

Developmental curves for the portable rod-and-frame test

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Developmental curves for males and females between the ages of four and 13 were presented for the portable rod-and-frame test. The present findings extended the work of Witkin, Goodenough, and Karp (1967) and was generally supportive of their finding that increased field independence accompanies increases in age.

Witkin, Goodenough, and Karp (1967) reported Rod-and-Frame Test (RFT) scores for 8, 10, 11, 12, 13, 15, and 17 year olds. They found that both males and females showed an increase in field independence as a function of age (made fewer errors in the RFT). Further, they also found an overall sex difference consistent with the usual findings that males produce fewer errors than females. While Witkin et al. (1967) were able to document the increase in field independence occurring between 8 and 17 years, they cautioned against extending their curves downward so as to include children below 8 years of age. The present study was designed to investigate RFT performance in children below 8 years of age, i.e., to extend the curves downward until the children could no longer follow instructions. The present report does not deal with the theoretical issues accompanying these developmental curves since Witkin et al. (1967) have already discussed these issues in detail.

METHOD

Subjects

The subjects were 100 male and 100 female children enrolled in the Campus School at the State University College at Oswego. Ten male and 10 female children were randomly selected for each age group with 10 groups of children ranging in age from four through 13 years.

Procedure

An Oltman (1968) type portable RFT was used to measure field dependence. Each child was given eight trials in the RFT, four trials with the frame tilted to the left and four trials with the frame tilted to the right. The frame tilted 28-deg to either right or left and the starting position of the rod was randomized for each trial. Each child was told to make the rod "straight up and down like a flag pole." Some of the younger children required a visual representation of a flag pole and some of the children required a few practice trials before they were able to complete the task. The score for each child was the mean of the deviations from true vertical without regard to direction for the eight trials.

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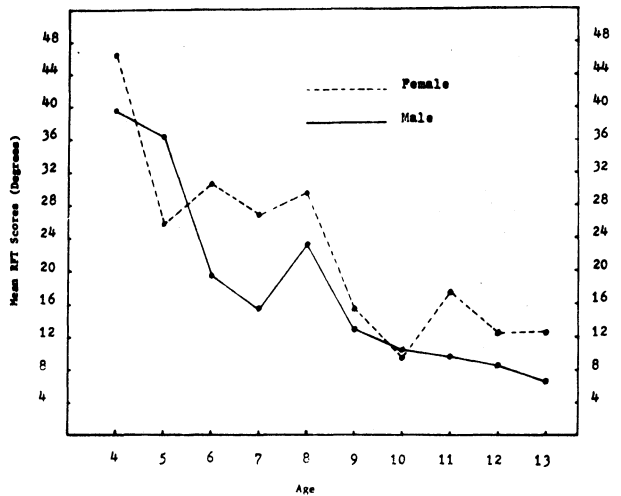


Figure 1. Developmental curves for the portable rod-and-frame test based on cross-sectional data.

RESULTS AND DISCUSSION

Figure 1 summarizes the RFT means for each age group. A significant linear component was found for the female curve while for males, significant linear and quadratic components were found. It would seem that for both males and females increased field independence (lower RFT scores) is associated with increased age; however, for males the rate of change decreases more rapidly than it does for females. As may be seen in Figure 1, beginning at about nine years of age, male RFT performance begins to level off while females show much greater variability. In general, these data are supportive of the Witkin, Goodenough, and Karp (1967) findings and any differences could be attributed to sampling differences.

Also consistent with the Witkin et al. (1967) data was the present finding that overall, males made fewer errors in the RFT than did females ($F = 6.72$, $df = 1/162$, $p < .01$). These data are also consistent with Witkin et al. (1967) in terms of not finding significant sex differences for any particular age group included in the

present study. Dreyer, McIntire, and Dreyer (1973) however, have indicated that males as young as five years have been found to be more field independent than five year old females. The present failure to find significant sex differences, apart from an overall difference, may simply be due to the restricted sample size of the present study. Nevertheless, comparisons between the Witkin et al. (1967) curves and the present curves suggest that the present data affords a reasonable extension of RFT performance downward to the very young.

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