

Fig. 3. The mean number and standard deviation of mistaken answers on the Ishihara test for each group classified by the result using Panel D-15 test.

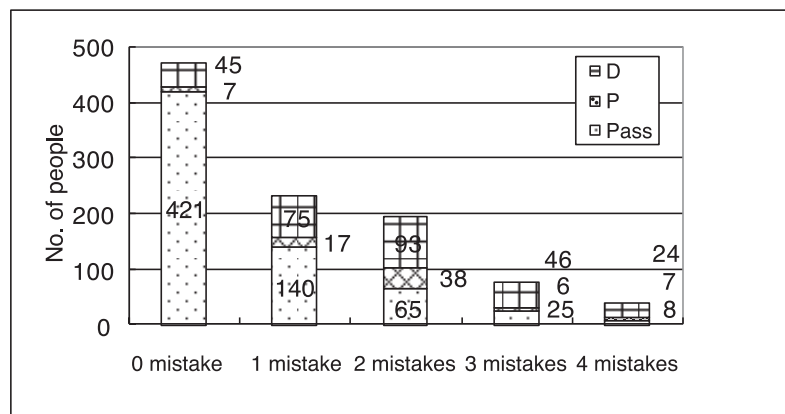


Fig. 4. The number of people in the Pass group, P group, and D group from the Panel D-15 for the mean number of errors on the CMT.

Table 5. A comparison of the CMT and Panel D-15 test results.

	Panel D-15 test: Pass	Panel D-15 test: Fail	Total
CMT: Pass	421	52	473
CMT: Fail	238	306	544
Total	659	358	1,017

on the Ishihara test and CMT were compared for each of the three groups from the Panel D-15 test. The statistical analysis was done using the SPSS version 17 statistical software package. The data for the three groups was tested using one-way analysis of variance, and the  $\chi^2$  test was used to test the distribution of data between the groups.

**3.1.1 Comparison of results of Panel D-15 test and Ishihara test** Judging from the Panel D-15 test, there were 659 students in the Pass group, 75 students in the P group, and 283 students that D group (total 1017 students). The mean number and standard deviation of mistaken answers on the Ishihara test for each group are shown in Fig. 3. The number of mistaken answers on the Ishihara test was  $5.9 \pm 2.13$  (mean  $\pm$  standard deviation) in the Pass group,  $7.47 \pm 0.77$  in the P group, and  $7.25 \pm 0.96$  in the D group. A statistically significant difference was seen between the groups in a one-way analysis of variance ( $p < 0.001$ ).

**3.1.2 Comparison of results of Panel D-15 test and CMT** Figure 4 shows the number of people in the Pass group, P group, and D group from the Panel D-15 for the

mean number of errors on the CMT. The number of errors on the CMT was  $0.57 \pm 0.95$  in the Pass group,  $1.85 \pm 1.02$  in the P group, and  $1.75 \pm 1.16$  in the D group. A statistically significant difference was seen between the groups in a one-way analysis of variance ( $p < 0.001$ ).

Students who gave all correct responses on the CMT were classified in the CMT Pass group, and those who made one or more mistakes in the CMT Fail group. A comparison of the CMT and Panel D-15 test results is shown in Table 5, with P and D together taken to be the Panel D-15 Fail group. Of the students in the Pass group with the Panel D-15 test, 421 (63.9%) were in the CMT Pass group and 238 (36.1%) were in the CMT Fail group. Of the students in the Panel D-15 P group, 7 (9.3%) were in the CMT pass group and 68 (90.7%) were in the CMT Fail group. Of the students in the D group, 45 (15.9%) were in the CMT Pass group and 238 (84.1%) were in the CMT Fail group. The percentage of those in the Fail group on the Panel D-15 test who were judged to be Fail with the CMT only was 85.5%. In contrast, the percentage of those in the Panel D-