

Inquiry learning for gifted children: how much support should be given?

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Introduction

It is often suggested that gifted children should be presented with open, complex tasks, such as inquiry learning tasks. In general, inquiry learning is an effective way of learning, provided that children are supported in their inquiry learning process. Not clear, however, is whether *gifted* children should also be supported. This study investigated whether and how much gifted children should be supported during inquiry learning.

Materials and method

In total, 64 gifted primary children were randomly assigned to one of three conditions differing in the amount of support given in an inquiry task in the electricity domain.

Unstructured inquiry



Electric circuits
Investigate the influence of the amount of batteries on the intensity of the light.

Structured inquiry



Electric circuits
Investigate the influence of the amount of batteries on the intensity of the light.

? What do you think will happen when another battery is placed in the circuit?

Place an extra battery in the circuit.

What happens with the intensity of the light?

Exposed inquiry

? What do you think will happen when another battery is placed in the circuit?

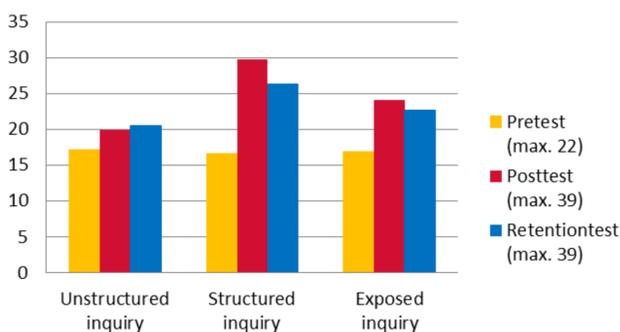
I now place an extra battery in the circuit.

We now see that the light shines brighter.

Electric circuits
? What do you think will happen when another battery is placed in the circuit?

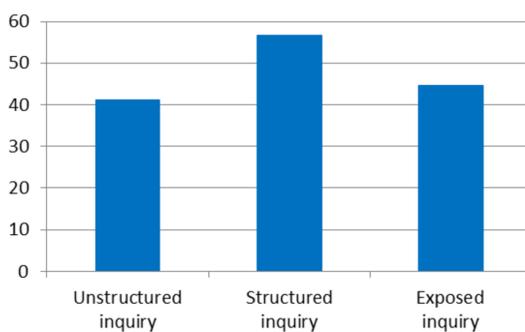
Results

Knowledge



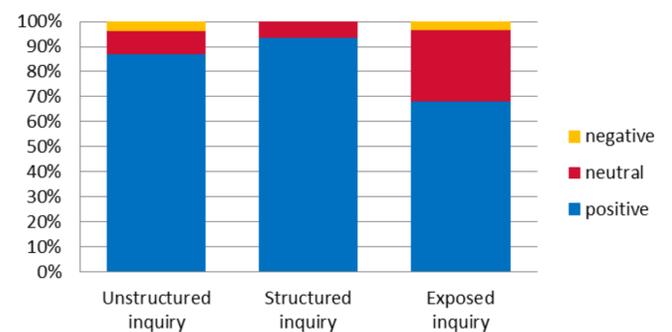
Flow

Flow Short Scale (Rheinberg et al., 2003)



Mood

Smileyometer (Read, 2007)



Results showed that learners in the structured inquiry condition outperformed learners in the other two conditions on the posttest ($F(2, 55) = 8.50, p = .001, \eta_p^2 = .24$). They also experienced significantly more flow than learners in the other two conditions ($F(2, 55) = 7.47, p = .001, \eta_p^2 = .21$) and they indicated being in a positive mood more often than learners in the exposed inquiry condition ($F(2, 56) = 4.82, p = .012, \eta_p^2 = .15$).

Conclusion

Gifted children learned most from inquiry learning when they were allowed to experiment themselves, but only when their inquiry learning process was structured by prompts to hypothesize, experiment, and observe/conclude. When given this structure, they also experienced more flow and were more motivated during learning. The overall conclusion is that gifted children should be supported in their learning process in order to optimally benefit from open, complex tasks.