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ABSTRACTS
RESUMES

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the interaction are didactic toys, reflecting adults' knowledge about experiment design, children's cognitive potential and interests, and aims of the dialogue. Principles of the dialogue, simplified, and aims of the 
objects, stimulating children's CET to combine factors and analyze factor interactions, were formulated. A 
system of 6 appropriate toys was designed. They can be considered as means to reveal zone of proximal 
development of children's experimentation. Subjects were 197 children aged 4-6 years. Their 
experimentation on these objects is characterized by the following. (1) Motivation of CET is salient. It is 
manifested by stable increasing level of factor combinations, the child's interest in mechanisms and effects 
of factor interactions, and independent creating multi-factor problem situations. (2) The children create 
specific strategies to combine factors and analyze their interaction. These strategies are not general and 
logically exact, but they can be effective enough to explore, comprehend and use a multi-factor object. (3) 
These changes, on the one hand, are based on and, on the other hand, serve as sources of changes in the 
children's knowledge about multi-factor objects and about the subject areas (e.g. mechanics, mathematics, 
logic), to which the multi-factor relationships are related.

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Affective and motivational aspects of vygotskys zone of proximal development

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In dynamic assessment Vygotsky's idea of the zone of proximal development is worked out by giving 
(intellective) help in order to assess learning potential. This idea is now widely accepted in research into the 
intellective factors. We transposed this basic idea to non-intellective factors. We have developed affective 
and motivational prompting procedures that enable the diagnostican to give affective and motivational 
support to the child whenever the diagnostician observes that non-intellective factors are affecting test 
performance negatively. In the paper an empirical study into the effect of these affective and motivational 
prompting procedures is presented.

Our affective and motivational prompting procedures distinguish four categories of non-intellective help: (I) 
Attention; (II) Impulsivity; (III) Passivity; and (IV) Uncertainty/Fear of Failure. For each category 
observation criteria were developed and three levels of helping instructions were described. The first level 
consists of directing attention; restraining from impulsivity; activating; and reassuring. The kind of help 
offered on this first level is usually sufficient to secure optimal test performance with children who have 
minor emotional and motivational problems. On the second level a more intense type of help is given. 
This help consists of a verbal explicitation given by the examiner of the disruptive behaviour of the child 
and an interpretation of the need, emotion, or conflict that lies behind that behaviour. This technique is 
borrowed from psycho-dynamic psychotherapy. According to Halberstadt-Freud for children with affective 
and motivational problems first-level help does not produce the desired effect and is often even 
counterproductive because such help neglects, or even contradicts, their feelings (Halberstadt-Freud, 1989; 
Cole, 1953; Feuerstein, 1979). By being given verbal explicitation, the child experiences the examiner as someone who understands his or her problems and who may be an ally in completing the test tasks (supposing, of course the child feels 
that the elucidation is right). This causes a re-appraisal of the testing situation by the child - a relaxation 
of the tension. On the third level of our helping instructions, feedback is given. Successes are concretely 
attributed to the competence of the child and/or to his or her effort, whereas failures are attributed to task 
difficulty or to chance.

In the paper data are presented from an empirical study in which an experimental design is used: affective 
and motivational help is given with a non-verbal analogical reasoning task borrowed from a standardized 
individual intelligence test (SON). Thirty students with learning problems from the Leiden Pedagogical 
Institute are used as subjects. We used a two-group crossover design with random assignment. For the 
baseline (pretest) measures were obtained on all subjects of the two groups, (2) posttest 1 (treatment/control), and (3) posttest 2 (control/treatment).

Anova-analysis reveals a significant (p<0.004) effect of affective and motivational prompting on non-verbal 
analogical reasoning intelligence scores. The mean magnitude of the effect is 9 IQE points.

The results are discussed with respect to the theoretical thinking of Vygotsky and Piaget about the 
relationship between intellective and affective factors in development, the widely used intellective 
operationalization of Vygotsky's idea of ZOPD, practical intelligence testing and education for cognitive 
development.