THE IMPORTANCE OF IDENTIFYING
PARTICULAR STRENGTHS: SPATIAL ABILITY IN PUPILS
WHO ARE AT RISK OF NOT LEARNING TO READ

Submitted by Christine Anne Burgoyne,
to the University of Exeter as a thesis for the degree of

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I certify that all material in this thesis, which is not my own work, has been identified and
that no material has previously been submitted and approved for the award of a degree by
this or any other university.
Dedicated
to the memory of
Edward Bond Hopper
1911 - 1970
ABSTRACT

Recent studies have shown that there may be evidence that children with reading difficulties have particular compensatory spatial ability, although the exact spatial ability has not been identified. This study used qualitative and quantitative methods to examine closely two spatial abilities, spatial visualisation (mental rotation from memory) and visual realism (three-dimensional drawing and construction ability) in students with reading problems and students with no problems.

The aim was also to explore the question of whether students with spatial ability and reading problems were encouraged to use these strengths either in or out of school and whether such abilities could be identified in the early years environment. Equally, the question of motivational failure related to possible unrecognised potential, particularly in the area of non-verbal/spatial ability was also examined. This study used longitudinal case studies with five children and their mothers over a period of ten years. Interviews were transcribed and analysed using a grounded theory approach. Researcher observations as the teacher of the five children in their primary years provided additional evidence of their reading and spatial abilities at an early age. In addition, the study uses a Further Education College survey that examines spatial ability and reading problems in 133 post-16 year olds that provides the quantitative element of the study providing evidence about students with spatial abilities and their career choices.

The data analysis revealed that the five case studies had largely overcome their reading problems due to early intervention strategies for reading together with encouragement and support outside school for their spatial abilities. Additionally, they have pursued careers, which for the most part, uses their spatial skills. The data analysis of the College survey showed that the link between spatial ability and reading problems was less secure, although there were a number of students with Specific Learning Difficulties (SpLD) who had high spatial abilities and this proved to be important from the point of view of identifying strengths alongside weakness in literacy, particularly in the early years at school.

Early identification and acknowledgement of spatial ability as a perceived strength and used to support learning, as opposed to identification of reading problems, a perceived deficit, proved to be a key finding of the research.
ACKNOWLEDGEMENTS

This research would not have been possible without the support of the parents and young people who took part in the case study and the college students who participated willingly in the drawing and computer based tests.

I am grateful to all the staff at Exeter University, and particularly Brahm Norwich my supervisor, for the opportunity to complete this study and for their encouragement and support throughout this lengthy research process.

Finally, I wish to thank my husband and family who have supported me throughout the last ten years
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