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THE INTERACTION OF
SELECTED INSTRUCTIONAL PROCEDURES
WITH SOME PUPIL VARIABLES:

A PILOT STUDY

A thesis presented in partial fulfilment
of the requirements for the degree of Master
of Arts in Education at Massey University.

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1970

ABSTRACT

This investigation reports an experimental study of the interaction between children manifesting different cognitive styles (descriptive, categorical and relational) and two instructional methods (rule-explained, and rule-derived). The subjects for the experiment were 120 high-scorers (stanine 7+) on the specially-constructed cognitive style instrument. Equal numbers of Form I girls and boys were randomly assigned to four groups in two experimental conditions. With sex, cognitive style and method the major independent factors, the basic cell in the factorial design comprised five pupils. Teachers were added as a control, and with objectives and occasions of testing being measured across all pupils, the full design became a seven-variable one, pupils being the doubly-crossed nested factor.

The concepts and principles of stability were taught to the four groups of thirty children, over two class periods totalling one hundred minutes. The specially-trained experimental teachers taught two classes each, one by Method R.E., the other by Method R.D. Control methods included random assignment, the crossing of time, order and place of teaching, and the equating of time and content. Four dependent measures were constructed to assess pupil performance at two levels of objectives, knowledge and understanding, and application-transfer. Administered by the one tester in the school hall to all subjects, on two occasions (the day following the experimental teaching and fourteen days later), the four tests

provided measures of initial learning, transfer, retention and delayed-application-transfer.

The major interaction hypotheses postulated a higher mean score for "descriptive" children after Treatment R.D., and a higher mean score for "relational" children after Treatment R.E. Neither hypothesis was supported by the data. However, significant sex differences in cognitive style were observed. Boys tended to make more descriptive responses than girls at this age, while girls tended to make more relational responses than did the boys. Treatment R.E., an expository procedure, led to higher initial learning and retention scores than did Treatment R.D., but scores on the application-transfer tests did not differ significantly. Relative scores, however, displayed a contrasting pattern between the two method groups. The mean scores of the R.E. group for the three tests following the first test administered, were all below the measure of initial learning, whereas the reverse pattern was evident for the R.D. group.

Further examination of the data for each of the dependent measures by means of four-way analyses of variance and of covariance, was carried out. While these procedures provided additional evidence, certain limitations in the experiment and in the instruments used qualified the findings.

ACKNOWLEDGEMENT

I should like to acknowledge with gratitude the assistance given me by many people during the course of this study. In particular, I would thank the following:

The headmasters, staff and children of the schools co-operating in the experiment, and in its preparatory phases;

The ten Teachers College students who trained and acted as experimental teachers and observers;

Several staff colleagues of Hamilton Teachers College, especially Mr J. Dickie, who constructed the general models of Appendix C and who acted as a consultant on statistical problems, and Mr R. Katterns, who trained the team of students who coded the Amidon-Flanders Interaction-Analysis;

Professor C.C.N. Hill, who provided the original impetus for the study, and whose guidance and constructive comment I have valued;

and, finally,

My wife and family, the former for typing the report, the latter for assisting with many clerical tasks, all for their tolerance and encouragement.

E.L. Archer

Hamilton.

7th March, 1970.

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