Scoping Paper 7a: Teaching {Stats / QM} and Training Trude Sundberg, Rachel Cohen

Why has a concern with Applied Stats / QM training arisen now?
What is the historical social and political context in which this has been prioritised? It could be argued to be driven primarily by economic incentives, as we see the lower quantitative skills of social science graduates being used as an argument for the Q-Step initiative, employability being used as the primary important carrot for student engagement with the schemes and incentive for changing ideas about numeracy. And, of course the economic importance of 'Big Data' in the 'knowledge economy' (two concepts that have never been very well defined) are endlessly trumpeted, along with the need to acquire clearly defined (and measurable) skillsets to compete in a global market. Social differences in 'abilities', for instance relating to class background, ethnicity or gender have not been a main focus of the initiatives, although they are there. One could argue, however, that it is extremely important that these are taken into consideration by those implementing these initiatives and creating new programmes etc.

What has been the range of responses: ESRC QM Initiative / Q-Step / British Academy (2015) / Core Maths, etc.?
A wide range of responses have evolved, including investment in new approaches to teaching and growing enthusiasm for statistics amongst students and staff both in Secondary Education and at Universities. These seem to be arranged along different dimensions, creating new programmes that engage students, creating new programmes that give students a more advanced skillset to analyse the growing amount of data we find in society, and a set of programmes focused on providing students with the skills associated with employability. The relationship between these, or tension between the different goals, is not generally highlighted. And again, is there insufficient attention to groups that generally do worse in statistics? Related to this, how may the concentration of resources in a limited number of relatively elite institutions affect inequalities in QM skills? Meanwhile, are the skills that are focused on enabling students to ask critical questions? And who is best placed to determine what should be included in these programmes or to run them day-to-day: Government ministers, social scientists, statisticians, mathematicians, business leaders, others?

What is the scope for critical or radical approaches within these initiatives?
In short- lots of scope, but ambiguous realisation?
More resources to teach quantitative methods to students, especially to teach beyond the more socially conservative disciplines of Economics and Psychology, provides a huge potential to increase the focus and skills to analyse the society in a critical way as students get skills that go beyond technical application and use of quantitative methods. And hopefully as these students go out into society, this provides a new generation that is data literate, critical (even radical) and questioning. But for this to happen modules and courses need to include a focus on asking questions, a focus on understanding the differential aspect of the social world [the tendency of the social world to differentiate and to stratify ? je] and programmes need to go beyond simple employability as a goal. Whether this is possible in programmes that are increasingly constructed around strengthening the ties between universities and employers, is unclear.