Title: Using multivariate data as a focus for multiple curriculum perspectives at secondary level.

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Abstract: Multivariate data is pervasive; being able to understand multivariate data ought to be an outcome of everyone's education, and engaging with multivariate data should be a component of that education. A number of authors (e.g. Ridgway, Nicholson and McCusker; 2006; Chance, 2002) have commented on the irrelevance of many statistics courses for dealing with real evidence in everyday life.

Things can be done better. Du Feu (2005) and Ridgway, Nicholson and McCusker (2006) have shown that young students can make sense of multivariate data, given appropriate interfaces. In the school curriculum, many subjects engage with complex contexts where multiple factors interact; however, realistic multivariate data have rarely been used because of the perceived conceptual difficulties, and a lack of quantitative skills in some curriculum areas.

One approach is to forge stronger links across traditional subject areas, and the Northern Ireland Curriculum Authority (CCEA) recently made a commitment to introducing more cooperation between subjects. Our current project with CCEA uses multivariate data presented via innovative interfaces as a focus for multiple perspectives on various contexts. The Northern Ireland Commissioner for Children and Young People has identified risk-taking behaviour in the young and children and poverty as two of its current priorities, and we are developing data-rich resources to support education in these areas.

This paper will explore the rationale for the inclusion of multivariate data within the school curriculum, and exemplify the type of curriculum activities made accessible by innovative interfaces that present complex data. We will show some early results relating to factors which facilitate or inhibit student understanding, and will show how better interfaces can engage students who have found traditional mathematics and statistics difficult.