.64% higher, page views 230.31% higher, and evaluations 129.34% higher for users that posted. The results of the comparison are shown in Table 1. Anyone logged in about 3 times, and since the rate of increase of page views is particularly large, it suggests that users who posted actively accessed the website.

TABLE I. COMPARISON OF THE WEBSITE DATA

	Logins	Page views	Evaluations
All users	2.20	19.83	1.68
Users who posted	4.70	65.50	3.86
Increase rate	+113.64%	+230.31%	+129.34%

In order to check the activity of the users who posted at the workshop, the quantity of paper craft templates drawn [2], the game play data and questionnaire data recorded in the workshops, were examined for relevant insights. Users who posted on the website had a greater quantity of drawings, and the increase in the quantity of outer and inner drawings between those who posted and all users were 99.62% and 29.14% respectively. The comparison of drawings is shown in Table 2. For the game play data, the increase in score was 29.27%, play time 7.30%, the amount of movement of the body 129.58%, and the amount of movement of the hands 127.23%, for the users who posted. The comparison of the game play data is shown in Table 3. For the questionnaire, all the users who posted on the website answered "No" for the question "When you drew a picture of the robot, did you have someone to help you?" The drawings are rough but wider than those without help, and their game playing has higher scores and large amounts of movement, suggesting active participation.

TABLE II. COMPARISON OF DRAWING QUANTITY

	Outer drawing	Inner drawing
All users	1.00%	40.13%
Users who posted	2.00%	51.82%
Increase rate	+99.62%	+29.14%

TABLE III. COMPARISON FOR THE GAME PLAYING DATA

	Score	Time	Body movement	Hands movement
All users	52.22	79.56	358.62	603.01
Users who posted	67.50	85.37	464.69	767.22
Increase rate	+29.27%	+7.30%	+129.58%	+127.23%

Based on these results, we can see that the participants who posted photos of the paper craft they made after the workshop often accessed the website, and also actively participated in craft making in the workshop. On the other hand, there currently are only 10 users who posted, which therefore is a small number. In addition, results regarding the stimulation of other participants towards making paper craft have not been obtained. As improvements, the continuation of the workshops, and collaboration through SNS as motivation to access the website, are being considered.

### ACKNOWLEDGMENTS

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### REFERENCES

- [1] H. Suzuki, H. Sato, H. Hayami, "Development of 3D game system that attracts children to actively participate in paper craft activities," IPSJ transactions 3(1), pp.10-19, 2015
- [2] H. Suzuki, H. Sato, H. Hayami, "A Prototype of Image Analyzing System for Acquiring Quantity data from Analog Sketch data," IPSJ SIG Technical Reports 2016-GN-97(31), pp.1-5, 2016