

## 外 国 語 要 旨

学位論文題目 The effects of television viewing on academic achievement and intellectual abilities

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This thesis reports the findings of five individual studies on the effect of children's television viewing on their academic achievement and intellectual abilities. The objectives of this thesis are: (1) scientific integration of the findings of previous studies and accumulation of experimental research findings in Japan; (2) close examination of variances in correlations and causal relationships between television viewing and academic achievement/intellectual abilities in terms of the content or type of television programs, academic achievement, and intellectual abilities; (3) examination of whether or not the effect of television viewing can be explained by replacing it with reading books, studying at a prep school or at home; (4) investigating of mothers' perceptions and attitudes toward television viewing; and (5) examination of the moderating effect of mothers' perceptions and attitudes toward television viewing on children's academic achievement/intellectual abilities.

In Study 1, 508 effect sizes obtained from 66 studies on the relationships between television viewing time and academic achievement/intellectual abilities were sorted and integrated by country, time of data collection, study design, television program genre, type of academic achievement/intellectual ability. Note that the effect sizes obtained from zero-order correlation coefficients were separated from the effect sizes obtained from partial correlation coefficients. The study indicated that the correlations between television viewing time and academic achievement/intellectual abilities varied with the television program genre. The study also revealed that the television viewing time had significantly negative correlations with overall school performance, IQ scores, intellectual abilities and performance in various school subjects including reading, mathematics, social studies, science, creative activities, and development of imagination.

In Study 2, the total amount of children's exposure to television (note: while "viewing" refers in this thesis to the state of active viewing of a television program, "exposure" means the state in which a television is on in the presence of a participant irrespective of whether or not he/she actually watches it), videos, and video games as well as the amount of exposure to television for each channel were measured based on participants' TV, video, video game viewing/using weekly diaries and using a viewing state measurement device. The objective of this study was to examine the criterion-referenced validity of the TV, video, video game viewing/using weekly diaries, which were to be used in Studies 3 and 4. The study indicated that the criterion-referenced validity of the amount of television exposure reported in the TV, video, video game viewing/using weekly diaries was equal to or higher than that reported by the previous study.

In study 3, a two-wave longitudinal study was conducted with 5th graders. The objective of this study

was to examine by path analysis the effect of the amount of exposure to non-educational television programs and educational television programs measured at T1 on their intellectual abilities measured at T2. The analysis indicated that, while the amount of exposure to non-educational television programs had a positive effect on the spatial processing abilities of the participants, it had a negative effect on their linguistic abilities. The analysis also showed that the greater amount of exposure to educational television programs had a positive effect on their understanding of social rules. These results suggested that some intellectual abilities were influenced solely by the television viewing time while other abilities were influenced by the content of television programs. Then, the effect of educational television programs on their intellectual abilities was studied for each program theme. The result indicated that different program themes may influence intellectual abilities in different ways.

In Study 4, longitudinal study data collected for 11 years was used to examine the influence of the amount of time spent on reading, the amount of exposure to television, and the television viewing time on the participants' academic achievement in Japanese. First, the amount of exposure to television, television viewing time, and the amount of time spent on reading were measured when the participants were in the 2nd or 3rd grade. Then, structural equation modeling analysis was conducted to examine the influence of the measurement results on their academic achievement in Japanese two years later. As a result, the greater television viewing time measured when the participants were 2nd or 3rd graders had a negative effect on the academic achievement in Japanese two years later. Whereas the greater amount of reading measured when the participants were 2nd or 3rd graders had a positive effect on the academic achievement in Japanese two years later. Note that the effect of television viewing on the academic achievement in Japanese two years later may be explained by replacing the amount of television viewing with the time spent on studying at a prep school or at home.

Latent curve analysis was also conducted. First, the amount of exposure to television, television viewing time, and the amount of time spent on reading were measured from the time when the participants were 2 or 3 years old to the time they were 2nd or 3rd graders. Then, the relationships between the intercepts and slopes of curves of each media using time and the participants' academic achievement in Japanese were examined. As a result, the slopes of the amount of exposure to television and the amount of television viewing had negative effects on the academic achievement in Japanese. This suggested that the academic achievement of the participants in Japanese were negatively influenced by the higher rate of growth of the amount of exposure to television and television viewing from their early childhood to when they started school. Meanwhile, the slope of the amount of reading had a positive effect on the academic achievement in Japanese indicating that the higher rate of growth of the amount of time spent on reading resulted in an improvement of the academic achievement.

Study 4 further revealed that a mother of a family with high socio-economic status (SES) had lower dependence on television, was more concerned about negative effects of television viewing, and more intervened in children's television viewing than a mother of a family with low SES. Note, however, the mothers' attitudes toward

or thoughts about television viewing had no moderating effect on the relationship between children's television viewing and their academic achievement.

Based on the result of these 4 studies, a process model describing how television viewing influenced children's academic achievement/intellectual abilities is presented.