Self-explanation and Explanation in Children with Learning Difficulties

Qais Ibrahim Almeqdad

University of Cambridge

A dissertation submitted for the degree of Doctor of Philosophy
Supervised by Dr. David Whitebread

2008

Faculty of Education

Homerton College
Summary

This study is aimed at exploring the capability of children with learning difficulties (LDs) of using self-explanation and explanation whilst learning basic mathematics in a naturalistic classroom setting in relation to the variables of age, ability levels and achievement, and also exploring the development of their teachers' perceptions and practice during the course of this exploratory instruction. Three resource room teachers encouraged 20 of their children, identified with learning difficulties and aged from 7.5 to 11.5 years, to engage in activities of self-explanation and explanation. The study drew on some elements of participatory action research and grounded theory, and used four methods of data collection: video observations, Individual Instructional Plan (IIP), teachers' informal discussions and teacher's reflective dialogues. Further, it applied a mixed methods approach for data analysis.

The findings showed that the participant children were capable of generating different kinds of self-explanations and explanations in response to a variety of questions posed by their teachers. In particular, they were capable of identifying concept and relationships, engaging in predictions of mathematical operations, procedures and outcome, articulating the procedures which they applied to solve a given task, explaining the cause and effect of their own reasoning, explaining the cause and effect of the teacher's reasoning, and, finally, evaluating their previous knowledge.

As the instruction progressed, the children were found to develop in some kinds of self-explanation and explanation, and, interestingly, to maintain their development during a follow-up assessment. The findings further revealed that differences in the generation of self-explanation and explanation were highly associated with the age and achievement levels of the participant children but not their ability levels. Additionally, the developments in the teachers' perceptions and practices seemed to be related to the children's progress during the course of the instruction, a mutual and beneficial relation having developed in the teacher-pupil interactions, a core component in the use of self-explanation and explanation for children with LDs.

The findings in the current study, though not definitive, seem to suggest that children with LDs could benefit from using self-explanation and explanation, which enabled the participant teachers and children to engage in interactive learning processes by supporting the teachers' practice, and developing these children to become more metacognitively aware of their own learning and develop as strategic self-regulated learners.