Mavrou, K., Lewis, A. and Douglas, G. (2010) 'Researching computer-based collaborative learning in inclusive classrooms in Cyprus: The role of the computer in pupils' interaction'. *British Journal of Educational Technology*, 41(3), 486-501.

Abstract

This paper discusses results from a study on computers' roles in scaffolding pupils' interaction and the effects on disabled (D) pupils' participation and inclusion in the context of socio-cultural theories and inclusive education ideals. The study investigated the interactions of pairs of D and non-disabled (ND) pupils working together on computer-based tasks in Cypriot mainstream primary schools. Twenty dyads of pupils (each comprising one D and one ND child) were observed and videotaped while working together at the computer. Data analyses were based on events' collaborative nature for non-verbal interaction and functional-structural approaches for verbal interaction. Through video analyses, seven central aspects were identified: helping behaviours, motivation, self-confidence, peer-acceptance, affection, positive and negative socio-emotional status, and the computer's input. The results showed that the computer was a mediational scaffolding agent of the other six areas of the participants' interaction, as it:

1. was an important interactional agent for initiating and terminating conversations;
2. facilitated interaction and participation as an intellectual and physical tool;
3. promoted different (not always positive) interaction styles through the various input and output devices, by differentiating participation.

Hence, the computer emerged as the third party in the collaborative activity, providing various opportunities and motivations for interaction.

Main findings

Computers may well become a powerful resource whereby teachers may support increased collaboration in the classroom. The ever-increasing applications of technology make it difficult to identify and evaluate those that actually foster collaborative learning in education. The challenge in this is to consider in particular pupils' and teachers' needs when designing technology and technological applications for collaborative learning (Lipponen & Lallimo, 2004).

In this study, pupils and teachers felt that the computer made a difference to the style of their interactions and type of participation. In informal interviews, D and ND pupils alike repeatedly referred to their preference for working together at computers. Similarly, teachers expressed both pupils' and their own opinion about the value of the use of computers, especially for collaboration and inclusion. Video analysis provided vital and refined information about pupils' collaboration at the computer.

The computer's presence proved to be important in generating different styles and opportunities for interaction among peers, both physically and intellectually. The use of technology provided a reinforced Initiation–Discussion–Response–Follow-up interaction pattern, and at the same time particularly facilitated participation by D pupils. It was also presented as a promising way to adapt instruction to individual differences and promote the development of social acceptance and morality skills and values, especially in relation to disability. In the framework of initiating interactional exchanges, the computer supported the transformation of simple computer-user interaction into a more complex experience by prompting pupils to engage in dialogue and actively participate in the educational process. Similarly, analysing the computer's role in mediating interaction and participation provided

a better insight of how technology is about engagement and inclusion. Pictures, symbols, words, animations, etc. can be combined in interactive ways to facilitate pupils' understanding and engagement. In addition, computer peripherals, as they were used in a collaborative learning setting, served as facilitators of both social and cognitive participation. Firstly, sharing mice and keyboards proved to be a trigger for conflict resolution strategies, mutual respect and acceptance of each other's turn, role and responsibilities. Secondly, these technological means, together with the software and content, were tools for handling information and communication not only cognitively but also physically, increasing engagement in a worthwhile level of interaction opportunities.

Type of material

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