Exploring scientific resilience with KS3 students

Mufleha Ahmad

Use of diary like entries each science lesson and interviewing
Scientific resilience traits identified by a thematic analysis:
➢ The language of science - use of scientific terminology measure students’ competencies
➢ Links with other subjects like mathematics can increase difficulties
➢ The appreciation of science - value of science
➢ Science is difficult thought approached very differently by each student
➢ Getting stuck and seeking help
➢ Getting it wrong, trying and not giving up
➢ Making mistakes

Use of diary like entries each science lesson and interviewing
Other factors that may impact scientific resilience:
➢ Impacts of teaching
  ➢ Teacher - highly significant to students as it was mentioned 50 times
  ➢ The pedagogy of teaching - the method of teaching adopted by teachers was mentioned 114 times
➢ Science topic being studied, personal preference impacted engagement and therefore learning
➢ Student view on learning
  ➢ Understanding identified by students when they made little mistakes or achieved high marks
  ➢ Success in science
  ➢ Learning and knowledge - too much content
  ➢ Encountering knowledge for the first time - naturally difficult

5 different science topic tasks given to the triad to collaboratively produce answers whilst thinking out loud
How scientifically resilient students talk and write science?
➢ Majority of the learning interaction were cognitive information (Kempa and Ayob, 1991)
➢ Expressing disapproval and seeking guidance were the most prevalent types of interpersonal talk (Kempa and Ayob, 1991)
➢ Using De Andrade, Freire and Baptista’s (2019) system of analysing written work it was clear the students mostly wrote down non-explanations, and secondly gave macro descriptive answers. Both of which were not explanations.
➢ It was concluded that students at this age did not have the vocabulary, or the articulation skills required to explain their knowledge. This is taught at GCSE level over 3 years.
➢ Resulting in a debate of whether I need to analyse their answers as a teacher or as a researcher.

References