Visual Analytics in K 12 Education: Emerging Dimensions of Complexity

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Abstract : The aim of this paper is to understand emerging learning conditions, when a visual analytics is implemented and used in K 12 (education). To date, little attention has been paid to the role visual analytics (digital media and technology that highlight visual data communication in order to support analytical tasks) can play in education, and to the extent to which these tools can process actionable data for young students. This study was conducted in three public K 12 schools, in four social science classes with students aged 10 to 13 years, over a period of two to four weeks at each school. Empirical data were generated using video observations and analyzed with help of metaphors by Latour. The learning conditions are found to be distinguished by broad complexity characterized by four dimensions. These emerge from the actors' deeply intertwined relations in the activities. The paper argues in relation to the found dimensions that novel approaches to teaching and learning could benefit students' knowledge building as they work with visual analytics, analyzing visualized data.